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RAIN: Journal of Appropriate Technology

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RAIN

Journal of Appropriate Technology

OCTOBER 1976 VOL. III, NO. 1 ONE DOLLAR

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INSIDE:

AGRICULTURE·FOOD

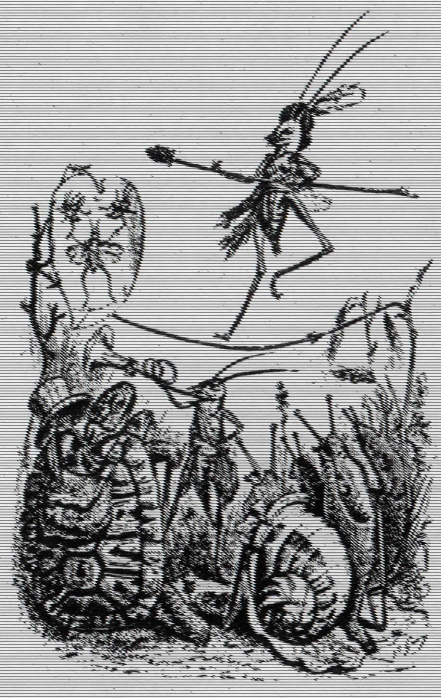
Radical Agriculture, **edited by Richard Merrill, 459 pp., index, $6.95 paperback from:**

Harper Colophon Books
Harper & Row
10 E. 53rd St.
New York, NY 10022

California's New Alchemist, Rich Merrill, has put together the best introduction to the new–with the best from the old–agriculture. Contributors read like a roll call of pragmatic food futurists: Jerry Goldstein, Helga Olkowski, John Todd, Paul Relis, Bill McLarney, Michael Perelman, Murray Bookchin, Wendell Berry and Peter Barnes; covering land reform, agribusiness, energy efficiency, the green revulsion, food cooperatives, urban agriculture, organic farming, aquaculture, biological pest control.

You'll see more in RAIN's Nov. '76 issue, possibly excerpts of Rich's "Toward a Self-Sustaining Agriculture." It will be hard to go far wrong with such friends providing practical visions of the near-future. Now, if Wilson Clark would just find the time and a small grant to finish his book on "Energy and Agriculture" we'd be armed with the ammunition with which to turn the USDA-agribusiness corporate complex around.

Highly recommended for 4-H'ers, land-grant college agri-engineering courses and an important addition to all RAIN readers' agriculture and energy libraries. (LJ)



Butterflies in My Stomach, **Ronald L. Taylor, 1975, $8.95 from:**

Woodbridge Press Publishing Co.
P.O. Box 6189
Santa Barbara, CA 93111

One of the fantasies I've been playing with recently is termite farming and slug ranching for the Pacific Northwest–both for people and animal food. Someone once told me that all the Northwest is good for is growing conifers, so I started to figure out how to develop a food system appropriate to this region. We have taken our eating habits with us as we've moved from one region of the planet to another just as much as we have taken our living patterns–building stuffy English Tudor hotboxes to live in in the Florida Keys and eating oranges and bananas in the subarctic rainforests. Along with Douglas and Hart's *Forest Farming*, Taylor's book–on eating insects–begins to open some new options for rethinking our eating habits and developing ones that are both appropriate to our own regions and for understanding and respecting the value of other forms of life. We generally abhor insects and think of them only as harmful pests. Taylor shows that thinking to be both wrong and inconsistent–insects are essential and valuable in plant pollination (bees) and nutrient cycling. Termites and other insects are extremely high protein and high quality food sources and, like cows, can harvest and convert food sources we can't eat ourselves (grass and pinetrees). And we consider ocean "insects" to be gourmet foods–but not their land cousins. What is the difference between lobster and landcrabs, oysters and slugs? Other societies don't have the phobias we do and relate more positively to tasty and nutritious food sources like termites, ants, grasshoppers and bee larvae. If all this makes your stomach/mind do weird things, take a look at this book–it's good food for thought. Protein charts, recipes, extensive bibliography on health and nutrition studies. (TB)

Good and Wild, **International Association for Education, Development and Distribution of Lesser Known Food Plants and Trees, quarterly, $7.50/yr. from:**

P.O. Box 599
Lynwood, CA 90262

A small California-based group with a strong sense of simple grassroots ways to obtain more food. Knowledgeable, direct and from the heart newsletter discusses the properties of different plants and how to grow them, acts as a network among people working in related areas. Seedbank and nurseries planned. (TB)

COMMUNICATIONS

Free form, experimental, public access, jazz, blues, Tibetan bells, Spanish dances, local community news and public affairs, voices of big people, little people, black, white, red, yellow, men, women, young and old; noncommercial, listener-sponsored, volunteer-operated, community-owned.

Community radio–creative, imaginative, unlikely, alternative, activist, literate, edible, fat-free, live and handmade.

National Federation of Community Broadcasters (NFCB)

1716 21st St., N.W.
Washington, DC 20009
202/232-0404

Tom Thomas, Terry Clifford

Representatives of community radio stations and groups incorporated as the NFCB in the summer of 1975. The Federation now represents some 30 of the more than 50 community-based radio broadcast operations in the U.S. and can put people in touch with already existing ones, or help you start one. Three groups have applications pending for similarly owned and operated television stations.

NFCB provides services to participating stations, such as a current series of "how-to" manuals on fundraising, technical operations, and program resources; legal policy work; and the development of a broad-based satellite interconnecting experiment with the Pacifica Foun-

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

We try to give access to:
* Solid *technical support* for evaluating new ideas and implementing them.
* *Ecological and philosophical perceptions* that can help create more satisfying options for living, working and playing.
* Other people, information and resources.
* Up-to-date information on current projects, groups, events and publications.

dation. The Federation is also participating in the noncommercial FM rulemaking currently before the Federal Communications Commission.

Associate memberships are available for $15; members receive the 8-page monthly *NFCB Newsletter*.

The Radio Program Service of the NFCB makes available tapes from Federation stations to other noncommercial stations (such as National Public Radio affiliates and college radio stations) at a cost of $5 per 1/2-hour tape. Contact: Bill Thomas, 705 N. Lincoln, Urbana, IL 61801, for more information on the service. (RE)

***Sex & Broadcasting: A Handbook on Starting a Radio Station for the Community*, by Lorenzo Milam, 3rd revised edition, 1975, 352 pages, $5 from:**

Dildo Press
2516 Maple
Dallas, TX 75201

A literary surprise. Not for radio crazies only. (RE)

National Alternative Radio Conference (NARC)

In June 1975, 150 community radio people from around the country held the first gathering of radio folk in three years in Madison, Wisconsin, and called it NARC. A year later they met again in Telluride, Colorado, under the sponsorship of the NFCB. This is the place to meet people actively involved in community radio. Stay tuned for NARC III. (RE)

Media Report to Women 1977 Index/Directory

3306 Ross Pl. NW
Washington, DC 20008
Martha Leslie Allen, ed.

Accepting listings for women's media groups and individual media women. All listings are free and limited to 15 words (not including name, address, phone). Deadline Nov. 1. Half-price $3 rate for those listed in *Index*. (RE)

***TAP Newsletter*, 4 pgs., $4 for 10 issues per year, from:**

TAP
Room 504
152 W. 42nd St.
New York, NY 10036

Remember blue boxes, phone-freaking and blind kids with perfect pitch whistles who learned how to call around the world for entertainment? Well, TAP is their newsletter full of helpful hints that makes the phone company cringe and electric and gas utilities wonder how many of their meters are stopped or running backwards. The technology runs from beginner to advanced, and many ideas are submitted by and for non-technical people. TAP is expanding into such frontier areas as pirate radio stations, lock picking, and getting your money's worth from a vending machine. For information purposes only, of course. Nikolas Tesla would have understood, but not Tom Edison. (LJ)

ENERGY SAVING

***Skylight Energy Performance* and *Systems Analysis for Skylight Energy Performance*, by Donald A. Moore, 1975, from:**

Center for Industrial and Institutional Development
McConnell Hall
University of New Hampshire
Durham, NH 03824

Skylights and roof windows are excellent ways to get daylighting and solar heating far inside of buildings. They save electricity for lighting, fuel for heating and make rooms feel good. Combined with insulating shutters, or Zomeworks' "Skylid," and letting the sun shine on water-filled containers, they make a simple and effective direct solar heating system. These two papers evaluate the savings and extra costs from use of skylights over a year's time and show that if properly designed they will save energy in almost every climate. The second report is a guide to both manual and computer calculations to enable engineers, code officials or people to analyze overall performance of skylights—including data necessary. (TB)

***Energy Conservation through Automobile Parking Management*, Newsletter Number 6 of the Energy Conservation Project, May 1976, free from:**

Environmental Law Institute
1346 Connecticut Ave., N.W.
Suite 620
Washington, DC 20036

The Energy Conservation Project is preparing a series of handbooks addressed to state and local officials, legislators and interested citizens setting out alternative legal strategies for conserving energy (available Spring 1977 from Ballinger Publishing Co.). This issue from one of these books, *Energy Conservation and Urban Transportation*, provides a useful exploration of legal ways to reverse the subsidy to automobile transportation and sprawling urban patterns that people have felt helpless trying to control. Valuable information on effectiveness and problems of existing projects that are trying various strategies of taxing, residential parking permits, parking bans, zoning, subsidy elimination, and redesign of parking facilities. (TB)

***Energy Costs of Using Columbia River Water for Irrigation*, by David F. Schuy, Jan. 1975 (E.M. 3891), available from:**

Cooperative Extension Service
Washington State University
Pullman, WA 99163

This study describes an old shell game on a grand scale. Large corporations in eastern Washington and Oregon request use of Columbia River water to irrigate the desert—"We need food, you know." Removal of the water from the river would decrease hydro-electric generation, requiring new and expensive nuclear power plants to make up the deficit. The irrigation would also require a lot of electricity itself to pump and distribute the water. And who pays the costs? Not those who benefit, but the electrical users of Washington, Idaho, Oregon, Montana and California—to the tune of $88 million per year. The game is called passing the buck. "The Columbia River as a Resource" by Hastay, Millard, et. al. (State of Washington Water Research Center Report No. 5A, Washington State University, Pullman, WA 99163, June 1971) discusses similar proposals for eastern Oregon. If we wouldn't pave our good fields, we wouldn't have to farm the desert. (TB)

Pleasant Undertaking

We're getting closer to a world where we can die in peace and be buried with dignity, affirming the miraculous dance of life giving way to life. Until the client got cold feet at the last minute, it looked like Philadelphia was going to get a cemetery designed exclusively for organic burials. Malcolm Wells, the architect of the dream and the builder of underground homes and offices, tells about it:

We make so many mistakes, most of us, even when we're trying hardest to do good, that simple, direct acts of gratitude toward life—acts like the return of our own bodies to the living land that produced them—seem, sometimes, like the only uncomplicated and selfless acts we can ever perform. And then we find that it's virtually impossible even to arrange that final gesture without tearing whole families apart at their blackest hours. The simple act of organic burial is virtually denied us by archaic customs, by perversions of religious teachings and by existing laws.

The anachronism of our still trying to cheat death through the use of poisons, powders and waterproof vaults seems almost unbelievable today, especially when we see noble deaths—deaths for the sake of life—occurring all around us. Each radish we crunch, every steak we eat, even the drop of blood whisked away from our arm by a mosquito, dies in the support of this miraculous, continuing, fantastically interdependent life we share—something we can never say about human deaths caught up in the undertaker-graveyard ritual. Admittedly, "undertaker" and "graveyard" are now "funeral director" and "cemetery," but the ritual goes unchanged, getting, if anything, steadily worse as more plastics and more phoniness creep into it.

But now, at last, the death-practices of the Seventies are showing faint but hopeful signs of becoming dying practices by 1980. The ecology movement and growing national revulsions against poisons and plastics are creating whole new industries and are changing some of the old ones. And funeral directors, those most conservative of conservatives, seeing greater social acceptance and undiminished profits ahead, are cautiously starting to test the wind.

In a Philadelphia suburb, for instance, a new branch building is being designed, to be used exclusively for organic funerals, by a big-name funeral home chain. All ceremonies at the new center (there will be no shortage of ceremonies) are slated to be positive, life-affirming, natural, reverent and, hopefully, on some occasions, even joyous. Instead of somber, muted organ music and hushed voices there'll be tributes to the miraculous life-death-life cycle that produced the life currently passing through death. Instead of the body lying ridiculously on display in a grotesque comedy of shined shoes and tufted satin—instead of its being poisoned, powdered and painted in a futile attempt to make death look like sleep, it will be wrapped in simple burial cloths and placed, for the services, on a slab just a few feet away from a great glass wall overlooking a wild landscape teeming with life. (The small mammals and birds on the grounds outside will be fed near the window to assure constant activity there; a life-spectacular that will positively astound those to whom it is unfamiliar.)

Instead of random, half-relevant Bible quotations, read by someone who in all likelihood hardly knew the deceased, he will be remembered through brief reminiscences by his friends, through biographical material, and through pictures.

Following the ceremonies at the memorial center, the guests will leave for the cemetery, where everything from the carrying of the wrapped body to the graveside ceremonies themselves will still further tend to emphasize the eternal miracle rather than the temporal tragedy.

And talk about organic gardens! The new cemetery will be a mossy woodland filled with the sounds of birds and other animals going about the business of life. Such a cemetery will never have to expand to make room for more and more concrete burial vaults; with well-spaced trees as the only grave markers, there will be almost no limit to the number of burials possible. Human compost, like other kinds, returns very quickly to life again. The new cemetery can quite literally become the transitional repository for an endless number of lives.

Potential in all this, of course, is the possibility—no, the certainty—that out of it, and out of the shared experiences of like-minded funeral directors all over the country, will come ever more meaningful burial practices to affirm the best parts of all religions rather than to deny them as is most emphatically the case today.

