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RAIN: Journal of Appropriate Technology

ECO-NET

RAIN

Journal of Appropriate Technology

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INSIDE:

RAIN is supported by your subscriptions and a grant from the N.W. Area Foundation, administered through the Oregon Museum of Science and Industry.

For subscription prices, see subscription blank on next-to-last page. This blank can also be used to send us change of address messages.

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

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Requests:

If you know anything about running an automobile using a process of conversion of methyl alcohol and water, please get in touch with Colin Messer. He's a mechanic and can be reached at the Student Resource Center, Lane Community College, Eugene, OR 97405, phone 503-747-4501, ext. 230 or 333.

CORRECTIONS

1. *The Directory of Nuclear Activists* is available from Environmental Action of Colorado, 2239 E. Colfax, Denver, CO 80206, phone 303-320-6537 or 321-1645. The address and phone listed in the Feb./March 1976 *RAIN* on page 8 are incorrect. So if you get it late, it's our fault and not theirs.
2. In last month's poster issue (April 1976, Vol. II, No. 6) the Piggy Potty quote was originally from Pete Russell (from *Undercurrents*). Ken Bossong's name was misspelled as Bossing in "April Showers."

▪ ON SPREADING THE WORD: If you send us $1, we'll send a copy of *RAIN* to five friends of yours. Please write these names and complete addresses with zips on a separate sheet of paper. (If you wrote them on address labels I'd go into ecstasy).

▪ ON EXCITING MAIL: If you're a *RAIN* subscriber, you will from time to time get some wonderful free magazines and things in your mail. They will only be things we really think you would like to know about, but if you don't want this to happen at all, note it on your subscription blank.

RAIN DROPS

ON FINANCES: We seven who work at *RAIN* had a meeting this week to talk about our money situation. We looked at what we now have, what we can reasonably expect to see as income in the next few months, and what we'll be spending during the same months. We met basically to decide on the flow of money within *RAIN* itself: who would get paid what and who would pay what. Our decision was to pay Steve and Anne $400 per month each; Nancy has a CETA position through June 30, and the other four will not be paid. Lane and Tom will continue to pay rent to *RAIN* through June 30. We based our decision on a commitment we have to two things: expanding the information services we as a center provide and continuing the magazine as one of our modes of information exchange. For the most part those who are not being paid by *RAIN* have the ability to earn outside money as consultants for other projects able to pay. This work also contributes to our information base and is passed on to our readers. We expect that in the fall our income from subscriptions and sales will be nearly sufficient to cover office and production costs, due mostly to increasing the subscription price, anticipated renewal rate, and the addition of new subscribers, which has been steady for six months. Just wanted to let you know where we're at.

▪ ON SUBSCRIPTION PRICE INCREASES: Due to the increasing impact of the dwindling of our foundation grant, we're raising subscription prices as of April 1. Regular subscriptions are $10/year (10 issues). If your budget is pared down and $10 means you can't do it, $5 will suffice. If we have to bill you, please add $5 to your rate. And, if applicable, add foreign postage (it's all listed on the subscription blank). We won't be having a 3-fer $10 institutional rate any more. If anyone still does want multiple copies of each issue, write and ask for arrangements. Anyone who subscribed at the old rates will still get the number of issues originally agreed upon.

• ON FREE LUNCHES: When you contact the groups we list, expecting a reply, please enclose a stamped, self-addressed envelope.

• ON ANONYMITY: If you write to us and don't want your letter printed as-is, say so.

• ON BEING LOST: When you write to us, or to anyone, and expect an answer, please write your name AND ADDRESS on your letter itself. Sometimes envelopes get lost, and with them the only record of the writer's address. This happened recently to a Craig Savage. If you read this, Craig, please write again.

• ON PROPER PLACEMENT OF INFORMATION: If you write a newsy note on your subscription blank, we either have to re-copy the note or the subscription info, or else one of them will probably get lost. Almost the same goes for any conglomeration of info and requests. Routing one letter to lots of people, and through lots of processes, is risky in most offices. It's like writing your shopping list on the same paper with that important phone message and your aunt's address and the new casserole recipe you found.

• ON EXACTITUDE: Please use correct, current, full addresses, including zip codes. For us, or anyone, to take advantage of the PO's third and fourth class rates for printed matter, we can't ask the PO to look up parts of addresses. The advantage we gain is that it costs us 1.8¢ to bulk-mail a copy of *RAIN*, or 13¢ for a single copy, instead of 35¢

▪ ON DOUBLE ISSUE: This *RAIN* is Volume II, No. 7/8. It's got lots of pages and information, and if you expected 240 pages of *RAIN* for your annual subscription, this issue brings this volume up to 200 pages, with two more (at least 24 pages each) issues left.

▪ ON MOVING AROUND: When your address is going to change, please let us know ahead of time, or else you'll probably lose at least one copy of *RAIN* to the post office's magazine-eating address change notification system. (Every month I ask people to do this, and still there are subscribers who don't. Next month I may print an ENEMIES LIST).

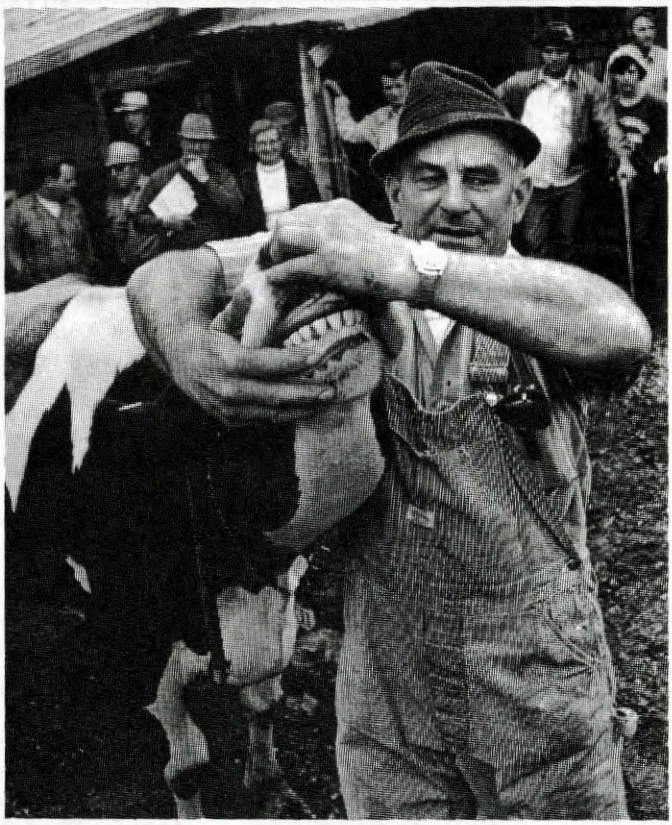
▪ ON BACK ISSUES: Those available are Vol. I, Nos. 7, 8 & 9, and Vol. II, Nos. 1, 2, 4, 5 & 6. $1 each, write to us if you want any.

(AM)

Country Auctions

Most of the busiest airways in the country cross each other and the Mississippi River above the small town of Muscatine, Iowa. From the river you can see dozens of planes passing far overhead every day.

Looking down through seven miles of nothing from your airplane window you might be able to make out the single bridge crossing the Mississippi, and south of the bridge you might possibly see a small white speck anchored to the wooded Illinois shore across from the town. That speck turns out to be an old sternwheel river towboat on which live two river rats—Lane's sister Cathy and her husband Steve. Auctions, they've discovered, are probably closer to being the social glue of that rural area than even the churches, and they've become true auction fanatics. (TB)



We're building our house slowly, and as a real bed replaces a door resting on cupboards, we move the cupboards and have no room for the door; as we finally build our own chairs, two wonderful old overstuffed chairs, well-loved and well-worn, become sad misfits to be climbed over or piled in a corner. And as we build and change, new needs arise. We find an old hand drill which needs a chuck no longer made; we cannot afford the materials for a duck coop and the ducklings are fast outgrowing their cardboard box.

Where to go? We trundle all our outgrown objects into the car and head to the local auction barn where they are sold on a twenty percent consignment basis to the highest bidder. In return, we find another hand drill, not as nice as ours, but with the perfect chuck, and we pick up a pile of screens for 50¢ that will make the airiest duck coop (we will place the screens on a floating platform fished out of the river).

The survival of the auction is a hopeful sign in a society so accustomed to disposable living that it is not unreasonable for an imaginative person to live solely on articles found in garbage cans and back alleys. Those whose throwaway habits bring on a twinge of conscience give to the Good Will. Well and good. But the auction presents a Good Will with dignity and profit for all.

We are talking about visible and participatory economics. Every bidder must determine an item's value. Considerations range from general availability to a comparison of the article bought retail to an item's resale value or its adaptability. An old bar stool is bid on by one who will sell it as scrap metal, one who will replace his tractor seat, and one who will paint it up and put it in his basement bar. When an article is in good shape for its original purpose, such as a tool, and the dealers don't want it, we have watched such serious and close bidding that the caller could not get a bidder to raise even a nickel. And time and time again we have checked those winning bids with the price in the Sear's catalog and found the auction price to be about 75%. These people survive on the ability to assess the real worth of every item, by weighing the retail value against all other considerations. How much time can I save by owning this tool? What is the cost if I made it myself? Can I adapt this piece to that purpose?

We like to think we have discovered something new, but we are witness to an old and essential art. The auction as a marketplace and a social institution has served its clients well. The influx of outsiders, like ourselves, creates pressures on the institution. Strangers can break down the social cohesion, and strangers increase the instances and fear of stealing. The new buyers also tend to change the auction's economic structure. Values change according to purpose. To a curiosity seeker the process of winning takes precedence over the price paid; and the person looking for a novel plant pot can usually outbid the farmer who needs the ceramic crock for its original purpose—to make beer. It is a problem inherent in the system, and in fact is the basis of that system, but it is magnified when groups vastly different begin to mingle.

We owe much to the auction. We have spent many wonderful evenings with the crowd and have been able to build more than we could ordinarily afford through its bargains. But it is a system that is dependent in many ways on a cohesive economic and social foundation, and perhaps even a measure of trust. Is it adaptable to other, non-agrarian situations? Can it even survive in its own climate? We hope our presence does more to contribute than to harm the system on which we have begun to depend.