Life, to death, and back to life again: the miracle of the living world. It's been the theme of artists, poets and philosophers for centuries. Moved by its spell, Walt Whitman closed his greatest poem with this tribute to life's magic circle:

I bequeath myself to the dirt
to grow from the grass I love,
If you want me again
look for me under your bootsoles.
You will hardly know who I am or what
I mean,
but I shall be good health to you
nevertheless,
And filter and fiber your blood.
Failing to fetch me at first keep
encouraged,
Missing me one place search another,
I stop somewhere waiting for you.

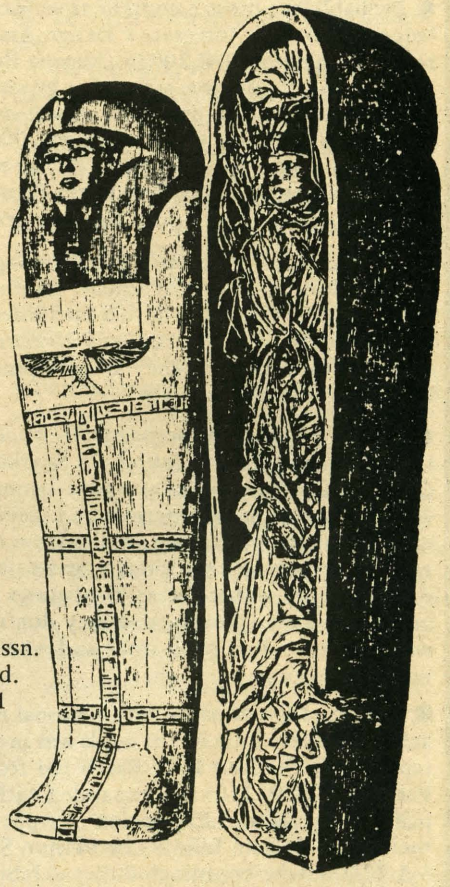
But, ironically enough, Walt Whitman waits for your today in a Camden, New Jersey, tomb. A granite-walled house he designed himself, tucked away there as conventionally as any, with embalming fluid, casket, burial vault, and all. So it will be a long, long time before his body begins to grow from the grass he loved. Too bad he couldn't have lived to see the beginning of the organic burial movement.

But maybe it was enough that poetry like his did so much to get it all started.

This report first appeared in the now-defunct *Environmental Quality Monthly* in August 1972. Malcolm Wells can be contacted at his architectural office: P.O. Box 183, Cherry Hill, NJ 08034, where he's dreaming up the next step in gentle architecture.

Simple Burial

It's becoming easier to avoid the expensive ministrations of undertakers altogether with simple burial and cremation, memorial societies and the like. The excellent Manual of Death Evaluation and Simple Burial *is now available in its seventh edition, $1.50 from the Celo Press, Burnsville, NC 28714. Death information, how to obtain simple, dignified and economical burial, how to locate the increasing number of memorial societies and how they work, and how the dead can help the living through body, organ and tissue donation.*



in Oregon contact:
Oregon Memorial Assn.
5255 S.W. Dosch Rd.
Portland, OR 97201

Biodegradable Coffins

We'll also pass on the happy news we saw in a recent Not Man Apart: *biodegradable coffins are now available, made of wood-like plastic that eventually decomposes into organic matter in the soil. Almost as simple as the real thing.*

GROWTH

***Yerba Buena*, Chester Hartman, 1974, $4.95 from:**
Glide Publications, 330 Ellis St.
San Francisco, CA 94102.
The costs of growth are clearly shown in the above studies—but not who profits. *Yerba Buena* gives an excellent picture of the politics of profit behind urban "development" . . . who promotes it, who profits, how finance and city councils are manipulated and controlled, and how the costs are forced onto the poorer members of the community. Factual and strongly documented. (TB)

"Santa Barbara—The Impacts of Growth," reprinted in the *Second Alternative Public Policy Reader*, Shearer and Webb, ed., $7.50 from:
Conference on Alternative State and Local Public Policy
Institute for Policy Studies
1901 Q Street, N.W.
Washington, DC 20009

A solid and straightforward discussion of the questions people have about growth of a community: Will growth controls raise my taxes? Will growth provide jobs? For whom? —with well-reasoned answers. Gives a good, simple view of the issues involved and some of the realities behind them. (TB)

***Urban Growth Management Systems*, American Society of Planning Officials, Planning Advisory Service Report Nos. 309, 310, 1976, $12 from:**

ASPO
1313 E. Sixtieth Street
Chicago, IL 60637

Analyzes an interesting range of thirteen operating growth management systems and surveys legal considerations in growth management, socio-economic and environmental impacts of such activities. Informative on the actual effects and community response to various measures. (TB)

Appropriate Technology

People are always asking us who's doing what in appropriate technologies, and if anyone is putting together a directory so they can contact other people. Well, this has been the summer of directories—a number have been or are being prepared:

● Probably the most comprehensive listing for the U.S. is being prepared by Integrative Design Associates, 1740 N St., N.W., Washington, DC 20036 (Eugene Eccli, Cecil Cook, Ann Becker), in conjunction with other groups around the country as part of an NSF grant. To appear in final form around the first of the year, it now contains 700-800 listings and is coded in twenty-five categories relating to the group's/person's activities. It will be free to the listed groups, with probably a small charge to others to cover printing costs.

● The Northeast Appropriate Technology Network, c/o Craig Decker, Box 134, Harvard Square, Cambridge, MA 02138, has prepared a list of people in that area interested/working in a.t. who participated in the Towards Tomorrow Fair in Massachusettes this summer. They are also planning a newsletter for a.t. people in the Northeast.

● *A Handbook on Appropriate Technology*, $7.50 from the Canadian Hunger Foundation, 75 Sparks Street, Ottawa, Canada, K1P 5A5, contains a good listing of groups and individuals involved in international a.t. developments, along with essays explaining a.t., case studies from many countries, a catalog of tools and equipment, and a useful bibliography. As with all these directories, the listings are incomplete and miss many active groups; also they don't tell you who is doing what and who does good work and who's just riding the wave—but no list can give you that!

● A shorter list of major international centers that have been active for some time in a.t. work was prepared by OECD, reprinted in the May 1976 RAIN ($1 from 2270 N.W. Irving, Portland, OR 97210) and expanded with the list of participants in the Habitat Exposition of Appropriate Technology in their flyer. William Ellis, 7410 Vernon Square Dr., Alexandria, VA 22306, who coordinated that exhibit at Habitat, is now coordinating the development of an international a.t. network, TRANET, based upon those groups and the participants in the activities at Habitat Forum.

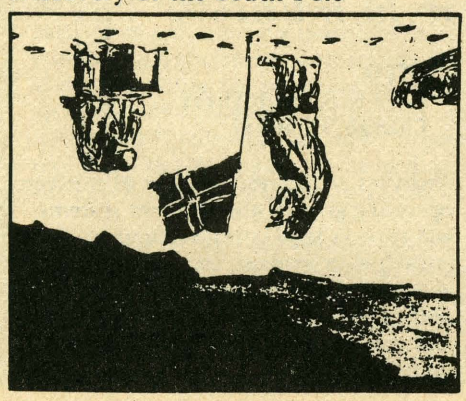
● In the preparation of the U.S. Agency for International Development's proposal for their appropriate technology center, voluminous surveys of a.t. organizations active in Africa and the Indian subcontinent (Attachment "I", prepared by ITDG) and Latin America (Attachment "J", prepared by VITA) have been compiled. These listings, again, have not been annotated or evaluated in regard to the kindandquality of work done and would at this point be of use only to people with special and specific interests in those areas. A small number of Xerox copies are available from Ted Owens, Director of Rural Development, U.S. AID, Department of State, Washington, DC 20523. (TB)

California Office of Appropriate Technology
P.O. Box 1677
Sacramento, CA 95808

Judy Michalowski, coordinator. Things are moving along at OAT. Current projects underway include designing a traveling energy van, putting together materials on the relationship between jobs and energy, training solar technicians, and the incorporation of a.t. ideas into the Capitol Area Plan (a design for the downtown Sacramento urban renewal area). They're also beginning a project to test the health problems of waterless toilets for urban and rural areas, as well as a study on the use of waste heat from state heating plants and buildings. A series of annotated bibliographies are available on a.t., solid waste management, sun-tempered greenhouses, landscaping for energy conservation, methane and more. Write for a complete publications list.

Meanwhile, a few blocks away, Sim VanderRyn, California State Architect (who is also director of OAT), is hard at work along with his staff and Living Systems of Winters, California, on an exciting design for a new state office building. The building is to be totally heated and cooled by passive (direct) systems—sun shading, natural lighting,and ventilation, the works. It's the largest such system we know about yet attempted. We'll keep you posted on its progress as it develops. (LdeM)

Discovery of the South Pole



***Van Loon's Geography*, Hendrick Willem van Loon, Simon and Schuster, 1932, out of print**

Found this when we went to a used bookstore with Wilson Clark last week (a trip in itself—we decided that Wilson has missed his calling!). A truly beautiful and basic book on the geography and history of our planet—one to read aloud in front of the fireplace. The pen and ink illustrations are gems that will blow your mind and tweak your perceptions of how things are. Check in the library or old bookstore and try to find one with a dust jacket—it folds out into a colorful map! We paid $4. Here's what he was saying in 1932: "We are all of us fellow passengers on the same planet and we are all of us equally responsible for the happiness and the well-being of the world in which we happen to live. (LdeM)

Update

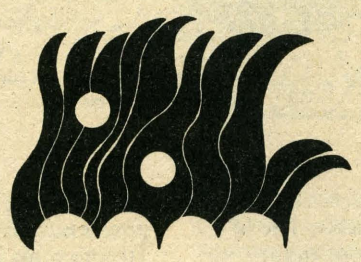
National Center for Appropriate Technology
P.O. Box 3838
Butte, MT 59701

If you were about to give up on the National Center for Appropriate Technology (NCAT) ever becoming a reality—or a reality you could live with—look again. A new (final?) proposal (dated Sept. 7, 1976) has just been submitted to the Community Services Administration, and it looks like it will be funded by the time you read this. Written by Harriet Barlow and Craig Decker, the proposal now incorporates many of the ideas many of us were hoping for—six regional planning meetings, a relatively small administrative staff (much of the work to be done by outside consultants, presumably people doing existing grassroots work), a *separate* technical staff, and the funding of existing projects to act as regional coordinators. The proposal itself is written in such a way that you can really learn something about a.t. by reading it! We're excited about it. Now, if the reality can just live up to our dreams. Much depends on the people who are part of it, so get a copy of the proposal and find a niche for yourself. Let's get appropriate technologies out to the people who need them.

Maine Times
41 Main St.
Topsham, ME 04086
207/729-0126
John Cole, ed.
Weekly, $12/yr. We've been reading the *Maine Times* for several months now and find it to be a delightful mix of environmental, entertainment and local news of what's happening in Maine. Even the display and classified ads are enjoyable—how many publications carry advertisements for wood stoves and sewerless toilets? In all, very well done. (RE)

APPROPRIATE TECH

A Handbook on Appropriate Technology, 1976, $7.50 from:
Canadian Hunger Foundation
75 Sparks St.
Ottawa, Ontario, Canada K1P 5A5
A good working document for people interested in a.t. Compiled in cooperation with the Brace Research Institute. Essays explaining a.t., case studies from many countries, a catalog of tools and equipment, bibliography, and a beginning international listing of groups and individuals involved in a.t. development. (TB)



Medical Self-Care: Access to Medical Tools, quarterly from:
P.O. Box 718
Inverness, CA 94937
$7/yr. At last! Someone is doing an access journal for self-help care. It's the area of a.t. we've been wanting to get into but lack the know-how to do in depth. Editor Tom Ferguson recently finished at Yale Medical School and just moved to the Bay Area to do community medicine. The scope of the magazine looks wide and exciting: how to take care of ourselves and our neighbors and family; first aid and long-term health needs; books, drugs, networking and how-to. Only one issue so far, but if the quality stays the same, it's a winner. (LdeM)

Overseas Volunteer Work for persons with a degree and experience in the areas of agriculture, engineering, health services, small business development, and other technical fields. Assignments are for two years on multinational teams in Asia, Africa and Latin America. Volunteers receive $80-$150 a month plus all expenses, including travel, cost of living and insurance. Interested? Send resume to:
Ed Allen
International Voluntary Services
1555 Connecticut Ave., N.W.
Washington, DC 20036
202/387-5533

Florian Winter breezed in one day last spring on a tour around the world looking at alternative energy organizations for the United Nations. We spent a very pleasant evening with him—one of those people with whom you feel at home the minute they walk in. When we get a copy of his report we'll let you know. In the meantime, here's a letter he wrote recently: Hi! Well, I'm in Bangkok now trying to figure out what they're doing down this way in line of alternatives. Problem is, it's cheaper to have a dozen Thais pedaling generators for 20 years than to buy a wind generator. . . .

In Australia, all sorts of alternatives underwent a painful abortion when the Whitland government was "fired" by the jackass governor general last year. The first government with an open attitude towards alternatives had to be sacked. As far as these kinds of things are concerned Australia is the prime example of how not to do it. Earlier this year people were busted because of participating in, in fact organizing, an alternative technology fair. The commonwealth police who were the judicial organ behind this even admitted doing this through a public release.

As you can see, RAIN could be a good lump of yeast in a dissolving brew. The people I would suggest contacting are an information exchange group—the only one doing anything really relevant in terms of grass roots innovation. They are a very loose and nonchalant bunch of young people

Environmental Resource Exchange Center (EREC)
400 La Trobe St.
Melbourne, Victoria, Australia

Also:
Low Impact Technology, Australia
34 Martin Street
South Melbourne, Victoria, Australia

Autonomous House Group
School of Architecture
Sidney University
Sidney, New South Wales, Australia

They have an open house every afternoon when people can come in and check out their version of alternatives. The house is in the middle of Sidney, solar heated, wind-cooled (breezes) with a methane generator—the whole lot. Lots of people drift through there.