Cathy deMoll

To find out about country auctions in your area, look under "auctioneers" in your Yellow Pages and ask one where they are. Or contact the following:

American Society of Auctioneers
4209 Lindell Blvd., Suite 408
St. Louis, MO 63100

National Auctioneers Association
135 Lakewood Drive
Lincoln, NE 68510

AGRICULTURE·FOOD

***Community Gardens: A Guide to Organization and Development*, Susan York Drake, Technical Assistance Bulletin No. 4, from:**

Bureau of Outdoor Recreation
U.S. Dept. of the Interior
Lake Central Region
3853 Research Park Drive
Ann Arbor, MI 48104

A good bit of information here for setting up community garden programs: organizing, insurance, potential problems, budget, seed sources, how much to plant, books on gardening. Should help avoid some pitfalls if you're just getting going. (TB)

***Energy, Agriculture and the Environment*, Larry Geno, 1975, 70 pp, prepared for Environment Canada and available from:**

Larry Geno
Box 5516
Station F
Ottaway, Canada

Environment Canada should be commended for having the foresight to commission studies such as this—which amounts to an environmental impact statement on our present agricultural practices and a comparative analysis of alternatives available to us. It analyzes the impact of energy inputs and outputs, economic damage, losses of agricultural land, potential climate changes, economic costs of development, and policy and process alternatives. A basic planning document for agricultural/environmental policy. (TB)

***The Food Co-Op Handbook*, by the Co-Op Handbook Collective, $4.95 from:**

Houghton-Mifflin Co.
1 Beacon St.
Boston, MA 02107

or $3.00 from:

NEFCO
55 Beach Glen St.
Roxbury, MA

"From start to finish, it has been a collective project. The four authors were helped by more than 100 people in the food co-op movement who contributed articles, advice, comments, information and, in some cases, chapters."

That a collectively-authored effort could be effective is incredible, if not impossible—yet here it is. Simple, direct, thorough—all that cumulative experience carefully laid down. They seem to have covered it all—organization, decision-making participation, finances, warehousing, while spelling out the essential character of the collective process with devotion. An excellent reference, including a 40-page national food co-op directory. Available also at bulk rates. (NL)

***Food Co-Ops for Small Groups*, Tony Villela, 172 pp., $2.95, from:**

Workman Pub. Co.
231 E. 51st St.
New York, NY 10022

An excellent companion to the *Food Co-Op Handbook*. How to buy produce, container definitions, sample forms, inside-the-industry glossary, and other practical marketing information (NL)

A reminder of some previous *RAIN* entries:

***Food Conspiracy Cookbook*, Lois Wickstrom, $4.95 from:**

101 Productions
834 Mission St.
San Francisco, CA 94103

***How to Form a Food Co-Op*, Illinois Association of Community Action Agencies/Food Co-Op Project, 30 pp., from:**

Food Co-Op Project
64 East Lake St.
Chicago, IL 60601

They also have *Food Co-Op Nooz*, $3.

"The Hows & Whys of Food Co-Ops," March 22, 1975 issue of *Environmental Action Bulletin*

33 E. Minor St.
Emmaus, PA 19049

Nutrition Information Center
Phoenix Reid
201 S.E. 12th
Portland, OR 97214
503-233-3654

Especially involved with the ethics of food. Giving workshops on the use of complimentary plant proteins and unrefined, unprocessed foods. Has specific information geared to senior citizens, institutional needs, mini gardens, food dehydration, backpacking recipes.

Using the principles outlined in *Diet for a Small Planet*, we can get sufficient protein basically from plant protein, using unprocessed, unrefined foods. Another advantage to using unprocessed, unrefined whole grains, beans and other vegetables is that we can cut down on our consumption of food additives as well.

So I offer from my laboratory some recipes which are high protein, relatively low-cost and considered successful by my "guinea pigs."

CARROT CASSEROLE—4 Servings
3/4 cup cooked soybeans, slightly mashed
1 cup cooked tomatoes
1 medium onion, chopped
1/4 cup raw wheat germ
1/2 cup cottage cheese
1/2 cup peanuts, sesame seeds, sunflower seeds and almonds, chopped
1/4 teaspoon savory
1/4 teaspoon dill seed
2 medium carrots, grated
1 egg
salt & pepper to taste

Mix all ingredients thoroughly, place in an oiled casserole dish, bake 45 minutes at 350°

APPROPRIATE TECH

***Coming Around*, Lane deMoll, 1976, $1 from:**

***RAIN* Magazine**
2270 N.W. Irving
Portland, OR 97210

We finally found time to type up in one place the a.t. bibliography Lane put together last fall. A couple of sections appeared in past issues, but it's now eleven pages of annotated goodies that give the best introduction we can think of to what a.t. can mean in a lot of different areas. Does not include how-to publications from VITA, ITDG, etc., or alternative energy stuff, but steers you to them. (TB)

Continued on page 7

The following centers are ones who have been active for some time in assisting people in other countries to develop technologies appropriate for their needs and conditions. We will be telling more about these and other centers and listing their principal publications in future issues.

APPROPRIATE TECHNOLOGY CENTERS

Many of the foreign publications can be obtained in the U.S. through Metastasis, *P.O. Box 128, Marblemount, WA 98267, more easily and rapidly than from their original group. Write for Metastasis's new pricelist (about 250 excellent publications).*

Agency for International Development
Department of State
Washington, DC 20523

Agricultural Engineering Department
The International Rice Research Institute
P.O. Box 933
Manila, Philippines

Appropriate Technology Advisory Unit
Christian Relief and Development Association
P.O. Box 5674
Addis Ababa, Ethiopia

Appropriate Technology Cell
Ministry of Industrial Development
268 Udyog Bhavan
New Delhi 110011 India

Appropriate Technology Centre
506 P Block
President's Secretarian—Planning Div.
Government of Pakistan
Islamabad, Pakistan

Appropriate Technology Development Unit
Gandhian Institute of Studies
Post Box 116
Rajghat
Varanasi 221001 India

Brace Research Institute
MacDonald College of McGill Univ.
St. Anne de Bellevue 800
Quebec, Canada H0X 3MI

Industrial Development Division
Engineering Experiment Station
Georgia Institute of Technology
Atlanta, GA 30332

Intermediate Technology Development Group Ltd. (ITDG)
Parnell House
25 Wilton Road
London, SW1V 1JS, U.K.

OXFAM
274 Banbury Road
Oxford OX2 7D7, U.K.

Planning Research and Action Division
State Planning Institute, U.P.
Kalakankar House
Lucknow, India

Regional Adaptive Technology Center
Mindanao State University
Marawi City
Mindanao, Philippines

Société d'Aide Technique et de Coopération (SATEC)
110, rue de l'Université
Paris, 7e France

Southeast Asia Technology Co. Ltd. (SEATEC)
Nai Lert Building
87, Sukhumuit Road
Bangkok, Thailand

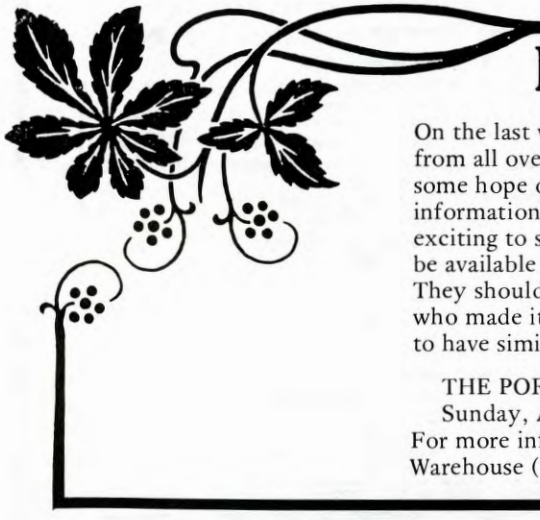
Technology and Development Institute
East-West Center
Honolulu, HI 96822

Technology Consultancy Centre
University of Science and Technology
University Post Office
Kumasi, Ghana

TOOL
Division of Microprojects
Technische Hogeschool Eindhoven
Postbus 513
Eindhoven, Netherlands

United Nations Industrial Development Organisation (UNIDO)
P.O. Box 707
A 1010 Vienna, Austria

Volunteers in Technical Assistance (VITA)
3706 Rhode Island Ave.
Mt. Rainier, MD 20822

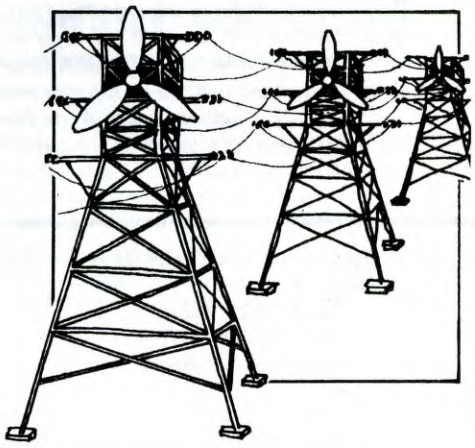


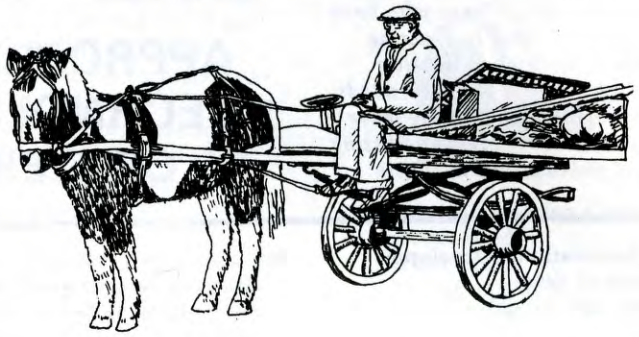
LEAP YEAR CONFERENCE

On the last weekend in February a group of people representing alternative organizations from all over the N.W. met in Sandy, Oregon, for the Leap Year Conference. There was some hope of federating . . . but it was enough just to get to know one another. Ideas and information flowed well in practical trade workshops and small discussion groups. It was exciting to see how many of us there are and how *together* we are! The proceedings will be available shortly from: Leap Year Conference, P.O. Box 10091, Eugene, OR 97401. They should be worth reading—many thanks to the organizing committee from Eugene who made it all possible. Most of us left Sandy with a renewed sense of purpose and plans to have similar gatherings at a more local level. Thus:

THE PORTLAND CONFERENCE ON COMMUNITY STRENGTH
Sunday, April 11 at the Contact Center, 1532 S.W. Morrison

For more information, call the *RAIN* office (503-227-5110) or the Portland Community Warehouse (503-236-2247).





RADICAL TECHNOLOGY

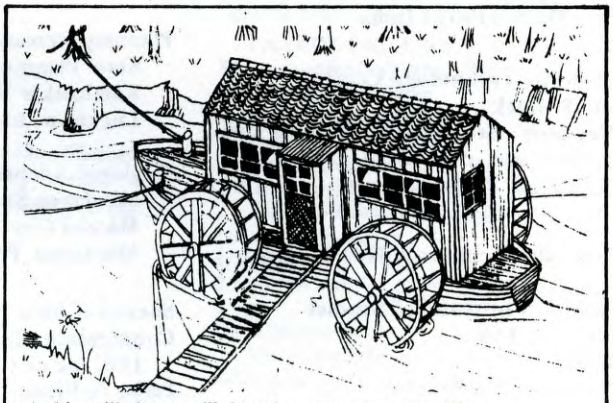
Radical Technology, Godfrey Boyle and Peter Harper, Ed., 1976
$5.95 from:
Pantheon Books
201 E. 50th St.
New York, NY 10022

An impressive collection of essays, reports, access information and counterculture philosophy that surveys a broadly-viewed range of "technology." Interesting essays on tree farming, textile making, biological chemicals, metal working and paper making. Much of the writing is not particularly penetrating, but does pull together in one place an introduction to a.t. from a counterculture perspective. By the editors of *Undercurrents*. Makes accessible much of the information on European developments that is difficult to obtain in the U.S. (TB)

Fig 4.
Products obtained by dry-distillation of 1 ton of hardwood scrap (ca. 70% maple, 25% birch, 5% ash, elm and oak)

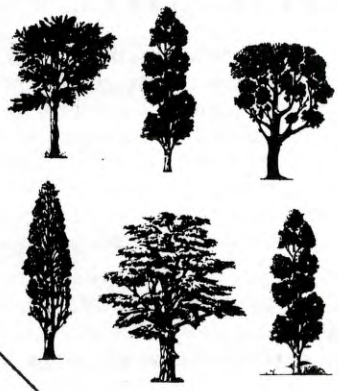
Charcoal	600 lb
Gases:	5,000 cu ft
Carbon dioxide (38%)	
Carbon monoxide (23%)	
Methane (17%)	
Nitrogen (16%)	
Methanol	3 gall
Ethyl acetate	15 gall
Ethyl formate	1.3 gall
Acetone	0.7 gall
Creosote oil	3.3 gall
Sol. tar	22 gall
Pitch	66 lb

Source: Alan J.P. Dalton, 'Chemicals from Biological Resources' *ITDG*, (1973).



A ship mill. *(corn-mill, laundry, paper- or saw-mill).*

Table 4. Some British tree products suitable for direct human consumption.



Tree	*Part used*	*When gathered*	*Preparation*
Almond	Nut	Sept/Oct	Cook as meat
Ash	Seeds	From July	Boil twice and pickle
Beech	Nuts	Sept/Oct	Raw/bake and salt
	Leaves	April/May	Young leaves cooked as vegetables
Crab apples	Apples	July to Dec	Make into cider or jelly
Elder	Flowers	Before fully open	Raw/infused boiling water (drink)
	Berries	When ripe	Raw/add to apple pie
Hawthorn	Fruit	Early Autumn	*Not* raw. Make into preserve
	Leaves	April	Use in baking (see Mabey)
Hazel	Nut	Late Aug/Oct	Chopped on salads/salt and store
Lime	Leaves	Summer	Sandwich filling (raw)
	Flowers	July	On salads
Medlar	Fruit	Mid-Winter	Bake or make into jelly
Mountain Ash (Medlar)	Berries	Oct	Make into jelly
	Not leaves		*Poisonous*
Oak	Acorn	Oct	Shell, grind, boil until water is dark, change water. Repeat, and rinse for up to 12 hours
Sweet Chestnut	Nuts	Oct/Nov	Roasted or made into stuffing
	Leaves	June/July	*Not* raw
Walnut	Nut	July	High vit C when raw
	Nut	Oct/Nov	Pickle/make into a marmalade
	Leaves	June/July	Infuse as tea

APPROPRIATE TECHNOLOGY
continued from page 4

***Testimony Before the Senate Select Committee on Small Business, Dec. 2, 1975*, Dr. Barry Stein, 12 pp, inquire for price, from:**
Center for Social and Evaluation Research
University of Massachusetts
Boston, MA 02125
A very clear summary of the different economic and community costs and benefits of small and large business, real efficiency of small business and manufacturing, and recommended changes in legal structures and administrative practices by government agencies to encourage more independent, community-sustaining and effective businesses. By the author of the excellent *Size, Efficiency and Community Enterprise* (Jan. '76 *RAIN*). (TB)

***Low Cost Technology: An Inquiry into Outstanding Policy Issues*, Nicolas Jaquier, 1975, Worldtech Report No. 2**
Control Data Technotec, Inc.
8100 345h Ave. So.
Minneapolis, MN 55440
A study based on the 1974 OECD seminar of "low cost" technology practitioners. The full proceedings of the seminar will be out later this year and should be worth reading. The present report gives a general overview of major issues discussed—information mechanisms for low-cost innovations, a.t. and appropriate government policies, the role of universities, building up new industries and identifying new opportunities for innovation. Gives good feeling for the "managerial" and institutional pressures on a.t. that are going to develop as the money starts to flow. An instructive comparison is given between our present costly information services and innovative low-cost access techniques. (TB)

Booth/New Yorker

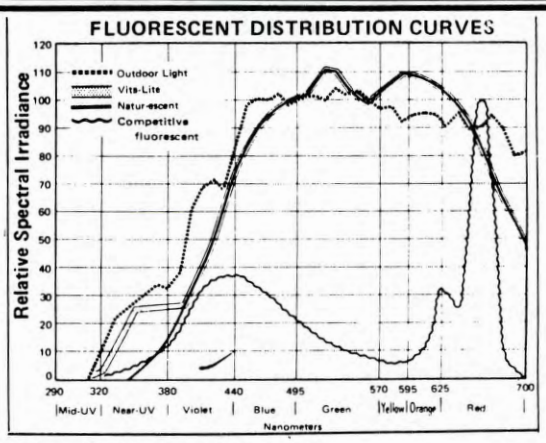
ARCHITECTURE

***Low-Cost, Energy-Efficient Shelter*, edited by Eugene Eccli, 1976, $5.95 from:**
Rodale Press
Emmaus, PA 18049
Combines good experienced advice on when and when not to build yourself, financing different building options, dealing with codes, neighbors and contractors, along with solid information on lowering first-cost of a home, reducing energy use and employing income energy sources. Not a primary reference in any of these areas, but gives good overall guidance and access to some hard-to-find aids: Cinva-Rams, super-sealants, pre-cut homes, or cellulose fiber insulation. (TB)

A. A. Abbingdon Ceiling Co.
2149 Utica Ave.
Brooklyn, NY 11234
These folks are the only ones we know who produce the decorative stamped metal ceilings that were common in the turn-of-the-century stores. They still have advantages for certain applications—non-flammable, washable, yet decorative. More than twenty ceiling patterns available, along with 10 different cornice and trim designs. (TB)

Continued on page 10

***Health and Light*, John N. Ott, 1973, $7.50 from:**
Devin-Adair Co.
Old Greenwich, CT 06870
We just got another letter yesterday from a person wondering if we knew why they commonly got a headache and had trouble concentrating after a short period of time in fluorescent-lit buildings. We keep meeting more people who have that experience—as we have. Half way through a supermarket we're half asleep and have trouble remembering what we're doing. John Ott's book opens up some of the reasons why. Like anything breaking new ground, it has caused a rage of controversy. He's what "scientists" are supposed to be—people with their eyes and minds open enough to look into the reasons why things go wrong when they're not supposed to. While pioneering time-lapse photography of plants he found strange things happening when he had to grow the plants in glass greenhouses or under artificial lights. A long series of experiments by him and others revealed important effects on biological systems of spectral ranges missing from artificial light or blocked by window glass. He also pioneered research showing dangerous effects of radiation from TV sets that brought development of new safety standards—he found that some TV tubes tested had X-ray emissions up to 1.6 million times the acceptable safety level established by the National Committee on Radiological Protection! *Health and Light* is a fascinating and important study of the effects of natural and artificial lights on people and other living things. (TB)



Vita-Light Full Spectrum Lamps
Duro-Light Lamps, Inc.
17-10 Willow St.
Fair Lawn, NJ 07410
These full spectrum fluorescent lamps—which reproduce fairly closely the spectral distribution of sunlight (including the near-UV band)—were designed as a result of John Ott's research. Other "plant growing lamps" by the same manufacturer do not cover the same spectral pattern, and even these lamps share other problems common to all fluorescent lamps. (TB)

Red Star Over China

It's been clear almost from the beginning that something exciting has been going on in the People's Republic of China. The increased level of travel there in recent years has resulted in a flurry of reports about what has been accomplished since 1949. Almost all of the material written shows that there is much we can learn from their experience: their localized health care program (barefoot doctors, virtual elimination of VD and other diseases), their incredible use of simplified technology, the ethic of serve the people, and their consciousness and self-reliance.

Yet, I was greatly impressed by a talk by Orville Schell at Farallones last summer where he expressed his ambivalence about his three months' work experience in China last spring, first in a remote farm area and then in a Shanghai factory. He had gone speaking Chinese and feeling great enthusiasm for all he had read. He was surprised to find that the *total* selflessness of the people nearly drove him up a wall after a time—they looked at him askance when he asked for a little time alone. It also depressed him to realize that the Chinese are plunging full speed ahead into an industrial society—albeit on their own terms. He felt there was very little of the so-called "ecological consciousness" he had hoped to find. Pollution in manufacturing centers is as bad as many places in the West and growing daily worse. People recycle and reuse things because they cannot afford to waste them. When it is important to have more fertile agricultural land, the river is made to change its course even if it changes the face of a beautiful mountain.

His lesson was clear—we can borrow ideas from the Chinese experience, but we *must* adapt them to our own needs and culture. It'll be some time, I think, before we know enough to understand what all this really means for our own struggles for alternatives to our present way of doing things.

In the meantime, here are some of the books I found most interesting and helpful in my search for some understanding of what was going on there. (LdeM)

The China Reader, 3 Volumes, Franz Schurmann and Orville Schell, Vintage, 1967, from: $2.95
Random House
201 East 50th
New York, NY 10022
"Imperial China," "Republican China," "Communist China." These books will give you a good overview of China's recent history with a good smattering of political writings and first-hand accounts.

The Crippled Tree, A Mortal Flower, and *Birdless Summer*, Han Suyin, 1972, from:
Panther House Ltd.
P.O. Box 3553
New York, NY 10017
The three-volume autobiography-history from 1885-1948. A half-Chinese, half-Belgian woman growing up in Szechuan Province. Somehow these books gave me as good a feeling as anything I read about how it was "before."

Red Star Over China, Edgar Snow, 1937, $2.95 from:
Grove Press
53 East 11th St.
New York, NY 10003
This is the classic story of Snow's trips behind Red Army lines in 1936 when they were still a band of "upstarts." He was skeptical when he went and then became very close to them. His succeeding books, *Journey to the Beginning, The Other Side of the River, Red China Today* and *The Long Revolution*, chronicle his continuing friendship with the Chinese. His warm and loving accounts make all the big names into real people.