There is also a kind of *Mother Earth News* called:
Earth Garden
P.O. Box 378
Epping, 2121, Australia
($2 per copy, see RAIN, Vol. II, No. 5)

Until I'm in the mood to write again, Good Luck and God bless you all,

Flo

Michael Shakespear on his pedaled lawnmower.

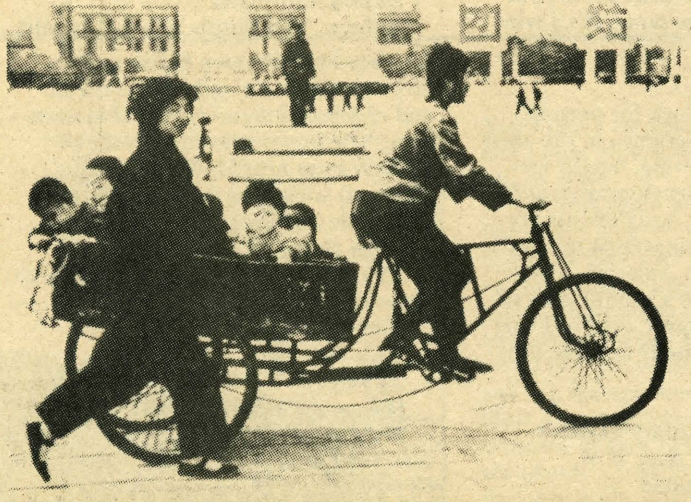
PEDAL

● The contrast between the bicycle and the motor car is a very good illustration of technology of human scale. The bicycle is a supreme example of ergonomics—the optimum adaptation of a machine to the human body, so that it uses this power efficiently. Hence the worldwide success of the bicycle and its derivations in meeting the real needs of people in both rich and poor countries, with a minimum demand for energy and raw materials or ill effect on the environment. The motor car, on the other hand, is a machine of inhuman scale as regards size, its weight, its power (from 100 to 1,000 times that of the driver himself) or its speed. It is for these reasons that not only is it a great consumer of fuel and raw materials, but it is a great polluter of the environment—by fumes, noise and also visually. The social costs are immense, though largely overlooked, not least the fact that vastly increased mobility has scattered families to such an extent that rarely are the three generations close enough for mutual support.

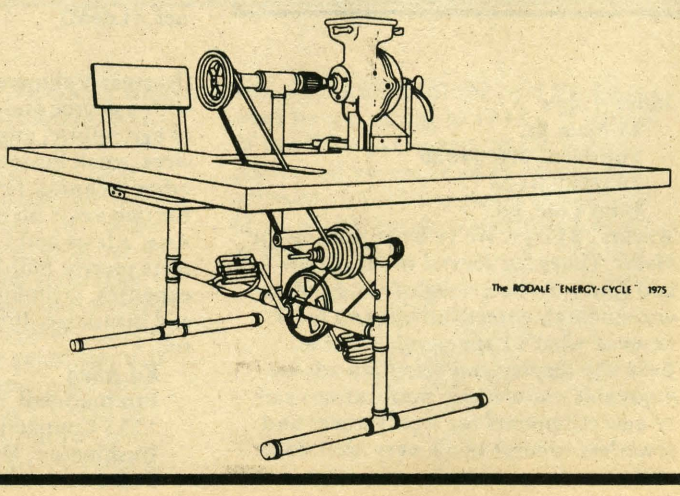
● In general, pedal drive can be expected to give a continuous power output of 75 watts or 1/10th H.P. per man, but up to 10 times this amount for short bursts. In consequence it can be considered as an alternative to any fractional horsepower motor drive for a machine or tool, e.g. spin drier, washing machine, lathe, bandsaw, fans (forge blower), small compressor or hydraulic pump.

Pedal power is of course only one manifestation of muscle power; it seems that muscle power, the most fundamental and indefinitely sustainable source of power—of essentially human scale—is unduly neglected in the present discussion of energy sources. Other animals—horses, donkeys, etc.—are also possible sources of power, as well as the more frequently-canvassed wind power and water power. All of these deserve widespread attention, particularly in the way of prototype design, production, testing and development. Not until the practical problems are faced and overcome can any proposal be taken seriously, but unfortunately suitable facilities for such work—people, facilities and money—tend to be in short supply.

Chinese bicycle transport using vintage equipment still provides adequate transportation service.



Energy-Cycle, developed by the research wing of Rodale Press, is adaptable for a variety of uses.

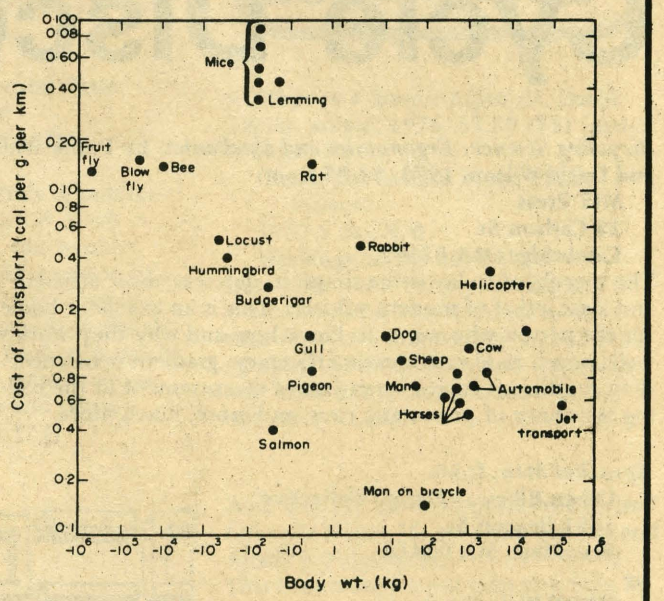


"Incidentally whilst talking about muscle power, its efficiency is interesting. If you assume that a man east 2,500 to 3,000 calories a day . . . this is equivalent to about an eighth of a ton of coal a year. If you take our earlier assumption of working 8 hours a day for 200 days a year at a tenth of a horsepower, it means that a man treated as an engine is about 10 to 15 percent efficient. It is really very good, it is almost as good as a petrol engine and costs far less . . . "

P. D. DUNN
Lectures on Socially Appropriate Technology

POWER

by S. S. Wilson, M.A., M.I.Mech.E.
Department of Engineering Science, Oxford University
Oxford, ENGLAND



Energy Efficiency of Different Means of Transport

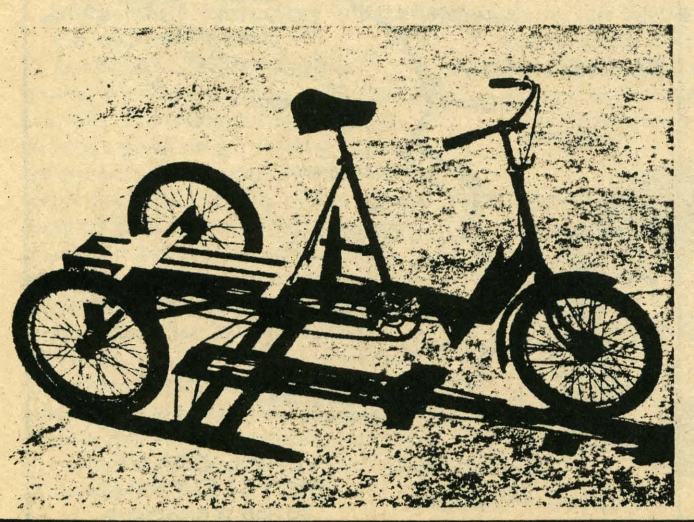
● Apart from the ubiquitous bicycle, still a growing field, pedal power can be applied to goods transport and to a variety of stationary power uses, most of which are applicable in the U.K. as well as in less developed countries. The OXTRIKE, below, is a basic tricycle chassis to take a variety of bodies for transport of goods or people. Prototype construction has been funded by OXFAM, and it is designed to be built from kits in any small workshop, e.g. school/community workshops. The innovations include sheet steel construction, three-speed gears, powerful foot brakes and a simple form of differential drive. Such a vehicle fitted with box van, hopper or flat truck body would be useful for OXFAM shops or for use with the OXFAM Wastesaver project, as an alternative to a 35 cwt van—the OXTRIKE payload is 3 cwt, which is more than the average load in the majority of city delivery vans.

● Other uses of pedal power actually demonstrated are for corn milling and for water pumping, in which pedalling can improve the output by a factor of three over manual effort. One use for the pedal pump is as a standby for a windpump during periods of insufficient wind.

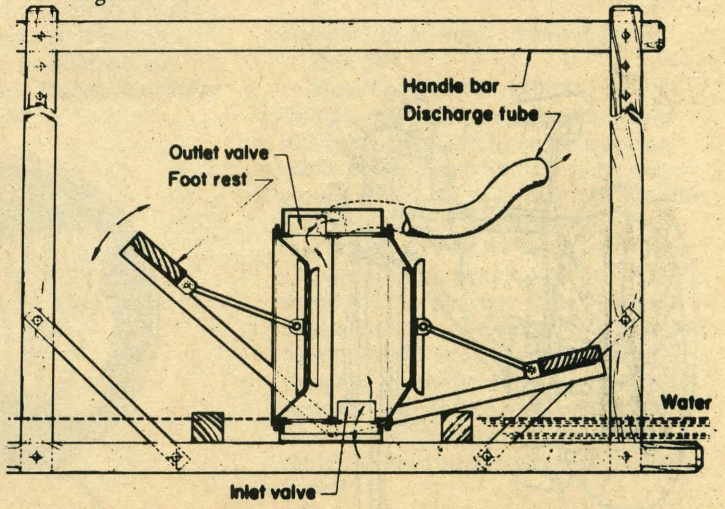
Among the plans awaiting the building of prototypes is a design for a two-man pedal-driven winch. One major use for such a winch is for cable ploughing and cultivation on the lines of the 'Snail,' as described in an earlier paper. For many purposes, including small plots and allotments, the pedal winch may be as effective as a motor-driven winch.

These excerpts are from "Technology of Human Scale" by S. S. Wilson. Wilson has been instrumental in recent development of improved people-powered vehicles. His more extensive essays in Lectures on Socially Appropriate Technology *(see RAIN, June 1976) and* Scientific American, *March 1973, explore both the social and technological aspects of improved bicycle transport.*

OXTRIKE chassis, designed for transport of goods or people.



Pedal-powered diaphragm water pump, developed by IRRI for irrigation use.

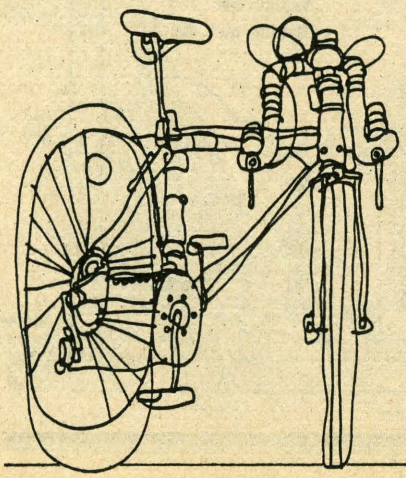


Cycle Discoveries

Bicycling Science: Ergonomics and Mechanics, by Frank Whitt and David Wilson, 1974, $4.95 from:
MIT Press
28 Carlton St.
Cambridge, MA 02142
The bicycle of today is the simplest, quietest, most efficient and least lethal of modern vehicles. This is an excellent book for the person who wants to know how and why they work so well: power required, muscle efficiency, gradient resistance, drag coefficient values, quantitative measurement of the rolling resistance of pneumatic tires, and more, much more.

Sprocket Man, from:
Urban Bikeway Design Collective
1791 Beacon St.
Brookline, MA 02416
or
UBDC-West Coast
P.O. Box 2983
Stanford, CA 94305
This is a very good, commonsense comic book on bike safety put together for the Stanford Dept. of Public Safety. A very nice use of the comic book medium 'cause it makes you read it from cover to cover and you even *learn* something. I'm not sure about its availability, but it ought to be reprinted if they're running short. A buck and a stamp should cover it.

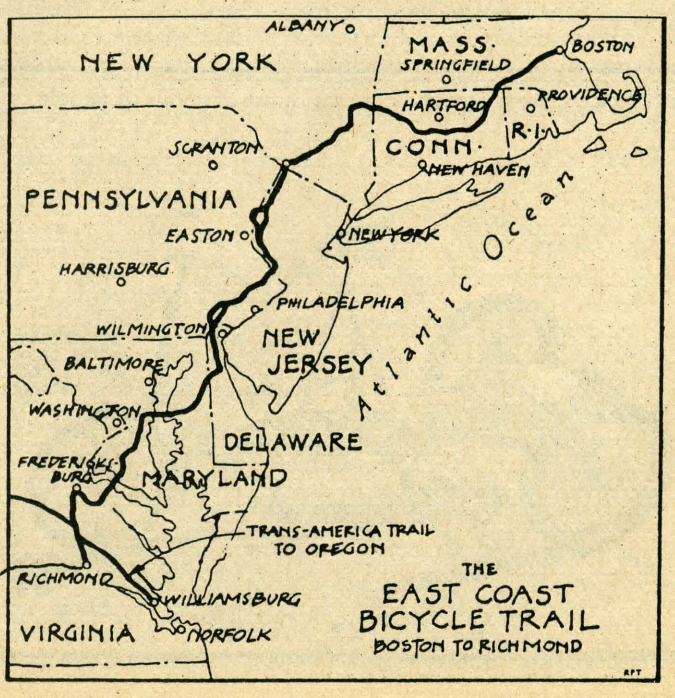
Philadelphia Bicycle Coalition
3410 Baring Street
Philadelphia, PA 19104
215/EV2-6693
A calendar, a bike-route map for Philadelphia (one in progress for the region), a campaign to get Bicentennial tourists to bike around the city, and a list of people willing to teach bicycle repair and maintenance. Also the Ben Franklin Brigade—a network of citizen groups in Philly federated with similar groups in other cities—is working towards a "park and pedal" transportation system. Cars, buses, boats and trains should be equipped to carry bikes; theft-proof parking devices should be supplied at public buildings, transit nodes and tourist sites, and bike lanes should be established on roads and bridges. Send a SASE for more information.