China Shakes the World, Jack Belden, 1949, $3.95 from
Monthly Review Press
62 W. 14th St.
New York, NY 10011
An American reporter traveling among the peasants and the Red Army during the war with the Japanese and the continuing struggle against Chiang K'ai-shek's Kuomintang. Good reports on peasant efforts.

***Yo Banfa!*, Rewi Alley, $1.35 from:** **1952**
New World Press
135 East 44th
New York, NY 10017
When this New Zealander's efforts to organize factory workers into cooperatives proved too radical (and effective) for the Kuomintang, he joined the communist forces. He's still there today. A good picture of the terrible oppression of pre-communist China.

Once the fighting was over, it was time to turn full efforts to the on-going struggle of changing people's lives—continuing the real revolution:
***Fanshen*, William Hinton, Vintage, 1966, $2.95 from:**
Random House
201 East 50th
New York, NY 10022
The best account I know of a small village's efforts to "turn itself over"—dealing with former landlords and spies, dividing up the land (this had to be done several times as their perceptions of "fairness" changed), and consciousness-raising—the continuous process of teaching each other to be effective farmers and comrades. Warmly written. Although I haven't read them, I'm sure Hinton's later books, *Iron Oxen* (1971) and *Turning Point in China* (about the Cultural Revolution, 1972), are equally perceptive.

***Prisoners of Liberation*, Allyn and Adele Rickett, Anchor Press, 1973, $2.50 from:**
Doubleday
501 Franklin Ave.
Garden,City, NY 11530
Two Americans convicted of spying in the period during the Korean War and sentenced to prison. A fascinating account of the criticism/self-criticism process by which they dealt with their crime (including their distaste for the Chinese as a people—even though they had been Chinese language students) and and their totally changed attitudes following their release after four years. They now work with the AFSC in this country.

***Away With All Pests*, J. S. Horn, from:** **1969 $2.45**
Monthly Review Press
62 W. 14th St.
New York, NY 10011
This is one of my favorites—if you're only reading one China book, pick this one. By an English doctor who immigrated with his family in the '50s. A fine perspective on the process of humanizing health care—one of the more successful of the efforts to truly serve the people.

Here are some more up-to-date things covering specific topics:

***Women and Child Care in China*, Ruth Sidel, 1972, $1.25 from:**
Penguin Books, Inc.
7110 Ambassador Road
Baltimore, MD 21207

***China: Science Walks on Two Legs*, Science for the People, Avon Books, 1974, $1.75 from:**
Hearst Corporation
959 Eighth Ave.
New York, NY 10019

***Barefoot Doctor's Manual*, U.S. Dept. of Health, Education & Welfare, Public Health Service Publication No. 75-695 (NIH) $9.75 from:**
U.S. Government Printing Office
Washington, DC 20402
See *RAIN*, Vol. II, No. 5, Feb./March 1976.

"Rural Industrialization in China," John Sigurdson, in *China: A Reassessment of the Economy*, Joint Economic Committee, U.S. Congress, July 10, 1975, 24 pp.

***The Role of Small Scale and Rural Industry and Its Interaction with Agriculture and Large Scale Industry in China*, John Sigurdson, 1974, 169 pp. from:**
The Economic Research Institute
Box 6501
113 83 Stockholm, Sweden
These papers both cover the same ground. Accessibility determines preferability. Thoughtful analysis of the purposes, successes, failures, and evolution of Chinese rural industry. Reveals very different intents and purposes than U.S. a.t. developments, yet useful overlays. A full monograph on the subject by Sigurdson will be published later this year by the East Asian Research Center at Harvard.

China Books and Periodicals is the best way to keep up with current writings. They carry all the books here and many, many more, including the writings of Mao and other revolutionaries, Chinese language books, children's books, records and maps. They also carry material on Vietnam and other Third World liberation struggles—including a number of books and pamphlets in Spanish. Write them for their extensive catalogue.

West Coast Center
2929 24th St.
San Francisco, CA 94110

East Coast Center
125 5th Ave.
New York, NY 10003

Midwest Center
210 W. Madison St.
Chicago, IL 60606

Well, now that you're all fired up to go to China, talk to the U.S. People's Friendship Association, National Office, 2700 W. 3rd St., Los Angeles, CA 90057. Find out which of the many local chapters is nearest you—they put together trips regularly in addition to sponsoring discussion groups, speakers, films, etc. They also publish a quarterly magazine that's full of interesting pictures and a wide variety of articles. It's available on many newsstands:
New China
41 Union Square West
New York, NY 10003
$4/yr. ($8 institutions)

THERMOGRAPHY

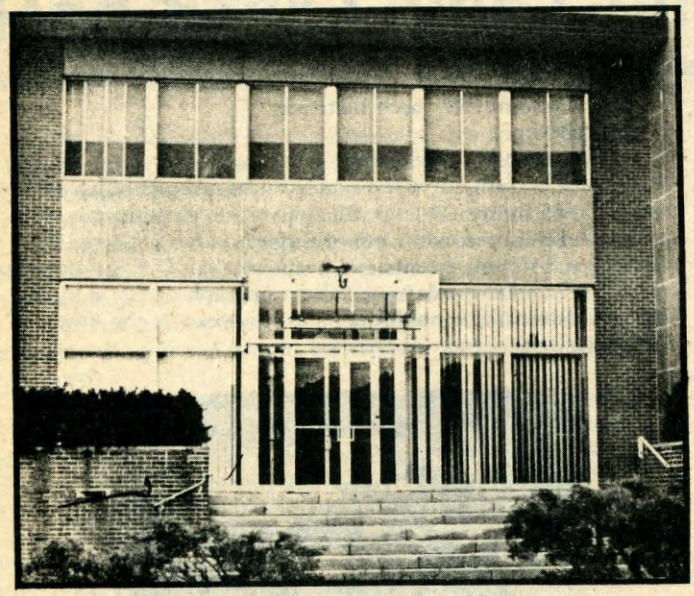
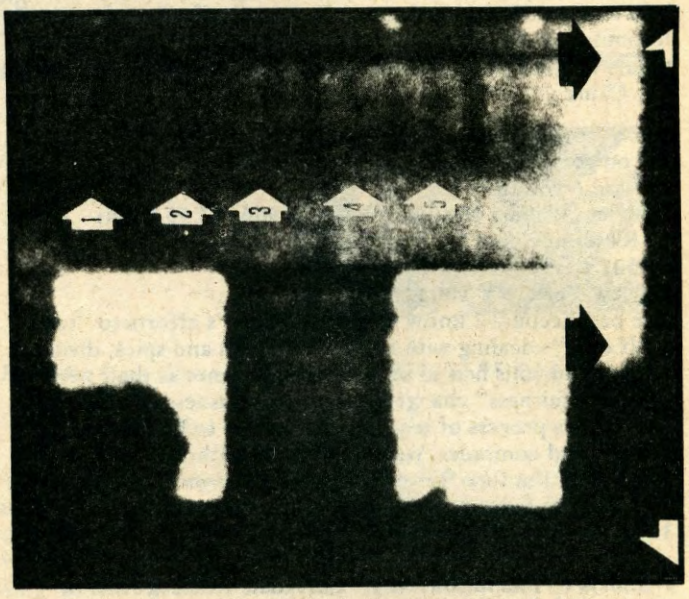


Photo and thermogram show different heat loss of regular windows (white), entrance foyer (black), storm windows (2nd floor). White area on right is from heat reradiated from sun-heated brick wall.



New infra-red photography techniques being used to detect excessive heat loss in buildings are making invisible heat losses visible. Besides being an effective tool for reducing energy waste, the thermogram pictures produced help everyone see and believe what others have been saying about the value of insulation, weather-stripping, curtains and entryways. Pioneered as a research tool in Sweden over the last 7 years, thermography has proven a valuable aid for detection of construction errors in new buildings, determining effective building and insulating practices, understanding where and how heat loss and gain actually take place in buildings, where opportunities exist for heat savings, and what conditions actually are present in existing buildings.

A Midwest utility, CENGAS, has been using aerial thermography of five communities in Nebraska and South Dakota to measure heat loss from residential and commercial buildings. Property owners will then be urged to contact the utility to find out whether their homes are adequately insulated. The National Bureau of Standards, FEA and the U.S. Army Cold Regions Laboratory are working on refining the technique which is already being used commercially for insulation inspection services. The major drawback remains the excessive cost of equipment ($40,000) which will prevent wide application until less expensive units are developed. Does anyone know of simpler infra-red techniques? Will direct i-r photography work? What about the i-r television used by the military in Vietnam?

For further information:

"Infra Red Scanners," *Popular Science*, Sept. 1975, p. 86. Dramatic thermograms and survey of developments in the field.

"Thermography Helps Save Energy," *Engineering News-Record*, March 27, 1975, p. 11. Discusses CENGAS project and other commercial applications

Thermography of Buildings, Paljak and Pettersson, 1972, from Svensk Byggtjanst, Box 1403, S-111 84, Stockholm, Sweden, 40 Swedish Kroner. The basic reference manual for thermography. Describes theory and techniques and contains a catalogue of black and white and color thermograms for common wall designs and conditions.