American Biking Atlas and Touring Guide, by Sue Browder, 1975, $5.95 from:
Workman Publishing Co.
231 E. 51st St.
New York, NY 10022
If you're ready to take off on your bike—short trip or long—this is your book. 150 different tours laid out, ranked as to difficulty and carefully mapped. Not good if you're only interested in one specific area, but there's a good ride or three in each state. And—neato!—the pages are perforated so you don't have to carry the whole thing in your pack.

How to Fix Your Bicycle, by Helen Garvy and T. White, 48 pp., 1972, $1 from:
Shire Press
P.O. Box 40426
San Francisco, CA 94110
I don't know much about fixing bikes myself, but I think I'll be able to do it with this book in hand. Clear, simple line drawings with point-by-point directions get you into the nuts and bolts of the problem. Small enough to fit into your pack too.

East Coast Bicycle Trail Guidebook, 1976, $4.95 from:
East Coast Bicycle Congress
5300 Akron St.
Philadelphia, PA 19124
The trail traverses the densely-populated corridor from Boston, Mass., to Richmond, Va. (where it joins the Trans-America Trail), yet it is a collection of quiet back roads, historic towns and even a ferry ride or two. They have really scoped out the most beautiful parts of the eight-state region, missing the worst of the megalopolis by many miles. The trail and the book were put together by the scores of cyclists and organizations who have formed the East Coast Bicycle Congress to develop and refine an exciting system of bike routes up and down the east coast. The Guidebook has a large index map and 21 detail maps, along with service listings and general information. (LdeM)



SHELTER

The Use of Earth Covered Buildings, 1976, National Science Foundation NSF/RA-76006, limited number of free copies available from:

RANN Document Center
National Science Foundation
1800 G St., N.W.
Washington, DC 20550

Proceedings of the July 1975 Fort Worth, Texas, conference on underground buildings. Most comprehensive and up-to-date source available on underground building. Down-to-earth information on legal, economic, insurance, structural, psychological, historical and energy considerations. Life cycle costs show underground building is increasingly viable as energy costs to operate buildings increase. Very comprehensive bibliography, list of people actively working on underground building, etc. (TB)

A Manual on Building Construction, Rev. Harold K. Dancy, 1948, £1 from:

IT Publications
9 King St.
London WC2 England

Originally a guide for constructing church missions in Africa, this manual contains a wealth of information on building from scratch—on-site brick-making, manufacturing doors and windows (from trees still on the hoof) and making roofing tiles. Details on a lot of building processes uncommon in the U.S.—grass roofs, mud roofs, mud domes, preparing paints and finishes, as well as design for tropical conditions, business and labor details. (TB)

Alternative Cements in India, Robin Spence, May 1975, and *Lime and Alternative Cements*, Oct. 1974, both from:

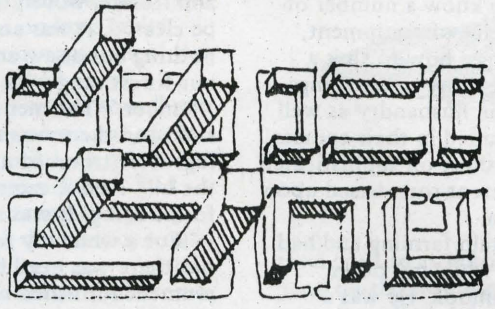
Intermediate Technology Publications
9 King Street
London WC2E 8HN England

Inquire for current prices and other publications. These reports from ITDG initiate a program for finding appropriate alternatives to expensive and often scarce Portland cement. Use of natural cements such as pozzolanas, lime and small-scale production of cement is investigated. Capital costs of small vertical kiln plants are less than large rotary kilns, they have better heat efficiency, provide more employment, and are more flexible to schedule and quality changes. More work needs to be done in this area, but these reports give an excellent coverage of present knowledge. (TB)

The Eco-Cabin: Plans for the Owner-Builder, 16 pp., plans, photos, drawings, 1976, $3.50 plus a 7-1/2"x10-1/2" self-addressed envelope from:

ECO-CABIN PLANS
Greenpeace Experimental Farm
RR 1, Denman Island
British Columbia, CANADA
VOR 1TO

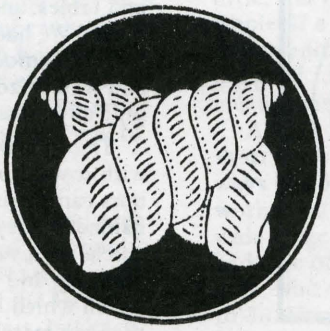
An excellent first in a series of publications on the results of G.E.F. work in appropriate technology, this booklet thoroughly covers the construction of a 120-sq. ft. icosahedron cabin costing less than $600, using recycled materials and requiring no power tools at possibly remote forest sites once major components (foundation, floor and struts) have been prefabricated. (LJ)



Design Guidelines for Creating Defensible Space, by Oscar Newman, 1975, $2.95 from:

U.S. Government Printing Office
Washington, DC 20402

Hearing of Newman's earlier work mostly made me shudder at the state of a society that had to design urban buildings to withstand armed assault. Newman deals with that because, sadly, it is real. But there's a lot more in this book than its excellent section on choosing locks and other security measures that *work*. It deals, actually, with *responsible* space—with basic neighborhood and building arrangements that permit and encourage people to take responsibility for private, semi-private and public spaces in and among buildings. Simple things like having entrances to people's homes along the street so it is supervised rather than an unclaimed, anything-goes wasteland. Things that make a big difference. (TB)



GOOD THINGS

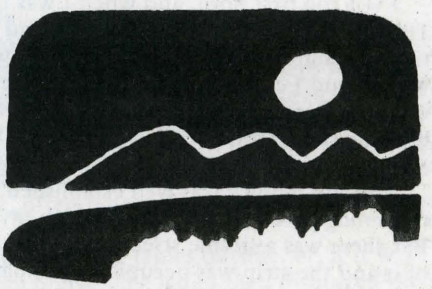
99 Ways to a Simple Lifestyle, David Taylor, editor, 1976, $5.50 ($11 institutions), from:

Center for Science in the Public Interest
1757 S St., N.W.
Washington, DC 20009

Here's the book I always meant to write. Lots and lots of things to do—each section is followed by a good bibliography. Nothing fancy and not much new here, but it's nice to see it all in one place. (LdeM)

And—hot off the CSPI press—the revised *Lifestyle Index 76*, by Anne Pierotti and Albert J. Fritsch, $2.

This little booklet will help you tally up your energy score—what you use in your life, from hairdryers to your share of the national defense budget. We've found it extremely useful in "living lightly" workshops. It helps to see where it all goes. And you might also want to use its companion, the *Simple Lifestyle Calendar 1977* (single copy $2.25). Each day has another idea.



doing it! Bi-monthly, $10/yr, from:

Box 303
Worthington, OH 43085

This fat (80 pp.) new magazine looks like a good one. Their emphasis is on urban alternatives. Some articles are on groups which are becoming old hat, like Briarpatch, New Games and the Institute for Local Self-Reliance (each time you say it more people find out about them), but lots of new things (for us) too—a community loft in NYC and the "grey rabbit" bus lines. Articles cover things in much more depth than we attempt to do, while access info is given. And they're requesting articles (brave souls), so send them stuff you want out. (LdeM)

This is a somewhat shortened version of a piece sent to Joel and Sherri Davidson of *Living in the Ozarks*. They didn't have room for it, so they sent it on to us. Dulcie Brown now lives at 2412 E. Thomas Street, Fresno, California 93702.

Pioneering Commun

by Grandma Brown

My parents were Americans from several branches of American pioneers and in their youth traveled the Oregon Trail with their parents, at different times, not knowing each other until afterward. They had the knowledge of homesteading and of mutual survival techniques. A man had to know a number of skills: the care of livestock, the maintenance of equipment, building of fences, houses and out-buildings, how to sink a well, when to plant, when to harvest, and many other things. He could well have passed college exams in husbandry as well as give the college a few pointers not included in their courses. Although many of them were somewhat short on sophisticated education, theirs was education of a different sort, based upon experiments of their ancestors in America.

My maternal grandfather chose mountain farming and had an up and down farm at Beaver, Oregon, while my other grandpa chose to live near the sea at Tillamook. He was a carpenter.

My young parents, during their first years of marriage, lived in the deep forest and peeled tan bark. Now this is the taking of bark from certain trees to be used for tanning, but without permanently injuring the trees. They kept two horses, 13 sheep, bees, pigs, a cow, and chickens.

I was the first born, and when I was three we traveled from Tillamook County to Lane County, and my father took a timber claim near Springfield. The trip was made via covered wagon, and I can remember how it rained just about all the way, the horses sometimes walking in water up to their knees, drawing the wagon over graveled roads. We would have to find a barn by nightfall to shelter the team or they would be sick.

The community was well established, but there was one remaining parcel of 137 acres, which my father filed claim to. But there was a sizable stream running along the roadside edge of it and the strip was occupied by a man named Putnam, as well as the rest of his acres along the side of ours. Upon this strip there was a maple grove and two springs, and Mr. Putnam was charging campers 25¢ a night to camp there. People were litterbugs in those days too, and the grove and the creek were full of pollution.

The whole acreage was one jungle of tall trees, underbrush and foliage, woven together with vines. Space for living had to be cleared. It was an insurmountable job for one man with nothing but a saw and some axes. But we weren't alone. Soon our forest rang with the sound of ax and saw and calls of "Timber." The men of the community made short work of it, and soon there was space for a road, a barn and a house. The logs were trimmed and sent to the government sawmill up on the hill. And it came back neatly sawed into lengths of lumber for building. It was stacked on the property and left to season.

For a while my father helped Mr. Donaldson on his place, but there was need for a man to work at the sawmill. The government furnished but one overseer at the mill, and the rest of the labor had to be voluntary. There were three government houses at the mill, and one was vacant, so we moved up there for a time. My father was doing his part for his community, the other two families for theirs.

Times when there was no work at the mill, Dad was doing things on his place. Having a great deal of skill and knowledge from his carpenter father, he began to erect a barn. Grandpa came by and said, "You don't have enough tools." So in no time Grandpa's set of complete carpenter tools arrived by freight. In those days a carpenter did everything necessary when building a house. So there were sets of saws, hammers of several weights, tools for building fireplaces, putting in window sash, installing locks, hanging doors and installing pipe. There were levels and planes and chisels and files and screw drivers. And countless other gadgets, all useful. They were made of the finest materials imported from Germany. (My people were not German; they were Irish.)

Grandpa and Dad finished the barn. On one side were the stables, in the center a place to house wagons and buggy. And on the other side bins, a tool room and a bunk room complete with bunks on the wall and a pot-bellied stove. It was large, that barn. In the top of the middle section was the place for storing hay, the hay mow.

A one-room house was built as temporary living space, and we moved down from the mountain. Dad made some chairs and tables, and Mr. Donaldson gave us the stove from the hop house. We had brought beds and some other articles with us from Tillamook. The spring was some distance from the house, and water had to be carried from it until Dad drove down a pipe and installed a hand pump.

The first winter on the homestead was a bad one. To begin with it was good because there was a barn warming and neighbors came bringing gifts. One brought a young black gelding named Barney, another a milch cow, another a pregnant sow, chickens, hives of bees, a heifer calf, seeds and sprouts for planting, and one barefoot little boy came clutching a brindle kitten which he presented to me. I also had a dog named Brian that my maternal grandfather had given me when we left. He

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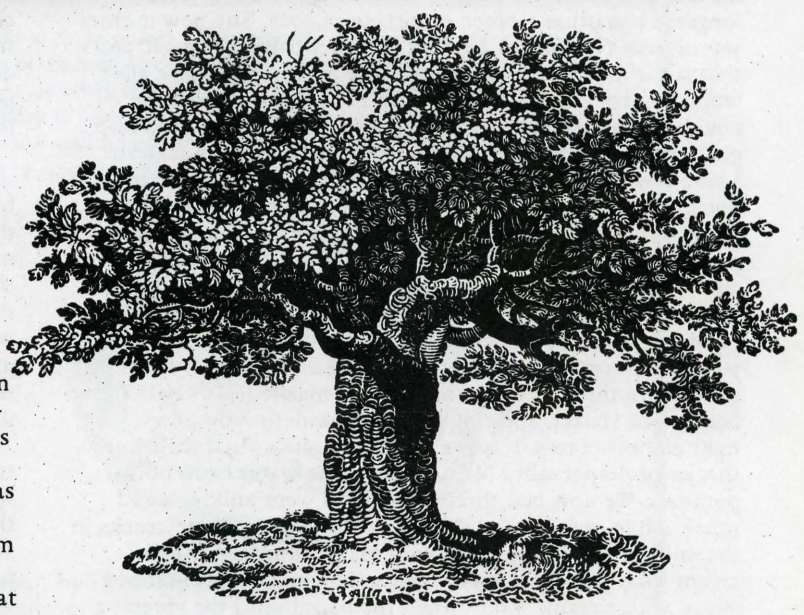


was a toy shepherd and my constant companion. The women brought all kinds of preserved foods for storage, the men donated bushels of potatoes and apples for the bins, and bacons and hams.

Young men brought their fiddles and guitars and there was dancing all night in the barn. Breakfast was on long tables laden with steaming plates of biscuits, bacon, eggs, jars of jam and milk and coffee and cider.