"Detecting Structural Heat Losses with Mobile Infrared Thermography," Munis, et. al., Research Reports 326, 338 and 438, from U.S. Army Cold Regions Research and Engineering Laboratory, Hanover, NH 03755. These three reports describe techniques developed and surveys on Pease AFB and U.S.A. CRREL. (TB)

ARCHITECTURE

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***ASHA-Rural Cap Rammed Earth Report No. 1 and H-Plan House Comments*, 70 pp., 1968, Alaska State Housing Authority Remote Housing Program, Vetle Jorgensen, Architect, $1 from *RAIN*.**

I don't know where these reports came from or what came of the program, but we have about twenty copies we can make available to people for $1 each. This report, like Bill Yanda's Solar Sustenance Project Report (*RAIN*, Vol. 2, No. 1, Oct. '75), is the kind of report I like to see on what people have done. Clear, concise—laying out what went well and what went wrong, what people should try next if it works and if it doesn't. Also shows the thin line where theory and reality overlap. Anyhow, an excellent report on test houses for using indigenous materials for rammed-earth construction of houses in remote areas of Alaska. (TB)

***Pole Buildings in Papua New Guinea*, Peter Lattey, 1974, 41 pp. from:**

Forest Products Research Center
P.O. Box 1358
Boroko, Papua New Guinea

Use of simple round poles rather than sawn lumber conserves resources where you're not cutting down 800-year-old forests, but it requires good, simple design. This booklet reviews constructed designs for 30-ft. hessian cement-covered geodesic domes, market halls, bus stops, community halls, health centers and homes, along with design details, plans, photos of completed buildings, and information on structural trusses, cement roofs and rural wood preservation. Donation to cover printing and postage would probably be appreciated. (TB)

***Build Your Own House in the Old Ohana Style*, Suzanne Stewart, 1974 $7.50 from:**

The Hawaii Community Design Center
2480 Koa Ave., L-29
Honolulu, HI 96815

A good, simple, step-by-step guide for building a $7.50/sq. ft. owner-built house house suitable for the Hawaiian climate. The design, unlike many "low cost" houses, feels comfortable. Good how-to drawings include details for making doors, shutters and cabinets. Plans are also available. (TB)

COMMUNITY

***The Costs of Sprawl*, Real Estate Research Corporation, 1974:**

U.S. Government Printing Office
Washington, DC 20402

Executive Summary (4111-00023) 55¢; *Detailed Cost Analysis* (4111-0021) $2.90; *Literature Review & Bibliography* (4111-0022) $3.25. Also summarized in *Ekistics*, Oct. 1975. Thoroughly documents a wide range of costs for different patterns of community land use from low density single-family suburbs to high density compact planning. Covers capital, land, energy, pollution, water use and auto use costs for different options. Many costs are halved through compactness of land use. (TB)

***The Community Context of Economic Conversion*, Barry Stein, 1971, 63 pp., inquire for price:**

Center for Community Economic Development
1878 Massachusetts Ave.
Cambridge, MA 02140

Explore the community impact of defense contracts, absentee ownership, and industrial trends, such as the impact on Seattle, Boston and Southern California of depending on aerospace contracts for their main employment base. Presents excellent case for community-owned businesses. (TB)

***Nongrowth Planning Strategies*, Earl Finkler and David Peterson, 1974, $13.50 from:**

Praeger Publications
111 Fourth Ave.
New York, NY 10003

A concise and right to the point study of growth control for communities. No one has yet dealt with real responsibilities of small regions towards growth, but at least this covers what isn't happening at state and federal levels and why it is pragmatically necessary for communities to act. Analyzes economic costs of non-growth and explores a range of available mechanisms for attaining it. Things are moving fast in this area, but this is a good starting point. (TB)

Rural Tribune

Washington County Community Action Organization
546 E. Baseline
Hillsboro, OR 97123

Free, published monthly. Met these folks at the Leap Year Conference, and, from all appearances, this is a community action agency at its best. They just helped set up a food co-op (Vital Vittles, 1235 E. Baseline, Hillsboro) and are thinking about an auto repair co-op and credit union. Also have a free foreign language translation service for help in courts, hospitals and social service agencies. The *Rural Tribune*, half of which is in Spanish, covers local Hillsboro news with a regular column by self-sufficiency farmer Glen Simmons and a swap section ("My rooster for your rabbit" and "Would like a woman to teach me guitar in trade for a hand-crocheted afghan"). I really enjoy reading it. Similar agencies in other parts of the country might want to order a sample copy for ideas. (LdeM)

Common Ground

Cross Roads Resource Center
2314 Elliot Ave. So.
Minneapolis, MN 55404

$4/yr., quarterly. This 64-page newsprint magazine is filled with information specific to the Twin Cities, most of which can apply anywhere. Hospital workers on unionization, high rise and industrial development, and a good, clear "People's Guide to Home Insulation" and "Alternative Energy and Who's Doing It." Back issues ($1 each) on Neighborhood History, Parks and Open Space, Community Control, Controlling Neighborhood Development, Parade of Neighborhoods, and Art for Our Sake. (LdeM)

***Community Ownership in New Towns and Old Cities*, Edward Kirshner and James Morey, 1975 from:**

Center for Community Economic Development
1878 Massachusetts Ave.
Cambridge, MA 02140

I really had trouble getting into this at first—it looked like it was going to be another socialistic tract about government ownership. I was wrong—it isn't, and it's good! A lot of really obvious stuff once you think about it—utilities are basically no-risk public monopolies. Public ones have a track record at least as good as investor-owned ones. In both cases the rate payers end up paying for the whole operation. So why should the profits go to outside investors rather than back into reducing costs for the community? They show specifically that if all the land, real estate development and utilities were owned by the community (with revenues subsidizing housing) then up to 100% of new housing would be within the reach of low and moderate income families. They lay out a lot of options and the benefits of each—for new and existing communities, for common mortgages, financing rental housing, leasing of greenbelt land for agriculture, community-owned industrial parks, businesses, utilities, cable TV. Returned profits reduce direct housing costs by 25-50%, depending on options chosen, and incomes required to afford new housing would drop from $18,000 to $7,800 in some cases. Well worth reading. (TB)

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COMMUNITY
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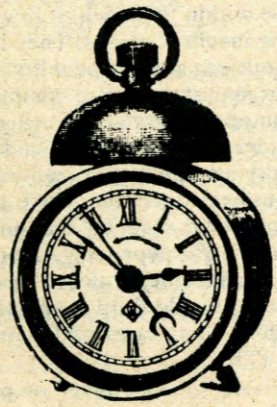
CDC News
Community Development Division
American Institute of Architects
1735 New York Ave., N.W.
Washington, DC 20036
Free. For the past eight years, community design centers have been providing free (usually) design services for neighborhood groups. Traditionally they have designed tot lots, remodeled drop-in centers and worked as advocates with citizens on neighborhood plans. More and more now they are getting into rehabilitation for energy conservation. The *CDC News* is a periodic update on their goings on. And I just got "Community Design Centers Profile: 1975-76" in the mail today—a complete listing and description of current CDCs. If you have anything to do with architecture/environmental design in the community, you ought to be on their mailing list. (LdeM)

ECOTOPIA

"Solar Water Heater Workshop," April 17, 1976, Mercer Island Alt. H.S., Seattle, Washington. For details contact:
Chris Peterson, Manager
Environmental Farm Program
ESD #110
1410 S. 200th St.
Seattle, WA 98148
206-242-9400
Ken Smith (Ecotope Group) and Lee Johnson (Ecotope Group, *RAIN* Magazine) will direct and instruct a hands-on (i.e. workgloves required) workshop in which 2 solar water heaters will be built. One of 11 sessions in the Central Washington State College course "Energy Efficiency in the Food System" (Envir. Studies 440); attendance at all eleven earns 4 college credits via CWSC Office of Continuing Education. (LJ)



Makara

Makara
Pacific Women's Graphic Arts Co-operative Assoc.
1011 Commercial Dr.
Vancouver, BC, Canada
$6/yr. Canada, $7.50 U.S. (6 issues). One of the most beautiful magazines I've ever seen—the photographs, drawings and layout are truly fine. Sometimes I get tired of both the glossy New York *Ms*, filled with make-up ads and the harsh polemics of radical women's things (is it liberated to sleep with men?). This softspoken new women's magazine strikes an appealing middle ground without seeming middle of the road—perhaps precisely because it is coming out of West Coast Canadian women. How could it miss? A wide variety of articles on women in prison, radical therapy and women's history, also children and adult fiction and photographic essays. Some of the writing is a bit weak, but then it's put out by artists. I have a feeling it will mature as they attract more talent. The spirit feels good. Highly recommended for all people. (Incidentally, anyone needing graphic help in any form would do well to look these women up!) (LdeM)

"Eastern Oregon CDC Solar Project," for details contact:
Dennis Naughton, Exec. Dir.
Eastern Ore. Community Dev. Council
801 Adams Ave.
La Grande, OR 97850
503-963-3186
EOCDC has received a Community Services Administration (CSA) grant to design, build and install 6 solar water heaters, 2 each in Wallowa, Union and Baker counties. A construction and installation manual will be produced to aid low-income citizens in the use of solar heaters and the project evaluated for continued, more widespread support. A good practical "do-it-yourself" orientation emphasizing local people, tools and materials. *RAIN* would like to hear about and cover similar efforts. (LJ)

"Original Log House Construction School," $20 course fee, $30 per couple, for pre-registration details, contact:
Skip Ellsworth
Bar E Ranch
Redmond, WA 98052
206-885-4972, after 7 p.m.
Slide-lecture, hands-on construction techniques, discussion session, potluck dinner. (LJ)

***Working Papers for a New Society*,**
123 Mt. Auburn St.
Cambridge, MA 02138
$10/yr., quarterly. Collections of often quite useful papers for putting together, as the title says, a new society. The Winter '76 issue has an excellent article on the conversion of the British Triumph motorcycle factory to a worker-owned co-op, the history and prospects for ad-free TV (see below), tax reforms, problems of big lumber companies and independent woodsmen in Maine, the effects of the recent socialist government in BC, and other good things. (TB)

***The Fragrant Garden*, Louise Wilder, 1932, $3.50 from:**
Dover Publications
180 Varick St.
New York, NY 10014
Ummm good! I've been looking for this kind of book for a long time. So many garden plants today are hybridized to be big, colorful and showy that we have forgotten how incredibly fine a garden can be that is designed for our noses! Daphne and cherry blossoms in Kyoto, wisteria and lilacs outside bedroom windows when we were growing up, the gentle fragrance of nicotinia in the evening, fresh mown fields of mint or alfalfa —we've traded a beautiful symphony of smells for auto exhausts and industrial effluents. This book gets into things I never dreamed of—sweet-leaved geraniums, herbs and grasses, night-scented flowers, shrubs and trees, orchards and berry patches, ferns, mushrooms, wild scents and much more. Our copy is going to get well used—this is a real breath of fresh air! (TB)

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Winter Tomatoes, Anyone?

Some good friends just down the road, Bill and Marsha Mackie of SUN Experimental Farms, have finished their solar aquaculture greenhouse. The story tells most of it. Bill used to teach in and was *the Energy Center at the Linfield Research Institute (Linfield College) when we first met . . . back in B.C. . . . before the energy crisis. They want to expand to some outside pools this coming summer and begin experimenting with algae and its uses, as well as other pond life-forms. After the story, there's a list of greenhouse resource people across the nation. If you write them, please send a SASE.* (LJ)

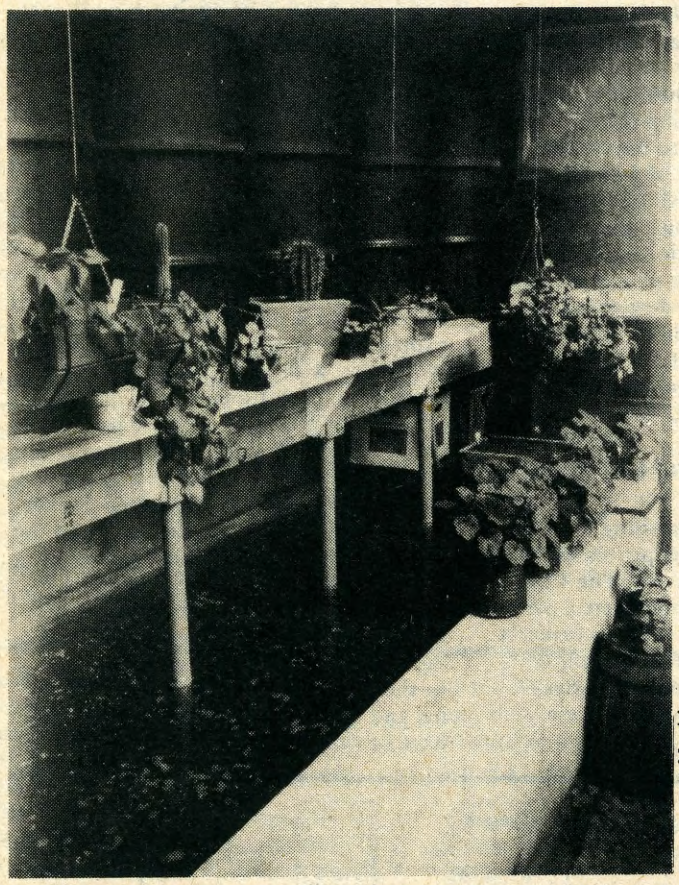

Photo: Bill Mackie

Inside the Mackie solar aquaculture greenhouse. Note water drum wall heat storage on left.

We started our greenhouse in the spring of 1975, worked on it slowly throughout the summer and had it completed enough to begin using in the fall. Although there are always modifications and improvements to be made, we are satisfied with its performance through the winter and are now convinced that Oregon's sun is strong enough to provide all the heat and light a greenhouse needs.

Our greenhouse is an 11' x 16' free-standing structure, partially sunk into the ground for insulation. It has glazing only on the south side. A fish tank extends the length of the north wall and above it are eight 55-gallon drums painted flat black and filled with water. Both the drums and the fish tank are used for heat storage.

Digging the hole proved to be the single most time-consuming job in the entire construction process. We dug it by hand, slightly larger than the finished greenhouse, about 14' x 18' x 2-1/2'. The dirt dug from the hole was bermed against the north wall of finished structure for added insulation.

A concrete foundation was poured the perimeter of the greenhouse and as a continuous slab under the fish tank. Then we began laying a 40" high concrete block wall all the way around and also 4' in from the north side to form the fish tank.

Drain tiles were laid on the un-concreted earth and we poured several inches of gravel for a floor. The drainage ditch empties into our garden, so whatever water we pour out onto the floor, including the rich algae bloom we siphon out of the fish tank, goes to water and nourish our garden.

One of the things we *didn't* do which we would do a second time is insulate between the fish tank and the earth. Hopefully this would elevate the water temperature to keep the greenhouse warmer during the winter, but primarily to lengthen the season for raising warm-water fish. As it is, we are adding a solar collector to boost the water temperature of the fish tank.

The north, east and west walls are regular framed-in walls with 3-1/2" of fiberglass insulation. We felt the extra insulated wall area was worth the decrease in solar radiation. Painting the greenhouse interior white would probably increase the solar radiation falling on the plants and at least partially compensate for the light loss.

The south wall is a double layer of 30 mil Kalwall fiberglass tilted at an angle of 45°. The space between the two layers, the width of a 2x4, holds an insulative batt for extra protection on cold nights.

It was not until February that we added the second layer of glazing, so the greenhouse went through the cold part of the winter without the benefit of its second layer of fiberglass *or* its insulating batt. A few nights the inside temperature dropped to 45°, colder than you really would like a greenhouse. Daytime temperatures, however, were generally up around 60° or 65°. Despite the cool nights, we lost no plants and are optimistic about our greenhouse's ability to hold heat with its second layer of glazing and its insulative batts in place.

At the present time we have about two dozen largemouth bass in the fish tank. We're anxious for the tank temperature to rise enough so we can put a pair of tilapia in. Hopefully, with the aid of a solar collector, we'll be able to extend the warm-water season long enough to harvest two or three crops of tilapia from our tank this summer.

For a copy of the greenhouse plans, send $2 and a stamped, self-addressed envelope to SUN Experimental Farms, 835 Fleishauer Lane, McMinnville, OR 97128. Or if you just want to write, we're always interested in what others are doing.

ECOTOPIA
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Goddard Social Ecology Summer Program
Box SE3
Goddard College
Plainfield, VT 05667
This summer's program will run from June 7 through August 27, based at Gate Farm—a beautiful 40-acre learning and research center adjacent to Goddard's campus. The program—with excellent facilities for food production, solar, wind and methane research, aquaculture, pollution testing and experimentation with alternative energy systems—stresses social and cultural as well as technological alternatives to our present systems. The staff and visiting lecturers, including Murray Bookchin, director of the program, Dan Chodorkoff, Scott Nielsen, Milt Kotler, Sam Love, Robert Reines, Karl Hess, Steve Baer, Nancy Todd, Eugene Eccli, Wilson Clark, John Todd, Rayna Reiter, Charles Woodard, James Nolfi, Gil Friend, and Hans Meyer, will present a broad spectrum of courses and practical workshops ranging from Eastern philosophy to building compost privys. Cost of the program, probably the best single source of up-to-date developments in these areas on the East Coast, is $1985, including room, board and tuition. Write for detailed information and sneak in to some of the mini-courses if you can't afford the whole program! (TB)

ENERGY

***A Position Paper on Energy Conservation*, California Council, American Institute of Architects**
American Institute of Architects
1736 Stockton St.
San Francisco, CA 94133
Many states have been considering regulation of energy use in buildings. This CCAIA paper, like similar recent statements by the national AIA, gives an excellent evaluation and perspective on much proposed legislation and lays out broader and more comprehensive guidelines for energy conservation. (TB)

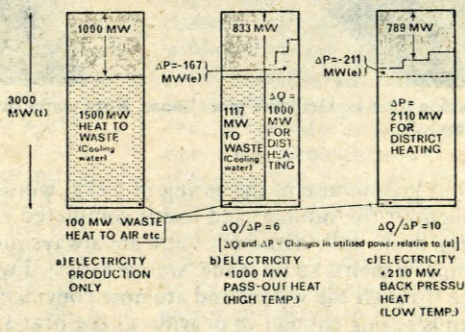
Under a Puerto Rican law which went into effect in July 1974, the government pays for fuel cost increases for anyone using less than 425 kwh of electricity per month. 74% (736,000) of residential customers are keeping their use of electricity low enough to meet the subsidy standards at a cost of $48 million to the government. Much of the success of the program is attributed to the island's energy conservation campaign, which includes teaching people to read their meters to be sure they are staying within the limits. For more information contact Nydia Verge, Head, Consumer Relations Office, Puerto Rico Water Resources Authority, GPO Box 4267, San Juan PR 00936.
Source: Alternative Sources of Energy

U.S. oil fields are replenishing their supplies through natural processes at the rate of 10 barrels a day. The U.S. uses more than 17 million barrels per day. This is to say that we are currently using as much oil in 3 hours as oil deposits have produced in 5 centuries. (From the *Minneapolis Tribune* via *Alternative Sources of Energy*)

Mortite, $1.95 for 90 ft., from
Mortell Company
Kankakee, IL 60901
or from your hardware store
I know it's the wrong season for this, but I'm tired of getting chewed out for the eco-heresy of not covering our windows with sleezy plastic that makes the world look like a hangover. And no one ever seems to have heard of this neat stuff, though we always used it on our windows (in addition to storm windows) when I was growing up. Mortite is a modeling-clay-like caulking that comes like a long grey earthworm wound into a coil. You just unroll it and squish it into the cracks around your windows. Doesn't give the dead air space storm windows are supposed to, but it really takes care of infiltration—which is the biggest heat loss in a house. In the spring, just roll it up again for next year. Good stuff. (TB)

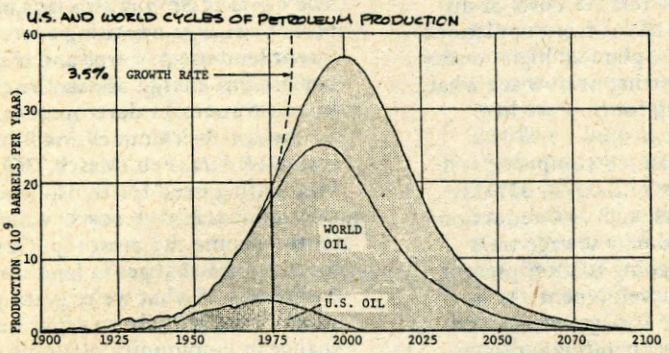
Energy Manual for Parks: A Handbook for Interpreters and Naturalists
Park Project on Energy Interpretation
National Recreation and Park Assoc.
1601 North Kent St.
Arlington, VA 22209
This manual was prepared along with an *Energy Activity Guide* (see *RAIN*, Feb./March '76) for use by naturalists to explain our energy situation to people. Well done, with clear graphics and gently stated explanations of how natural systems are powered, why we use so much energy, how to cut down and why even if more energy were to become available we would soon have to change our game. It only lacks strong ties to the parks themselves, what they represent, and why people are there. I would personally rather have the stars telling me what is good than an interpreter reminding me of the problems we've brought to the parks in our heads, but this manual and the nicely graphic *Guide* should have broader use than in the parks. (TB)

***District Heating Development Work in Sweden*, Peter Margen, 1975, Report AE-VS-159 from:**
Studsvik AB Atomenergi, Sweden
S-611-01 Nykoping 1
Sweden
Two-thirds of the energy in our fossil fuels that are used to generate electricity ends up as wasted heat energy. At least *we* waste it. Sweden has for years been using that "waste" heat for space heating in the districts surrounding the electrical generating plants, resulting in beneficial use of 70-80% of the energy in the fuel rather than the 20-30% that we get. Makes sense. This report is outdated in that it refers to use with nuclear as well as fossil fuel thermal plants and was produced before Sweden's recent decision to abandon nuclear power in favor of energy conservation, but it contains reports on recent studies on district heating. (TB)



Comparison of energy efficiency of electrical production alone and electrical production combined with district heating. Show this chart to anyone who still believes we can't do better by more efficient energy use than by using up more energy.