I remember a foggy day when I woke up with a sore throat and weakness. I cried. Outside I saw Barney come out of the barn and lie down on the ground. He gave one long moan, then lay still. He was dead. The other horses were sick too, Dad said. Through a mist I knew people were coming and going; someone sat at my bedside constantly. The doctor came out from town and said I had scarlet fever. We were quarantined and I was given calomel. It made my teeth fall out, and some of them never grew in again. I floated on a river away from everything, and the doctor said, "She won't live until morning." Mr. Donaldson had gone on an errand to town. He brought back a bottle of medicine called "Swamp Root." "Give her some of this," he said to my father. "Well, the doctor has given her up; we can do no less than try it," my father said. He somehow got the dose down me, and I awoke in the morning smiling. I was a skeleton, the skin peeling from my body, but I was better. I reached out my hand and said "Milk," and they gave me milk, fresh and warm from the cow. I lived because of the love that surrounded me. Outside, the world was breaking into spring and it was a time of resurrection. And early in that spring my brother was born. I was five years old.

The sow had six pigs, all of them females, and Dad took that to mean that his surplus for the community would be pork. Every member of the community raised a surplus to be distributed among the members. Mr. Donaldson had a large orchard with a variety of fruit, and he fattened cattle on the river bottom during the summer. Mr. Carney had sheep; he furnished mutton and wool. So it went.

The timber crew came and the clearing of the land began. Dad had been busy slashing out a lot of the underbrush, but it was necessary for skilled men to take out the big trees. The logs were floated down the river to sawmills downstream, but some of them Dad took up to the high sawmill, and they were cut into lumber for our house. In taking out timber the pioneers were always careful to leave some, so each homesteader had part of his place left in forest. This, too, is better thinned out, the dead and diseased trees used for fire wood. Stumps were blasted out with dynamite, but one must know how to handle that stuff.

There were about 25 families in our community, and each community was determined by the boundaries of its school district, although each ran into the other and exchange went on among people for miles around. The areas of the farms varied. Some had not claimed their 160 acres limit, but each tried to raise as much for his own family as he could and depend on the surpluses for the rest. Surplus and labor were always free. You did not insult a man by offering him money for his help.

Each two weeks the members of the community met at the school house. The first thing the men held a meeting to assess the progress of the community and to decide the order of work for the next two weeks. Every man would explain his own needs, and volunteers would be assigned to help him in whatever he had to do.

When problems arose there was voting, and usually all members abided by the will of the majority. There were no elected officers, but generally they sought the advice of Mr. Donaldson, who was the oldest and most experienced. When the men had decided exactly what was to be done in the next half month, the young men held their meeting and discussed vital issues of the day, often scheduling debates on vital issues affecting the state or nation.

Noon time lunch was on long tables outside, or, if it was rainy, inside the school house. The ladies then displayed their handiwork for all to admire. After that they discussed problems concerning housekeeping and children.

Evening brought entertainment. Young men played their instruments, someone sang, and children recited poems. During the early evening there was a time devoted entirely to young children, when any one of us could say anything we wanted, tell our problems, or just show off. Each member, big and little, was made to feel his importance to the community as a whole. If a decision went against a member, he was offered opportunities to perform some important service which was designed to restore his confidence. Each family was a unit revolving within a unit of the community.

As girls grew up, they were given opportunities to stay for short periods in homes other than their own to learn different ways of doing things than their mothers did. Or they often worked outdoors gardening or grooming animals. There was a wide range of choices, one of which was to help with birthing and care of infants and mothers. Our midwife was an Indian lady, who was always ready to tell others the necessary things to do. She usually only stayed until the baby was born and

Pioneering Communities, continued

mother and baby made comfortable, usually a day or a little longer. Then other women or girls took over. The new mother was always kept in bed 10 days after her baby was born, and that is the natural way to protect her health. Of course all women nursed their babies. But in the rare case when she couldn't nurse, a goat was brought and the baby thrived on goat's milk. I remember when my second brother was born I stood by and watched the midwife take care of the baby. She explained to me everything she was doing, washing the baby, oiling him with olive oil, taking care of the navel and putting on the band around his belly to hold the navel in place and finally handing the squalling little squirmer to his mother for sustenance.

Mama baked twice a week, bread made with the yeast in the jar she kept on the back of the range, cakes, pies, all kinds of goodies. In those days when a girl was married her mother gave her a yeast starter, and this would last indefinitely under the right circumstances. It was a tragedy if one's yeast died. Into this jar of perpetuality Mama poured the water from boiled potatoes. We now had three cows. Two were milking at all times, while one was dry. The milk was kept in stone crocks in the milk house. When it was sour Mama skimmed off the cream from the top and churned it. She had a barrel-shaped churn with a crank. You turned the barrel until the cream separated and one part became butter. You took this out and pressed it together, washed out the excess milk, and formed it with a mold. The other part in the churn was buttermilk. The clabber in the crocks became cottage cheese, that is some of it did. The rest, and the buttermilk we did not drink, was fed to the pigs. Cottage cheese is made by heating (not boiling) the sour milk until the clabber coagulates. Then you skim it out, tie in a clean rag, and hang up over night. Next day you mix the curds with sour cream and whatever seasonings you want. The whey is given to the piggies. Don't waste anything; that was the watchword. And nothing was wasted. All has its use. Animals like the tops and peels from vegetables, corn stocks, some fruit peels (apples). A good morning meal for growing pigs is scrub potatoes cooked over an outside fire and served warm in cold weather. You can add potato peelings and apple peelings to this stew, anything else that's handy and not poison.

Washing machines were not yet invented, nor refrigerators. Mama washed clothes by boiling on the range or outside in a copper boiler, then she scrubbed them out on a washboard. Most people kept food in a cellar. But meat had to be smoked or salted to be stored. But we had a sewing machine. That Singer is still in use in my sister's house.

We took Saturday baths in the same tubs Mama washed the clothes in. The hot water was taken from the reservoir on the side of the range. It was my job to fill that reservoir every day, carrying in buckets of water from the pump on the porch. I also carried in tons of wood from the woodshed off the back porch. (It was the cabin Dad built first.)

We had a telephone on which line there were some umpteen subscribers. It sometimes took you a while to get a call through because somebody was always on the line. Early one day in the spring there came an emergency call. One short ring always meant clear the line, an important call coming through. Then the ring. It was ours! Why? Don't ask me. But when Dad answered, there was a battery of receivers down and the call was: San Francisco is burning. There has been a terrible earthquake. Many homeless. What can you give? Wayside (place at the side of the road) what you can and teamsters will pick it up.

It was spring, nothing had been produced yet. All we had to spare were a few bushels of potatoes in the bin that had weathered the winter. Those Dad took to the roadside. After the disaster there were a great number of homeless children, and these were offered for adoption. You had to pledge to treat the child as your own, to send it to school and keep it in good health. You also had to be of good character. We did not put in for adopting, but some others did. Donaldsons had three boys, so did Carneys, and each opted for a girl. Donaldsons got a girl named Jenny, about 15, and Carneys a girl named May, aged about 8. The Carneys showered their girl with everything, and I loved to play with her because she had so many toys. May also had two fathers. Her real dad hadn't been killed, but he put her up for adoption. We all sort of envied a girl who had everything, even two papas.

You might think that people who worked as hard as they did wouldn't have time for fun. But, to the contrary, almost anything was cause for celebration. Weddings called for a chivauri (I am not sure I spell it right) and a dance and a giving of presents. Christmas was a big time, with parties at various houses, exchange of gifts, and a play given in the school house. This usually was children acting out the manger scene. And a big Christmas tree with everybody under 18 getting a big bag of goodies.

In all it was a community well organized and hardly ever a bad dispute. Nobody knew how much money you had; it wasn't important. It was something one forgot until the rare times when it might be needed. But if you didn't have it it wasn't a necessity. And I think that may be why those old days were so good.

SEWAGE

***Biological Control of Water Pollution*, Tourbier and Pierson, 1976, $20 from:**
University of Pennsylvania Press
3933 Walnut Street
Philadelphia, PA 19174

The use of natural systems for sewage treatment requires unique design for different situations. Although prohibitively priced, this collection of concise papers provides an extremely useful survey of international projects employing diverse biological treatments—reeds, tidal marshes, aquaculture, algae and forests to effectively treat sewage. (TB)

***Septic Tank Practices*, Peter Warshall, 1976, $2.50 from:**
P.O. Box 42,
Elm Road
Bolinas, CA 94924

Careful description of the benefits of staying with small-scale on-site sewage treatment rather than going to collection systems. Explains design, construction, care and maintenance of on-site systems. Demonstrates that on-site systems can be designed for almost *any* site if system is designed for site conditions rather than allowable site conditions being determined by design of standard manufactured systems. Excellent bibliography to more technical or detailed studies. (TB)

***Clean Water*, Leonard A. Stevens, 1974, $10 from:**
E. P. Dutton & Co.
201 Park Ave., So.
New York, NY 10003

A history and survey of numerous interesting programs of applying sewage to farm and forest land. Covers projects designed for water recovery, agricultural production, sewage disposal and economics. Explores effectiveness and safety of various processes, but doesn't deal with the problems of heavy metals in sewage of cities that haven't yet instituted recovery systems to keep such valuable and dangerous materials out of the sewage. An appendix gives location of land treatment systems worth visiting. (TB)

RECYCLING

Calling all California Recyclers!
Hal Conklin
Community Environmental Council
109 E. De La Guerra
Santa Barbara, CA 93101
805/962-2210
Come share ideas and help set up a recycling information network at the Second California Recycling Conference —November 4-6 at the Miramar Hotel in Santa Barbara. For more information, contact above. (LdeM)

***Resource Recovery and Recycling Handbook of Industrial Wastes*, Marshall Sittig, 1975, 425 pp., $36 from:**
Noyes Data Corporation
Mill Road at Grand Ave.
Park Ridge, NJ 07656

Technical details of different recovery processes, laying out how to recover useful and valuable products from over 130 industrial wastes in categories ranging from metals to food to heat. Contains sources for various patented processes available as well as general discussion of various recovery process options, product options and uses, etc. This expensive resource is not for the browser but is a must for the serious recycler and of particular value to communities for demonstrating the viability of alternatives to pollution by industrial waste products. (LdeM)

***Recycling in Maine*, edited by William Ginn, 16 pp., single copies free from:**
Division of Solid Waste Management
Dept. of Environmental Protection
State of Maine
Augusta, ME 04333
Very well done; useful as a model for how to get the recycling message across clearly and completely. Includes access info to recycling equip. manufacturers, materials markets, relevant organizations and publications. Excellent graphics. (Courtesy Virginia Hutton, Bucks County Audubon Society, New Hope, PA) (LdeM)

***All's Well on the Oregon Trail*, single copies free from:**
Environmental Action Foundation
The Dupont Circle Building
Suite 724
Washington, DC 20036
A short and sweet refutation of an Alcoa pamphlet that misused data to try to show that the Bottle Bill wasn't working. Bulk prices are available: 100 for $5, 500 for $20, 1000 for $35.

What follows is a small piece of a diary by a six-year-old orphan living in an Oregon logging camp at the turn of the century. Opal was obviously a remarkable child—her diary is pure poetry and a delight to read. I'm sure the book will be out in paperback within a year, but I'm not sure you'll want to wait. (LdeM)

***Opal*, by Opal Whiteley, arranged and adapted by Jane Boulton, 1976, $6.95 from:**
Macmillan Publishing Co.
866 Third Ave.
New York, NY 10022

Today the grandpa dug potatoes in the field.
I followed along after.
I picked them up and piled them in piles.
Some of them were very plump.
And all the time I was picking up potatoes
I did have conversations with them.
To some potatoes I did tell about
my hospital in the near woods
and all the little folk in it
and how much prayers and songs
and mentholatum helps them to have well feels.

To other potatoes I did talk about my friends—
how the crow, Lars Porsena,
does have a fondness for collecting things,
how Aphrodite, the mother pig, has a fondness
for chocolate creams,
how my dear pig, Peter Paul Rubens, wears a
little bell coming to my cathedral service.

Potatoes are very interesting folks.
I think they must see a lot
of what is going on in the earth.
They have so many eyes.
Too, I did have thinks
of all their growing days
there in the ground,
and all the things they did hear.

And after, I did count the eyes
that every potato did have,
and their numbers were in blessings.

I have thinks these potatoes growing here
did have knowings of star songs.
I have kept watch in the field at night
and I have seen the stars
look kindness down upon them.
And I have walked between the rows of potatoes
and I have watched
the star gleams on their leaves.