Cost of Energy Slaves

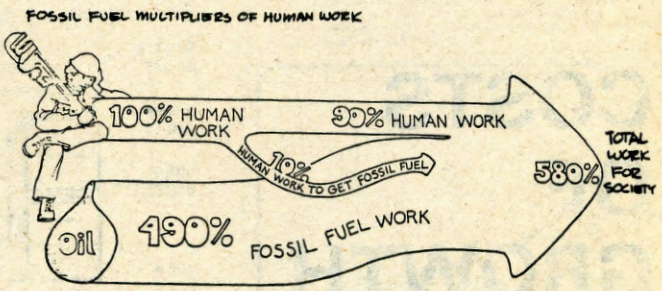


A lot of our present wealth has come from the great amount of work done for us by fossil fuels, which until recently have needed very little of our own effort to obtain. For the work we've spent obtaining fossil fuels, we've been getting back fifty times as much work done for us by those ancient fossils. When we figure that we spend about ten percent of our own work to obtain such energy, we realize that fossil fuels have had the effect of temporarily increasing our "work force" by almost SIX TIMES!

Being able to do so much work cheap—with so little expenditure of our own effort—has had another effect . . . the massive exploitation of other people who don't have cheap energy slaves to work for them. They have had to compete with their own labor against the cheap work of our fossil fuels. As a result, they only get paid the pittance we have to pay for fossil fuels. When we combine this human exploitation with the increased work those fuels do for us directly and our rapid consumption of material resources on a global basis, we should seriously wonder why we aren't richer than we seem!

If we look further, however, and compare how fast we are using up our fossil fuels to how fast the rest of the world is using up theirs, we might have second thoughts about our extravagant lifestyle and spendthrift use of energy. We have been using up our petroleum and coal resources much faster than the rest of the world, and if we keep on as we are we will exhaust them while other countries still have cheap and plentiful energy slaves.

We have enjoyed a powerful worldwide economic and political dominance built upon our energy base and should be wary of similar future dominance by others. It would seem wise to save some of our wealth and the energy it is based on for our future rather than to see how rapidly we can use it up. Reducing our demands now and becoming less reliant upon any use of energy saved from the distant past can ensure us a more positive future. In addition, improving the energetics of our production processes and foreign trade, conversion to income energy use, and realistic appraisal of evolving global political and economic balances are necessary to protect ourselves from costly economic and political errors. (TB)



***The Potential for Energy Savings Through Reductions in Hot Water Consumption*, by John George Muller, April 1975, 43 pp., FEA/D-75/453, contact:**

Federal Energy Administration
Publications Distribution Office
Office of Communications & Public Affairs
Washington, DC 20461
202-964-3538

An excellent report! Contains an outline and summary which estimate that the U.S. uses 1.1 million barrels per day of oil equivalent but that we could save 560,000 BPD without adverse effect on comfort, health or life style. Excellent and comprehensive references specific to dishwashing, laundering and details on all calculations. Mr. Muller, formerly at the FEA Energy Conservation Office and the *Energy Reporter*, has moved to emergency energy planning. Does he know something we don't? (LJ)

***A Planner's Handbook on Energy*, Robert Pozzo and James Clark, 1976, from:**

State Energy Office
Dept. of Administration
108 Collins Bldg.
Tallahassee, FL 32304

Good coverage of information useful for planners in evaluating future energy policy options and low energy housing for hot humid climates. Useful outside of these areas for people to see how specific regional energy uses, problems and solutions are. When we see passive systems for New Mexico's high daily temperature fluctuations, shading for Florida, snow reflective systems for Minnesota, or wood heat for Vermont, we tend to think their problems must be easier to solve than our own. They aren't—they're just different. A consumer's handbook, "A Floridian's Guide to Solar Energy," is in progress. (TB)

***Hawaii Energy Newsletter*, free from:**

Eugene Grabbe
Dept. of Planning & Econ. Dev.
P.O. Box 2359
Honolulu, HI 96804

Part of an energy awareness drive, which also includes a pamphlet, a report on alternative energy sources for Hawaii, the newsletter is a special issue on energy . (LJ) Continued on page 18

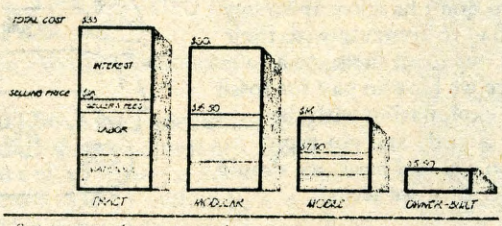
1 DISECONOMIES OF SCALE + 2 LAND USE COSTS + 3 ENERGY COSTS +

Recent analysis of the actual performance of community services, industrial production and other kinds of services has shown that major diseconomies of scale are frequent and that smaller-scale operation of almost everything would be more efficient as well as socially preferable and more adaptable to future resource conditions. These studies, such as Barry Stein's study of industrial performance, "*Size, Efficiency and Community Enterprise*" (*RAIN*, Jan. '76) and Richard Bradley's study of the cost of community services for different-sized cities, *The Costs of Urban Growth* (*RAIN*, Jan. '76) give soundly documented support for community decisions to control the scale of their city, industry and services.

Documentation of relative costs of different land use patterns from unplanned suburban sprawl to planned high-density developments is letting us now see what we're really paying for how we live. *The Costs of Sprawl* shows 44% less capital cost for planned compact developments, 43% less land costs, 63% savings in utility costs, and 44% reduction in energy use. And new sewage treatment options are going to alter present controls on land development. As increasing land value for agriculture and the future costs of operating our communities are added in, more compact communities seem a blessing, and our willingness to allow development based only on a developer's immediate interests is most unlikely to continue.

The Costs of Sprawl also lays out comparative energy operating costs for different land use patterns and shows that our present energy use can be cut in half by more compact development. Studies by the Swedish Council for Building Research (*RAIN*, Feb./March '76) agree. Eliminating need for transportation further reduces energy costs—which promise to become the most significant factor in future changes in land use patterns. Awareness of what we're getting ourselves in for is likely to cause basic change in community planning goals in the very near future. (see p. 12)

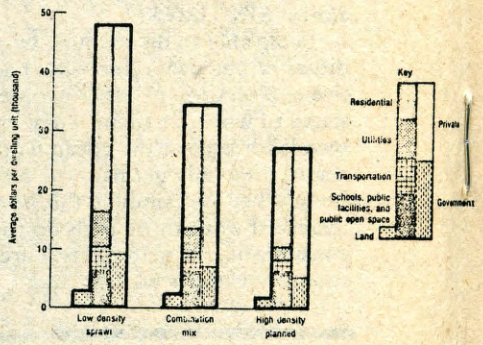
COSTS OF GROWTH



Cost per square foot comparing the least expensive of each type of low-cost housing with an owner-built house of comparable caliber. Interest is based on a 20 year loan at 7%. Relative figures are more important than absolute values which will change with time and location.

Source: *The Owner-Builder and the Code*

Community cost analysis: capital costs



Source: *The Costs of Sprawl: Executive Summary* p. 3.

1 BUILDING SIMPLY

In the wealthiest nation in the world we can't afford housing simply because we go about it wrong. To begin with, we demand a palace for all our fantasies rather than a place to love and to shelter us. We then seem unperturbed about the prospect of paying a king's ransom for someone else to build it for us rather than build our own skills and confidence. We're then willing to pay forever so we can have it all NOW. Doing it ourselves and cutting out the middlemen has been shown to save up to 80% on the cost of similar houses, while building our needs rather than our fantasies can reduce the costs of the structure itself to a shadow of what we normally pay. See *The Owner-Builder and THE CODE* (*RAIN*, Feb./March '76) for more details.

+

2 USING LAND WISELY

A significant part of the cost of new housing (whether paid in the price of the housing or through taxes) is the cost of land, improvement, installation of streets, utilities, and community services. *The Costs of Sprawl*, like previous studies in Finland and the Netherlands, documents the capital costs, operating costs, energy costs as well as social and environmental costs of our present urban patterns of supplying those housing development services. The studies show that where more compact and planned patterns of development have taken place such costs are reduced by up to 50%, while providing a better quality social and physical environment.

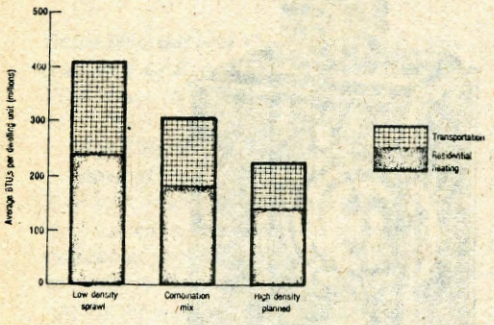
+ 4 COSTS OF GROWTH + 5 GROWTH CONTROL POWERS = NEW KINDS OF CITIES

The bigger a city is, the more it costs per person to operate, and the faster a city grows, the greater its economic, social and environmental costs. Bradley's *Cost of Urban Growth* lays it out in hard enough numbers to please anyone. The only thing lacking is *who* profits—but that's obvious. Enough hard data is now available for any community to know what are responsible directions to take. (see *RAIN*, Jan. '76)

The recent Supreme Court decision to review the Petaluma, California, growth control case ensures the power of communities to develop and enforce responsible growth control measures. Such measures can't be exclusionary or discriminatory, which gives added impetus for communities to develop balanced housing and employment for people with all levels of income. Finkler and Peterson's *Non-Growth Planning Strategies* gives an excellent overview of economic effects of growth control, strategies for non-growth planning, case studies, and what can be done to control growth. (see p. 12)

The passive role of our communities towards development and acceptance of the assertions of those who profit from growth has assured that the policies that exist reflect the prevailing power distribution. In growing areas in particular, that power lies with those few who gain from growth. That passive role of communities is ending as we more fully understand what we're paying for what we get and what better options and powers we have available to us, and strikingly different land use and building patterns will emerge from exercise of those options and powers.

Community cost analysis: annual energy consumption

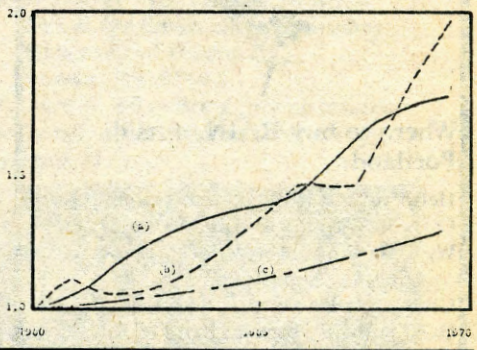


Source: *The Costs of Sprawl: Executive Summary*, p. 5.