ENERGY

SOLAR

I've Got a Question about Solar Energy, 16 pp., May 1976, available free from:
ERDA
Office of Public Affairs
Washington, DC 20545
Everyone who has ever written RAIN about solar energy ought to write ERDA for a copy of this pamphlet. In a RAIN-style info access format, the 11 most-asked solar questions are answered and addresses given for further queries. Highly recommended. (Suggested by Bill Rice, ERDA) (LJ)

Solar Heating of Buildings and Domestic Hot Water, by E. J. Beck and R. L. Field, Technical Report R-835, 80 pp., April 1976, free from:
Civil Engineering Laboratory,
Code L80
Naval Construction Battalion Center
Port Hueneme, CA 93043
Much valuable material on a great variety of approaches to solar heating is clearly presented in brief yet effective descriptions and 15 pages of excellent drawings and sketches. Much attention is given to cost and energy savings calculations, and the authors include many charts and worksheets that the solar A/E may fill out, for a proposed solar building, in order to arrive at an overall cost estimate. Also contains a list of solar collector manufacturers and an excellent bibliography. (LJ)

Washington State Solar Home Survey, for inclusion, contact:
Bill Kingrey, Solar Survey
Washington State Energy Office
1000 So. Cherry St.
Olympia, WA 98504
206/753-0358
The Energy Office is conducting a survey of solar houses and solar-assisted houses with either passive or active systems in the state. Please contact Bill if you know of such a house. (LJ)

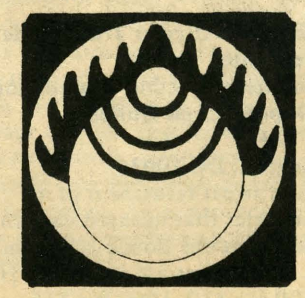
The Solar Home Book, by Bruce Anderson, 304 pp., $7.50 from:
Cheshire Books
Church Hill
Harrisville, NH 03450
Buy this book, the best amid a now overwhelming flood of often jargony or plain redundant solar texts, if (1) you're an architect-engineer who has begun to rediscover the "more BTU per buck" potential of designing with the climate and using direct (i.e. passive) solar techniques and you need more info; (2) you're about to build or have an architect design your solar home, as it will enable you to understand what you should include to "build-it-yourself and to talk knowledgeably with your architect; or (3) you're simply interested in solar energy and want enjoyably to find out more. The personal, caring touch shines through as Bruce and editor Michael Riordan have provided options for those not now interested in large projects such as building a new solar home . . . they've included a special "do-it-yourself" section on small but very cost- and energy-effective home projects such as solar water heaters and greenhouses. This excellent work by our friends at Total Environmental Action means we'll have to update our RAIN solar bibliographies again, but if we all keep this up we will definitely have a solar-based society before the year 2000, which GE, Westinghouse and TRW reported unlikely in 1974 studies for NSF . . . studies on which ERDA's continuing under-funding of solar, wind and bioconversion energy is based. But, then, they are major suppliers of nuclear power plants and equipment and have too much invested in the atom to be unbiased and fair about things solar. (LJ)

Passive Solar Water Heater, by Horace McCracken, 18 pp., May 1976, $6 postpaid from:
Horace McCracken
Rt. 1, Box 417
Alpine, CA 92000
Similar to Steve Baer's (ZOMEWORKS) "Breadbox" solar water heater, except that the insulated box has much larger tanks and the sides do not open at sunrise and close at sunset. This and the "Breadbox" plans (p. 19, May 1976 RAIN) are must items for direct solar hot water fans. If Horace designs anything else, we'll let you know. (LJ)

'76 ISES-SESCI Conference Proceedings, including 350 papers from August 15-20, 1976, Winnipeg, Canada, joint meeting of the International Solar Energy Society and the Solar Energy Society of Canada, Inc., $7.25 per volume (members), $8.25/vol. (non-members), full 10-volume set for $57.50 (members), $67.50 (non-members) from:
'76 Conference Proceedings
American Section—ISES
300 State Rd. 401
Cape Canaveral, FL 32920
Volumes are: (1) international and U.S. programs, solar flux; (2) solar collectors; (3) solar heating and cooling; (4) solar systems, simulation, design; (5) solar thermal and ocean thermal energy conversion; (6) photovoltaics and materials; (7) agriculture, biomass, wind, new developments; (8) storage, water heaters, data communication education; (9) socio-economics and cultural; and (10) business, commercial, poster section, miscellaneous. If you're serious about solar energy, ask for info on how to become an ISES member. (LJ)

Water Heater Reinsulation Kit, contact:
Johns-Manville
Greenwood Plaza
Drawer 17L
Denver, CO 80217
A simple, inexpensive and easy-to-use kit is available to reduce domestic water heater heat loss. Especially important if your water is partially solar heated, this is hundreds of dollars cheaper than buying one of the new water heaters specifically designed for solar HW use. A good idea whose time has come. Are there other similar kits available? (LJ)

Steam Engines for Solar Power Plants, write:
Spilling Energieanlagen
CH-5610
Wohlen-Schweiz
Switzerland
10-150 KW, 1200-1500 RPM or 100-200 KW, 900-1000 RPM "Steam Motors" are available in turnkey installations. (LJ)



Dear RAIN,

The Los Alamos Scientific Laboratory (LASL) has started on a fairly comprehensive program of research and development into passive solar heating systems. This activity is sponsored by ERDA. We will be monitoring the performance of several solar-heated buildings of the passive type and also of some passive solar-heated test cell units which we have built here at Los Alamos. We will also attempt to validate our computer models of systems against the results taken from these various observations. We will then use the computer simulations to determine the relative importance of various design factors on the performance of the system in different climates throughout the United States. There is tremendous interest in our program and I am besieged by individuals who would like to have us monitor their passive systems. It is great to see that this approach to solar heating is beginning to take off.

I am tremendously enthusiastic about the prospects for these passive heating concepts. The intriguing thing about these systems is not only that they are architecturally more compatible with normal building practices and aesthetically more pleasing, or that they should be lower in cost than active systems, but that they apparently work so well. Not only do they work well, but they appear to work relatively well in crummy climates with a great amount of diffuse solar energy where active systems can hardly perform effectively. That is because a passive system is always working. The passive system collects every bit of energy, direct or diffuse, that comes through the glazing. An active system has a threshold and does not begin to work until a certain temperature is achieved. This largely compensates for the fact that energy losses in the passive system are undoubtedly greater than they are in an active system. I also feel that with the design practices we will eventually find that passive solar heating systems can be made perhaps even more comfortable for the occupants of the building than active systems.

Sincerely yours,
J. Douglas Balcomb

Mail Stop 571
Los Alamos Scientific Lab
Los Alamos, NM 87545

***Solar Guide & Calculator*, by Edward Mazria and David Winitzky, 1976, 11 pp., $3 from:**

Center for Environmental Research
School of Architecture
University of Oregon
Eugene, OR 97403

Graphically explains where and how the sun works in relation to a building and site, and provides the user with a simplified method of calculating sun angles and the available heat energy from the sun on vertical and horizontal surfaces. Ask to be notified when the complete direct-solar workbook is available.

The following companies supply solar hot water storage tanks: (LJ)

Heliotrope General
3731 Kenora Drive
Spring Valley, CA 92077
714/460-3930

Rheem Mfg. Co.
Water Heater Div.
7600 South Kedzie Ave.
Chicago, IL 60652

Wood Industrial Products Co.
100 Washington St.
Conshohocken, PA 19428
215/828-0800

Solar Safety Shower Valve, write:

"Hot-Stop" Valves
Delta Faucet Co.
Greenburg, IN 47240

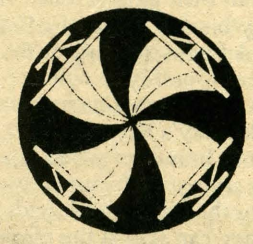
Instead of a mixing valve or tempering tank to prevent the scalding of solar shower users, this valve turns on the cold water first and then adds more and more hot water until a set limit is reached. The temperature limit can only be overridden by depressing the Hot-Stop Button, which pops up again when the water is turned off, ready for the next bather. (LJ)

WIND

***Catch the Wind: A Book of Windmills and Windpower*, by Landt Dennis, 114 pp., 1976, $7.95 from:**

Four Wind Press
Scholastic Magazines, Inc.
50 W. 44th St.
New York, NY 10036

An excellent intro to wind energy for both adults and children, covering how the wind gets all that kinetic energy, the early history of windmills, windpower in the U.S., the rest of the world and prospects for its adoption as a major power source. Footnotes, appendix of research, manufacturing and marketing companies' addresses, bibliography and index. For elementary, high school libraries or gift-giving. (LJ)



***Swedish Wind Power Potential Report*, August 1976, for availability and price, write:**

SIP
Swedish-International Press Bureau
Skeppargatan 37
S-114 52
Stockholm, Sweden

Windpower could account for at least 20%, 30 terawatt-hours out of an estimated 150 TWH, of Sweden's total electricity production by 1990, according to a report just published by the Swedish Meterological and Hydrological Institute. Sweden's long coastline (like the U.S. Atlantic and Pacific seaboards) makes her well placed to utilize wind energy, the report adds. Tell SIP they reported this on pg. 3 of their Aug. 18, 1976, news releases. (LJ)

AWEA Wind Energy Conference & Exposition, Oct. 21-24, 1976, $30 for all four days, $10 for one day, $5 for one workshop. For info and registration, write:

Amer. Wind Energy Assoc.
'76 Conference
North Wind Power Co.
Box 315
Warren, VT 05674
802/496-2955

Workshops on siting, aerodynamics, financing, home-building; participants include Windworks, Ameralt, Helion, Zephyr, Enertech, Natural Power, Kedco, Windpower Digest; speakers include Divone (ERDA), Savino (NASA), Heronemus (U. Mass), Eldridge (MITRE), Meyer (WINDWORKS), and Jack Park of Helion will construct, from scratch, a working KEDCO wind generator of his own design. This looks so good Lee Johnson of RAIN/ECOTOPE GROUP is going to try to attend. See you there! (LJ)

WOOD ENERGY

"RAINpaper No. 1—WOODSTOVES," by Bill Day, 6 pp., Sept. 1976, $1 postpaid from:

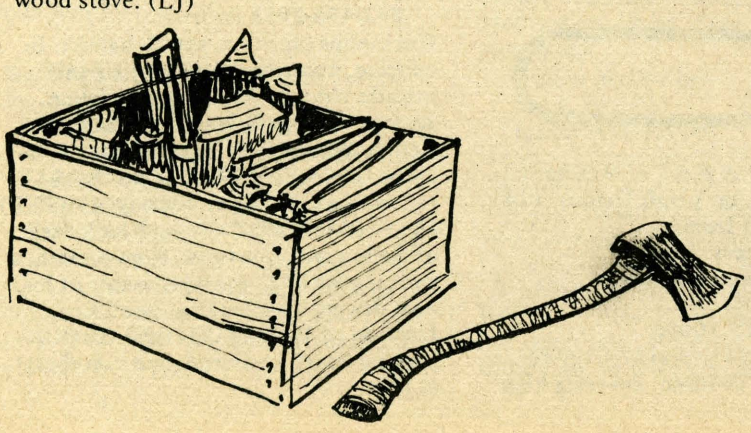
RAINpaper No. 1—WOODSTOVES
RAIN: Journal of Appropriate Technology
2270 N.W. Irving Street
Portland, OR 97210

First time I've ever done this . . . write a typical (?) RAIN info access entry for one of our own publications! Anyway, the story on this is that the Federal Energy Administration's "FEA Energy Reporter" monthly newsletter for August '76 ran a complimentary blurb about Bill Day's RAIN articles evaluating various brands of wood heating and cooking stoves. Unfortunately, they hadn't bothered to check with us—I *know* they can afford the phone call—to see if those back issues were still in print. They aren't and so Anne, Bill and I had to rush around getting this compilation of reprints, letters from RAIN readers, and latest news on the woodstove front together to fill the pile of orders. It's worth a buck, we think (he says modestly). (LJ)

Wood Stove Class, conducted by Bill Day, October 14, 1976, Portland Oregon, 7:30, $2 (OMSI members), $3 (non-members), pre-registration required:

Mary Lawrence
The Energy Center
Oregon Museum of Science & Industry
4015 S.W. Canyon Rd.
Portland, OR 97221
503/248-5920

Following up on Bill's previous successful wood stove teaching exhibit and his RAIN articles evaluating various makes of wood heating and cooking stoves (now available as RAINpaper No. 1—see publications list on inside of back cover), this will be a class on how to select, operate and maintain the home wood stove. (LJ)



You Can't Switch Horsepower in the Middle of the Stream

The importance of the choices we must now make about our future energy sources has come clearly into focus in two recent reports by Amory Lovins, author of *Non-Nuclear Futures* and *World Energy Strategies*. Lovins has completed studies for a number of countries, including Japan, England, Sweden, Canada and the United States, outlining their individual potentials for conservation, wind and solar power, organic liquid fuels and other non-depleting energy sources. In each case he has demonstrated, as Brent Sorensen did earlier for Denmark (*Science*, July 25, 1975), that by tailoring the mix of energy sources to the specific situation, each country can develop a future that is totally free of fossil fuel and nuclear energy. Lovins points out that only about 5% of energy uses in industrialized countries requires expensive electricity. Other needs can be met with low temperature solar, liqwood (organic liquid fuels), wind and hydro. Such presently available techniques of proven safety are shown to cost significantly less than fossil or nuclear futures.

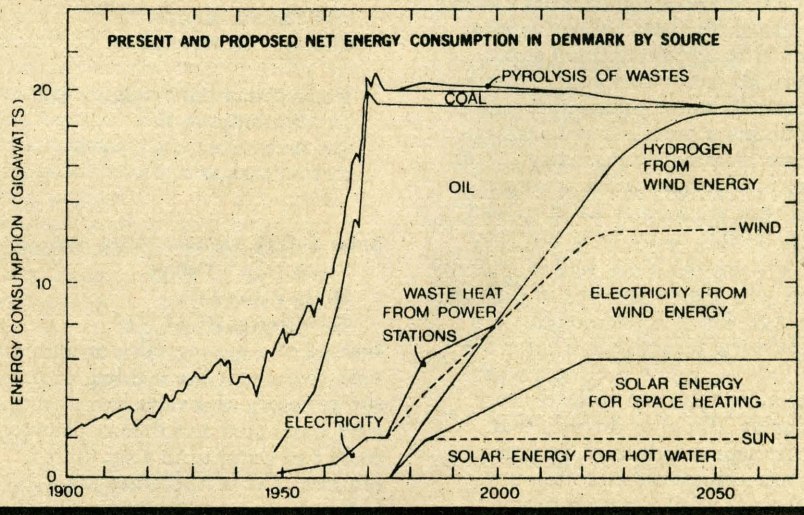
Most importantly, Lovins' studies demonstrate that such viable soft technology options and nuclear are mutually exclusive—once we commit ourselves to one it becomes virtually impossible to make a transition to the other if our initial choice proves wrong. Lovins' analyses are essential readings for the debate on our energy futures: (TB)

"Exploring Energy-Efficient Futures for Canada," *Conserver Society Notes*, May-June, 1976, free from:

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

"Energy Strategy: The Road Not Taken Taken", *Foreign Affairs*, October 1975, $10/yr. from:

Council on Foreign Relations, Inc.
58 East 68th St.
New York, NY 10021



***The Physical Energy Potential of Wood*, by Helmuth Resch, 5 pp., 1974, free from:**

Forest Research Lab
Oregon State University
Corvallis, OR 97331

A good companion to Vermont's "Wood as a Source of Energy" report (see p. 17 of Jan. 1976 RAIN), this also discusses the use of wood as a fuel. The amounts and types of residue available and the BTU/ton and per cu. ft. heating characteristics of various woods are explained. OSU also publishes *Forestry Update*, School of Forestry, OSU, Corvallis, OR 97331, if you want on that mailing list. If you're into wood, you'll find it useful and interesting. (LJ)

METHANE

***Capturing the Sun Through Bioconversion*, the Conference Proceedings, 865 pp., March 10-12, 1976, Washington, DC, are $18.00 from:**

The Washington Center
1717 Massachusetts Ave., N.W.
Washington, DC 20036

Methane is part of a larger field of activity called Bioconversion. The energy available and waste utilization possibilities are covered in numerous "state-of-the-art" reports on: (1) urban, industry, agricultural and forestry waste biomass sources; (2) land, fresh-water and ocean farming of energy crops, such as wood and kelp; (3) processes producing gaseous, liquid and solid fuels and their further products, such as fertilizer, feed and feedstocks; (4) technology assessment; (5) economic and social impacts and (6) environmental impacts. Displays the scope of bioconversion better than any other single source. Ask your library to buy it. (LJ)

***Energy, Agriculture and Waste Management: Proceedings of the 1975 Cornell Agricultural Waste Management Conference*, William Jewell, ed., 540 pp., $22.50 from:**

Ann Arbor Science
Box 1425
Ann Arbor, MI 48106

Jewell has collected some of the best and most up-to-date articles on waste management and its effects on energy use in agriculture. Techniques, economics, alternatives and limitations are presented throughout this invaluable collection.

Palos Verdes Landfill Methane Recovery, for info write:

Fred Rice
Reserve Synthetic Fuels
1602 Monrovia Avenue
Newport Beach, CA 92663

The collection of methane from urban landfills is commercially feasible. Although it is almost impossible to recover any nutrients from a landfill, the earth cover acts as a digester lid which can be pierced to remove methane.

"Anaerobic Waste Treatment Fundamentals," Perry McCarty, in *Public Works*, Vol. 95, Nos. 9-12, 1964 (check your library).

This four-part article discusses: (1) the advantages and disadvantages, conventional practices, and the current understanding of the chemistry and microbiology; (2) environmental requirements and control methods; (3) control of toxic materials; (4) process design. Well done by an expert in this field.

***Methane Digesters for Fuel Gas and Fertilizer*, by L. John Fry and Richard Merrill, Newsletter No. 3, 1973, $3 from:**

New Alchemy Institute-West
Box 376
Pescadero, CA 94060

This is the most comprehensive and available introductory publication on the subject of methane. The background information is presented in understandable laymen's language and while some of the calculations are off, it clearly describes methane generation and presents some small scale ideas and designs that can be built to explore the process.

***Process Feasibility Study: The Anaerobic Digestion of Dairy Cow Manure at the State Reformatory Honor Farm, Monroe, Washington*, Ecotope Group, 1975, $8 from:**

Ecotope Group
747-16th Ave. E.
Seattle, WA 98112

The specific application to an existing manure maintenance system is thoroughly investigated. A review of popular and state-of-the-art literature indicated the benefits of: (1) high rate mixing through gas recirculation; (2) heat conservation through insulation and influent/effluent heat exchanger; and (3) use of easily available and relatively inexpensive manure storage tanks which are sealed to form digesters. The economics of fertilizer enhancement are evaluated.

Methane R&D and Digester Tanks

John H. Brinker, President
A. O. Smith—Harvestore Products, Inc.
550 W. Algonquin Rd.
Arlington, Heights, IL 60006

ECOTOPE GROUP used two "*25-15*" (25 ft. diameter by 15 ft. high) sections of this company's "*Slurrystore*" tanks with silo roofs as digesters at Monroe, Washington, and got on-site help from a Harvestore construction supervisor and a field engineer. Harvestore has done 4 years of methane research and development. Mr. Brinker will personally route your query to appropriate people in marketing or R&D. (LJ)

"Turnkey" Methane Systems

Gene Dale, President
Agriculture Energy Corp.
704 W. Ludington Ave.
Ludington, MI 49431

This company has completed two farm methane systems, a 250-cow feedlot plant near Ludington and a 150-dairy cow plant near Rice Lake, Wisconsin. Both are totally automatic, with hydraulically operated pumps and motors to end the spark danger of electrically powered equipment. They offer complete "turnkey" systems as well as design and engineering consulting. (LJ)

"Byron McDonald's Methane Digester" in April 1976 *Popular Science*, or write:

Byron A. McDonald
R.D. 2, Box 49
Vergennes, VT 05491

Byron is operating a 2000-gallon digester which is 1/15th the size of a proposed full-scale dairy operation.

EPA Methane Digester State-of-the-Art Report

Tom Abeles
OASIS 2000
Box 1, Admin. Bldg.
University Drive
Rice Lake, WI 54868

Conducting a $100,000 study of digester state-of-the-art, including: design for safety, standardizing digester operations, effluent use for fertilizer/greenhouses/refeeding, electrical output, methane gas utilization, use of other rural wastes as digester input. The first quarterly report will be available after Nov. 1, 1976. Write to be put on the mailing list. (LJ)

Montfort Feed Lot Methane Plant, for info write:

Bio-Gas of Colorado, Inc.
5620 Kendall Ct., Unit G
Arvada, CO 80002

Hamilton-Standard is doing a demonstration digestion system at this huge cattle feedlot in Colorado. A digestion system capable of accepting large amounts of cattle manure is being developed. Methane will be upgraded to pipeline quality (CO_2 and H_2S removed) and sold as "natural gas."

Costs of Tourism

***Impacts of Tourism on Prince Edward Island*, Executive Summary $1.50, Analysis and Recommendations $2.50, from**
Queen's Printer
Box 2000
Charlottetown, PEI, C1A 7N8, Canada

PEI's Premier Alex Campbell has long been working to support the Island's simple yet deep-rooted and rewarding lifestyle. An advocate of a conserver society, self-reliance, solar energy and energy conservation, Campbell sponsored the building of New Alchemy's ARK—a research and demonstration project for integrated wind power, solar energy, food production and living which was recently dedicated on the Island.

Questioning the social value of an economy increasingly dependent upon tourism, he also commissioned, in 1975, an unprecedented analysis of the social, economic and environmental impacts of tourism on the Island. The study, performed by a Cambridge, Mass., consulting firm, was released this summer and unfortunately turned out to be a model of how not to answer the right questions. It bears looking at, however, to see how such studies can obscure basic questions and because the questions of tourism and the impacts of allowing a region's economy to depend on such outside support are important. The report asserts that the only significant impacts of tourism are positive and that the people of a region really have no options but to accept tourism and perhaps fiddle with signboard regulations to minimize its impact. Inevitably such a report becomes a major force in people's acquiescence to a fundamental change in their way of life that many of them intuitively and actively oppose, and the omissions of such a study need to be brought to light.

The economic impact of tourism on PEI is significant and seemingly positive. Tourists spend more than $23 million a year, and, subtracting the dollars that immediately go off the Island to pay for imported goods and services, they leave behind more than $20 million. This sounds great, and that's where the story is left in the report, other than examining which tourists leave the most money (therefore to be encouraged?) and which the least (friends and relatives—should they stay home?).

The story doesn't end there, however, as tourism has been depositing such amounts of money on the Island for a number of years and the environmental impact section of the study didn't mention any mountains of cash lying around disrupting the Island's ecology. In fact, the money does leave the Island again—in the expenditures of the Islanders for goods and services imported from elsewhere. And there basic questions appear, for the social and economic impacts would be very different if the Islanders provided goods and services for each other rather than providing tourist services for outsiders and then using that income for purchasing goods and services from outside.

In spite of its $20 million per year "input," tourism, when combined with off-Island purchases, may cause a net economic loss to the Island through establishing unfavorable trade arrangements with other areas. The economic impact of tourism is more than the money income it brings—it must include the unequal value of city money vs. country money, city prices and wages vs. country prices and wages, and energy slaves vs. people's work which occur in large-scale systems. The odds are that PEI, like most rural areas, doesn't come out ahead on such exchanges, which almost universally work to the benefit of the urban industrialized areas that control the economic systems.

In addition, the effects of tourism on the internal economy of the Island itself are not explored in the study. Who gets the money? What changes are there in the relative wealth of people on the Island? Who owns the tourist facilities? What effect does tourism have on in-migration? How many people come to PEI for summer jobs, taking money away; or stay, splitting the pie into smaller pieces? How much does the Island have to spend on tourist infrastructure—roads, sewers, power plants, motels and police—and is that the kind of surroundings the people of the Island want to have?

Whether we think about Prince Edward Island or America Island or Earth Island, the questions of who benefits and who pays are basic. The report implies that encouragement of tourist patterns that bring the greatest expenditures are best and should be encouraged. Yet the people of PEI take vacations, too, and for them the best vacation at least cost is as much a benefit as it is to the tourists coming to PEI. For society as a whole as well as for the people who pay, the less work, dollars, or energy necessary to satisfy our needs, the better. It would seem that a wise society would ask for a fair return for everyone's work rather than trying to milk each other for the highest possible prices. The absurdity of that approach is apparent in the strategies proposed for PEI to encourage "paying" visitors at the expense of friends and relatives which are of more than economic benefit to the Islanders.

The social impacts of tourism are equally neglected in the PEI study, which examines only surveys of residents' attitudes towards tourism—a process of relatively little use unless the residents have a real feel for what options and alternatives are available to them and what the costs and benefits of each might be. Believing that tourism "gives" them $20 million a year, frequently being personally dependent on tourism income and having little awareness of the indirect and delayed effects of a tourist economy upon their lives, few people can be expected to express what intuitive reservations they might have. Even well articulated attitudes towards tourism express only a small part of the social impacts of the industry. This is particularly true when tourism's significance lies as much in its being a disruptive economic wedge diverting people from a local, self-reliant social and economic pattern into one tied into urban and international operations as it does in the activities of the tourists themselves.

Omitting examination of social impacts implies that there are no significant social effects of different sources of people's livelihood. Yet, if people are dependent upon an institution for their income (as with tourism on PEI), can they fairly evaluate and regulate that institution? If people are largely self-reliant, either individually or as a community, do they develop a deeper and more rewarding understanding and relation with the ecological and cultural webs that support and nourish them? Do the trappings of wealth, such as television, fancy clothes and houses, and big cars create different social impacts than the leisure to enjoy other people, to have satisfying places to spend time, and to enjoy the dignity and self-confidence of forming one's life and surroundings that a slower, less materialistic way of life may offer? Is the additional effort necessary to obtain fair representation in the operation of large scale economic and social patterns greater than the benefits received?

To be of real value, a study of the impacts of tourism needs to explore and lay out meaningful options in addition to a thorough analysis of the impacts of tourism itself. Such options need to include the implications of alternative means of livelihood—small scale, self-reliant patterns of fulfilling the Island's own needs as well as options for livelihood other than tourism within larger economic patterns.

Options for modifying tourism in socially responsible ways need also to be examined. Making clear on what grounds and in what ways visitors will be accepted can strongly affect tourism patterns. Promotion of at-home vacations, local resorts and improvement of communities can reduce the need and desire to travel. Inns and guest houses can replace motels; franchise businesses can be banned on both economic and social grounds; "working" vacations, person-to-person visits, bans on non-resident cars, and dozens of other measures can be developed to allow tourism to operate at a scale and in ways that provide opportunity for visitors and Islanders to enjoy and benefit each other on a non-exploitive and non-dominating basis.

There needs to be a right as well as a necessity to maintain a society based on deep and loving relations between people and between people and land; based on the ability to relate to people according to what they contribute to your life rather than to your pocketbook; and based on chosen rather than imposed economic and social patterns. True accounting of the operation of such a society as opposed to that of an economic-exchange based society would probably show it to be less costly to operate as well as providing more satisfaction, well-being and happiness for all concerned. That kind of social accounting rather than superficial economic analysis is necessary to evaluate the fundamental changes that tourism brings to PEI or any other place.

Tom Bender

LEARNING

Last issue of RAIN ran a listing on Zephyros De School Primers. Our friend Trudy reminded us of a similar project coming out of Portland which stresses the idea of teachers starting their own exchanges of curriculum material.

Teacher Works
2136 N.E. 20th Ave.
Portland, OR 97212

Teacher Works began in 1971, when a group of Portland-area teachers decided to open a teacher center. That ran into problems, and so from 1972-75, Teacher Works orchestrated a national grassroots teacher exchange of curriculum materials. TW members sent in m*a*g*i*c lessons (things that work with kids), which were then printed up and sent back to members twice a year in Teacher Works in a Box. Each sheet bears an anti-copyright: "This material may be reproduced by any means as often as necessary." All 6 editions of the Box are sold out, but *The Best of Teacher Works in a Box* is available for $6.50. It contains 130 lessons, contributed by over 100 teachers, in a convenient 8-1/2" by 11" format.

Teacher Works also wants to spread the idea of a grassroots, decentralized exchange. The TW mailing list was sent to all members so they could start their own local exchanges, and TW has prepared a packet of "how-to" information to get others started (available for $1).

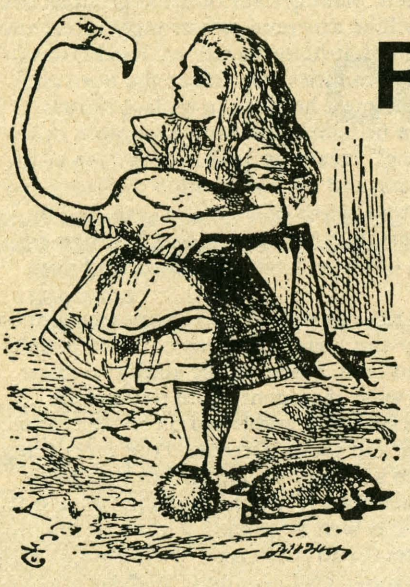
In addition, TW is working with the two local teacher organizations in Portland, as well as consulting with the Development Center of the State Department of Education in Oregon, suggesting ways that teachers can share and help each other, without lots of funding, central administrative supervision, rigid procedures, or reams of paper work. TW lacks some of the flash of an exchange like Zephyros (TW and Z trade materials back and forth), but it is like a pair of sensible shoes—practical and down to earth. A good example of appropriate technology for teachers. (Trudy Johnson-Lenz)

AERO New Western Energy Show, 2-day, 35mm slide and videotape,"how-to-do-it" workshop now available. A $100/day honorarium (plus travel, room and board) is requested from government agencies; $50/day honoraria (plus travel, room and board) from non-profit organizations. Contact:
Kye Cochran, Director
AERO
Stapleton Building
Billings, MT 59101

Many state energy offices and other energy organizations have asked AERO how they can put together similar traveling theatre-exhibit "energy shows." After a successful energy chautauqua around Montana, Kye is now available to explain how to do such shows, their possibilities and problems, scheduling and transportation hints, how to deal with people. RAIN and ECOTOPE GROUP highly recommend both Kye and the AERO energy show, especially to state energy offices working on public education programs. (LJ)

"Tools for Transition II," a 3-credit series of 9 Thursday evening classes co-directed by Evan Brown and Tony Angell, beginning October 7, 1976, at which time tuition of $51 for the course is due. To enroll, send a self-addressed, stamped envelope with name, address, zip code, phone number and a short paragraph on your interests to:
ECOTOPE/Tools for Transition II
P.O. Box 12002
Seattle, WA 98112
206/322-3753

Topics covered by Seattle area resource people include: DESIGN—gaming and decision-making (Len Dawson); EDUCATION—policies and programs for environmental equity (Tony Angell); APPROPRIATE TECHNOLOGY—food, shelter, transportation, solar, wind and bioconversion energy, greenhouses and energy conservation experiences (ECOTOPE GROUP); URBAN AGRICULTURE—home or "P-Patch" community gardening, bulk buying, food co-ops, overpackaged and overprocessed foods, container reuse and recycling (Chris Peterson, Edith Walden); PUBLIC POLICY—transition tools for policy changes aimed at energy efficiency (Nick Licata, David Baylon, Mike Hilt). (LJ)



RAIN DROPS

Hello again, or hello for the first time if you're a new reader. If you subscribed during the summer, this issue of RAIN is likely to be the first you've received. In case any of you were worried and felt forgotten, you weren't. We do ten issues a year, October through July, roughly, and so we haven't issued a new RAIN since Vol. II, No. 10, in July. But we are back again on paper and in your hand.

We all kept busy over the summer, including lots of trips, work on the *Rainbook of Changes* and on RAIN Papers on insulating shutters and solar/water heater workshops, various consulting jobs, devising a subscription renewal process, etc., etc. . . .

Along the way we had hours of useful help from Cathy Macdonald, a Portlander on summer vacation from Humboldt State College in Arcata, CA. She called one day and offered to help. She impressed us with her quick learning and personal ease in our sometimes confusing RAINworld. She's back in Arcata now, and we hope to see more of her in the future.

Our first 500 subscribers came up for renewal during the summer and were sent letters at the end of August. Of these, about 100 have renewed so far, and with new subscribers added in, we now have a total of about 1200 paid subscribers. If your subscription is expiring, a notice will be stamped on your copy of RAIN, *and* you'll be sent a letter. The letter will say which issue is your last. We'd like to keep the renewal process simple and don't plan to send more than these two notices. We'd appreciate your help in renewing promptly (even before you get a notice if you like) or saying you're not interested.

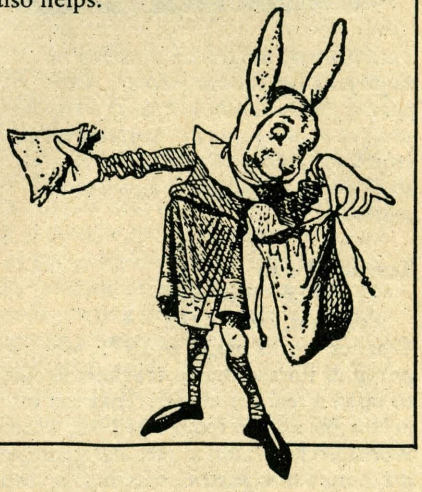
If you'd like back issues, you can order any we have available by using the blank on page 23. If you're a subscriber who missed any issues because you moved without notifying us, you too need to order them by the same process (see "Moving Soon? box). Before you order any, though, read about our *Rainbook*, page 23.

When we raised our prices in May, we eliminated the "institutional" subscription, which provided for 3 copies of each issue. If you would like multiple copies to the same address each month, write and ask about special rates.

If you write to us at RAIN and don't want your letter printed as it stands, please say so. We don't print all letters, but if one is pertinent to a topic, we'd like folks to see it. And if you write to anyone we mention in RAIN and want an answer, please include a self-addressed, stamped envelope (SASE is the usual abbreviation, and it's an important part of a RAIN reader's vocabulary). (AM)

Moving Soon? or Moved Recently?

When a subscriber moves, it costs us about 50¢ to change our three sets of file cards (alphabetical, zip code and expiration date order, in case you wondered). That's an inevitable cost of maintaining a current mailing list. But when a subscriber depends on the Post Office to notify us of an address change, we pay them 25¢ for the notification (even if it's only "moved, left no address"). And the PO usually returns the unread copy of RAIN to us. It would then cost us another 13-24¢ postage to remail it. So we ask that if you want any issues you missed by moving, please be willing to order them and pay a dollar each. And if at all possible, let us know *before you move* so we can avoid your missing them in the first place. Making friends with your mailman also helps.



***Sunset Western Garden Book*, 1973, $5.95 from:**
Lane Publishing Co.
Willow & Middlefield Roads
Menlo Park, CA 94025

Outstanding basic resource for any landscaping for the western U.S. Climate zones, plant selection guide for a wide variety of special situations and a western plant encyclopedia covering more than 5000 plants. Highly useful, and should be emulated for other regions. Another Sunset book, *Low Maintenance Gardening*, 1974, $2.45, covers selection of low maintenance plants and their care for many climates and situations.

Freedom of Information Clearinghouse
P.O. Box 19367
Washington, DC 20036

Write for their report on the Freedom of Information Act—what it is and how to use it. There's an incredible amount of useful information hoarded in the federal vaults, and the FIA is a great burglary tool for prying it out. It's also useful to find out who's been snooping on you and what they know, and to see how well the government has been doing its job. (TB)

RAIN's office is at 2270 N.W. Irving, Portland, OR 97210. Phone (503) 227-5110. See page 24 for subscription info.

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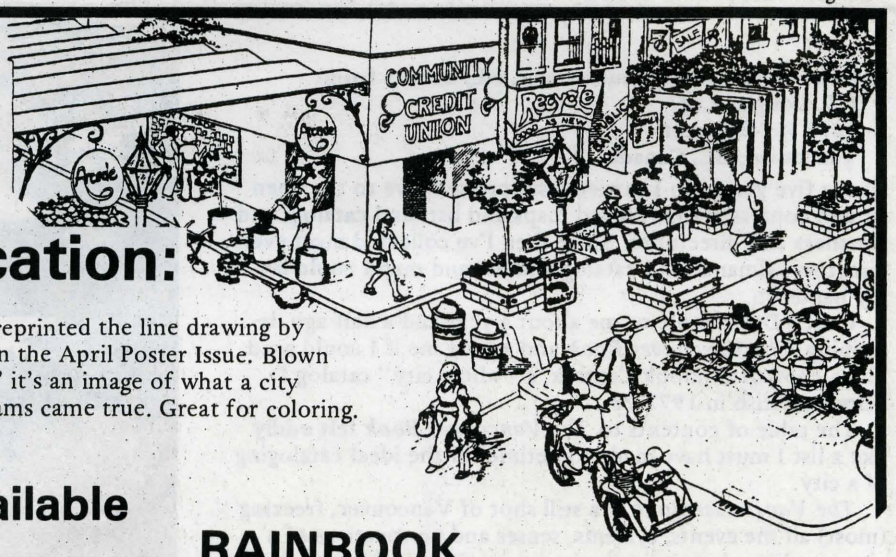

New RAIN Publication:

Ecotopia Poster—$3—We've reprinted the line drawing by Diane Schatz that appeared in the April Poster Issue. Blown up to its original size of 2'x3' it's an image of what a city might look like if all our dreams came true. Great for coloring. Give one to all your friends.

Other Publications Available

"Coming Around," an 11-page Appropriate Technology bibliography by Lane deMoll	$1	☐
Environmental Design Primer, a 208-page book by Tom Bender	$5	☐
"Sharing Smaller Pies," a 38-page monograph by Tom Bender	$1.50	☐
"Living Lightly," a 38-page monograph by Tom Bender	$1.50	☐
RAIN back issues (circle those desired) Vol. I, Nos. 7 & 8; Vol. II, Nos. 2, 4, 5, 6, 7/8, 9 & 10	$1 ea.	☐
(Of these, two were special issues: Vol. II, No. 6 was a poster issue; Vol. II, No. 9 focused on Northwest Habitat.) All other back issues are out of print.		
Ecotopia poster - 2'x3'	$3 ea.	☐
RAIN Paper No. 1, Wood Stoves (compiled reprints)	$1	☐

RAINBOOK

Our old friends will remember that we've long been promising you a RAIN "catalog"—I found the first mention of it way back in January 1975. Now we're finally about to do it!

The *Rainbook of Changes* (tentative title) will be about 250 pages of material (entries and articles) from our first two years, plus quite a lot of *new* stuff to round out the various sections. (It's amazing how many important things slip by as we rush to the deadlines each month.) All the old material has been updated, so it should be quite useful—much more so, in fact, than back issues, which we are fast running out of.

Schocken Books is going to publish it for us. (In addition to an advance, they're paying us to do typesetting and layout.) With luck it will be out by Christmas (keep your fingers crossed).

We'll let you know about price and all that when it gets decided. In the meantime, if you have any projects, books or other material that you think should be included, let us know immediately. Final, final deadline for copy is November 1. (LdeM)

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***The Vancouver Book*, Chuck Davis, ed., $10.95 from:**
J. J. Douglas Ltd.
1875 Welch Street
Vancouver, BC, Canada

About five years ago I carried a suppressed love to the open air and confessed that I loved maps and lists and catalogs and almanacs and directories. Since then I've collected most every directory, almanac and catalog and list and map I could lay my hands on.

Chuck Davis wrote to me about a year and a half ago describing *The Vancouver Book* and asking me if I could send him a copy of Chinook Centrex, a "whole city" catalog I helped publish in 1972-73.

The table of contents to *The Vancouver Book* felt oddly like a list I must have made sometime for the ideal cataloging of a city.

The Vancouver Book is a still shot of Vancouver, freezing (most) all the events, systems, senses and perspectives of a city into lists, descriptions, photos, statistics, addresses and anecdotes.

Included is history (of each neighborhood), climate, soil, trees, birds, archaeology, architecture, lighting, bridges, sounds, maps, tunnels, zoning, garbage, energy, legal resources, health care, magazines, comics, theaters, bowling and cemeteries.

Chuck Davis is a lover both of maps and lists. He is now, I hear, working on a book of maps and, in the introduction, relates this:

"It all started because I'm a list freak. When I was a kid, I remember being more than usually interested in lists. I read, or made up, lists of the longest rivers, the tallest buildings, the oldest people, the widest bridges, and so on. I recall my father once telling me, "Charlie, one of these days you're going to make up a list of all your lists." I wish he were still around to see how his prediction has come true—and in a book, too."

So what do you do with a 500-page book about Vancouver, British Columbia, in Portland, Oregon?

You can think about it. Imagine freezing all the hubbub around you into one large comprehensive mural/aerial photo that allows you to see an entire city from all perspectives (including the turn of a century); maybe while it's sitting still for a minute you'll be able to pick out where you fit in.

Catalogues and directories of cities of many sorts exist in the United States, including over 50 of what have become known as People's Yellow Pages, but *The Vancouver Book* is some kind of new animal.

In my five years of looking at catalogues, lists, directories, almanacs and maps, I've not seen anything that comes as close as *The Vancouver Book* to making sense out of all the parts of a city. (SJ)

IN THE BANK OR UP THE CHIMNEY?

The Seattle Trust and Savings Bank this summer became one of the first in the country to offer lower loan interest rates as an incentive to energy conservation. The bank is offering home purchase, remodeling, car and boat loans at 1/2 to 3/4 percent below its normal rates if certain energy conservation or efficiency standards are met (it pays to get a sailboat rather than a motorboat). The program, developed with the assistance of Wilson Clark, reflects the bank's concern for the impact of energy costs upon the monetary value of real and personal property. The bank's officers state that a natural relationship exists between resource conservation and sound economic practices—that the desirable social and economic impact of rehabilitation and maintenance of the community's older housing stock is directly connected with the ability of people to live in the most efficient and economical manner. Wilson Clark states that the conservation program could reduce fuel needs by 40-60% yearly and provide economic savings which would be paid back in four years or less. The program complements the decision made by the City Council to develop energy conservation programs in lieu of developing new generating capacity.

For more information, contact: Mr. J. C. Baillargeon, Seattle Trust and Savings Bank, 804 Second Avenue, Seattle, WA 98104.

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