Required Average Incomes Under Profit-Oriented and Community-Owned Development

A.	Profit-oriented	
	Investor holds for rent	$18,000
	Investor sells to residents	15,000
B.	Community-owned real estate and utilities	
	Individual mortgages	11,500
	Group mortgage	11,000
C.	Phased tax-shelter sale plus B	
	Individual mortgages	10,500
	Group mortgage	10,000
D.	Partial ownership of enterprises and agricultural sector plus B (rural expanded town)	
	Individual mortgages	9,200
	Group mortgage	8,800
E.	Phased tax-shelter sale plus D (rural expanded town)	
	Individual mortgages	8,200
	Group mortgage	7,800

Boulder, Colorado, 1960-70. (a) City of Boulder population; (b) City of Boulder per capita costs at constant dollars; (c) Colorado personal income per capita at constant dollars.



+ 3 SHARING PROFITS

In addition to the direct costs of community services caused by land use patterns, the decisions as to who profits from providing those services creates or avoids major costs to the residents of the community. If the profits taken out of the community by developers, utility companies, finance companies and the like are kept in the community and used to lessen the costs of housing, they result in major reductions (up to 50%) in the cost of housing itself and in the incomes necessary to afford new housing. *Community Ownership in New Towns and Old Cities* documents the savings possible in a whole range of community-owned developments from land to utilities. (see p. 12)

= AFFORDABLE HOUSING

The magnitude of savings possible through these three examples alone makes it pretty clear that we ought to be able to reduce housing costs by 75-90% without sacrificing quality—merely by changing the patterns we use to provide new housing. With simpler sewage systems, energy-efficient construction and less reliance on the automobile, these major reductions in economic and energy costs should be unquestionably assured.

Portland RAIN outlets:

3rd Ave. Smokeshop
4th Ave. Smokeshop
5th Ave. News
Anchor Tools & Wood Stoves
B. Dalton
Book Cellar
Brian Thomas Books
The Catbird Seat
Curious Dinosaur
J.K. Gills, downtown
House of Titles
Jean Hoops
King Harvest
Looking Glass Book Store
Lovejoy Market
Milk & Honey Community Market
N.E. Community Market
The Nor'wester Bookshop
OMSI Bookstore
Portland State Bookstore
Powell's Books
Reed College Book Store
Rich's Cigar Store
Skidmore Village Children's Books
Varsity Book Exchange

Where to buy RAIN, outside Portland:

Heliotrope Natural Foods, Salem, OR
Canyon Way Bookstore, Newport, OR
Wy-East Community Food, Hood River, OR
Grassroots Bookstore, Corvallis, OR
Omphalos Bibliopole, Bend, OR
Second Hand Book Man, Eugene, OR
Son of Koobdooga, Eugene, OR
Aardvark Books & Arts, Bellingham, WA
The Coniunctio, Tonasket, WA
Red & Black Books Collective, Seattle, WA
Coalesce Bookstore, Morro Bay, CA
Whole Earth Truck Store, Menlo Park, CA
Whole Earth Access Co., Berkeley, CA
Market Bookstore, Covelo, CA
Real-Live Bookstore, Missoula, MT
Natural Magic, Galveston, TX
New Pioneer Cooperative Society, Iowa City, IA
Environmental Energies, Detroit, MI
Left Bank Books, St. Louis, MO

ENERGY
continued from page 15

***Government R&D Report*, 12 pp., twice monthly, $80 per year from:**
William G. Margetts, Publisher
Gov't R&D Report
MIT Station, P.O. Box 284
Cambridge, MA 02139
March 15, 1976 (vol. 5, no. 6) issue contained comprehensive and perceptive articles on 1) support and opposition to continued breeder reactor R&D funding, 2) debate between Congress and the White House on conservation, solar, wind, geothermal development, which the citizens' representatives favor, vs. more nuclear reactors, deregulation of oil and gas, which the Administration favors, and 3) politics of SERI, the Solar Energy Research Institute. Single sample copies available free. (LJ)

Alternative Sources of Energy
Route 2, Box 90A
Milaca, MN 56353
$5/yr., quarterly. Long the only source of grass roots development in use of renewable energy, ASE is more and more solid and useful. Now produced quarterly, typeset and with more practical information. Latest issue had good articles on "Icy-Ball" refrigerators, ambient air food coolers, and excellent nuts and bolts column on wind power by Martin Jopp and a supplement to their earlier *Spectrum* catalogue of ASE hardware (see *RAIN*, Vol. 1, No. 8, p. 11). (TB)

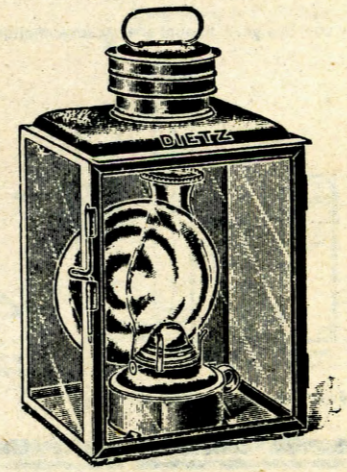
***Comparison of Energy Consumption between West Germany and the United States*, by Stanford Research Institute (SRI) for FEA, NTIS number PB 245-652-AS, $5.25 for full report from:**
National Technical Information Service
Springfield, VA 22151
or, a limited number of free summaries are available from:

FEA
Room 6438
Washington, DC 20461

***Insulation Reporter*, quarterly newsletter free from:**
National Mineral Wool Insulation Assoc.
382 Springfield Ave.
Summit, NJ 07901
Contains info on developments in home insulation and use, gas and electric-utility energy-conservation programs; gov't studies, energy legislation and conservation effort. (LJ)

West Germans use only 2/3 as much energy as Americans: 1/4 the fuel in transportation, 1/2 the energy in home heating, 1/4 for other residential uses such as appliances and hot water heating. The U.S. uses 40% more energy per unit of production than Germany. According to the FEA, "the large disparity in energy uses between these economically similar countries suggests it is possible for the U.S. to substantially reduce the ratio of energy use to national income, without cutting living standards or economic growth." See "Waste Not, Watt Not," Feb./March '76 *RAIN*, for further reading. (LJ)

ERDA Speakers Bureau, contact:
Office of Public Affairs
ERDA
20 Massachusetts Ave., N.W.
Washington, DC 20545
202-376-4076 or -4066
ERDA can provide qualified speakers for a variety of forums on subjects ranging from wind energy and fuels from biomass to nuclear fusion, energy conservation and solar thermal-electric power. Slides, films and publications can supplement presentations. (LJ)



***Solar Collector Manufacturing Activity*, compiled by the Office of Data, FEA, every 6 months, free from:**
National Energy Information Center
Federal Energy Administration
Washington, DC
Contains number of manufacturers, their addresses, phones; sq. footage of solar panels produced from Jan.-June and July-Dec. of each year; analysis of number of bbls. of oil/day displaced by use of solar collectors in the U.S. Usually has most up-to-date list of manufacturers and hence useful to architect, developer, contractor, homeowner, considering the use of solar heating and cooling. (LJ)

***Solar Radiation Reception, Probabilities, and Areal Distribution in the North Central Region*, North Central Regional Research Publication 225—Technical Bulletin 300-1975, 54 pp., limited copies available, write:**

Agricultural Experiment Station
Univ. of Minnesota
St. Paul, MN

Very useful to anyone needing solar radiation data for North Dakota, South Dakota, Nebraska, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Illinois, Indiana, Michigan and Ohio. Extremely comprehensive and accurate presentation. (LJ)

There are two government publications which should be on the shelves of every solar engineer and architect in America. They are:

***Development of Proposed Standards for Testing Solar Collectors and Thermal Storage Devices*, by NBS (National Bureau of Standards), February 1976, 265 pp., available from:**

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
SD Cat. No. C13.46:899

and

***Solar Heating and Cooling of Buildings: Methods of Economic Evaluation*, by NBS, May 1975, 47 pp., $3.75 from**

NTIS
Nat'l Technical Information Service
Springfield, VA 22151

The first reviews different techniques that are or could be used for testing collectors/storage and then outlines a recommended test method, including apparatus and instrumentation, for both components. This document is very useful to anyone, even a layman, working on his own "new" collector design because the theoretical equations, backed by an outstanding 163 reference bibliography, will aid in refining a design toward that goal of less $ cost/BTU output.

The second item explains and illustrates with simple, but realistic examples the use of life-cycle cost analysis and benefit cost analysis to evaluate and compare the economic efficiency of solar and conventional energy systems. Since the equations are difficult for anyone without experience in the field of engineering economics (although programmable on a pocket calculator), their recommendation that a consumer-oriented handbook be produced is an excellent idea. (LJ)

***Sunlight to Electricity*, Joseph A. Merrigan, 163 pp., $12.95 from:**

The MIT Press
28 Carleton St.
Cambridge, MA 02142

The author thinks the solar cell business will be a multi-billion dollar industry by 2000. He explains how this will occur, starting with a description of photovoltaic conversion principles. Then technological forecasts are presented in the context of price reduction and increased demand. Useful as a concise introduction to the technically-oriented business person. (LJ)

***Illustrated Solar Energy Guide of Flat-Plate Collectors for Home Application*, $3.00 from:**

EI&I Associates
P.O. Box 37
Newbury Park, CA 91320

One of the least expensive, yet practically useful, laymen-oriented introductions to the basic theory and installation of solar hot water heaters. It includes clear system diagrams as the various installation options are explained as well as concisely defining and describing the advantages and disadvantages of direct use vs. heat exchange and natural thermosiphon vs. forced circulation by pumping. A very complete list of manufacturers is appended for non-"do-it-yourselfers." You get your money's worth. (LJ)

"Solar Heating & Cooling: A National Forum," Dec. 6-8, 1976, Ft. Lauderdale, FL. For details write:

SH&C Forum
Clean Energy Research Inst.
Univ. of Miami
P.O. Box 248294
Coral Gables, FL 33124

Submit prospective papers with title and 400-word abstract by April 15, 1976, to Dr. T. Nejat Veziroglu at above address. Authors selected by May 15, final manuscripts due by Oct. 15. (LJ)

***Solar Water Heating in South Africa*, CSIR Research Report 248, available from:**

Will Cawood, Director
Solar Water Heating Program
National Building Research Institute
Pretoria, South Africa

Reports on efforts to find a collector able to withstand the deteriorating effects of South Africa's intense and ultraviolet-rich sunshine. Part of a national campaign to install solar water heaters in residences. (LJ)

***Bread Box Water Heater Plans*, $2.50 from:**

Zomeworks
Box 712
Albuquerque, NM 87103
505-242-5354

A simple and effective design, one of which heats shower water at the Farallones Institute Rural Site in Occidental, California. One or more ordinary 30-gal. hot water tanks (recycled) are stripped of insulation, painted flat black and placed in a glass-covered insulated box with insulated reflecting doors. The sun shines through the glass onto the tank and also bounces off the reflecting doors onto the tank. The doors are open during the day to receive the sun and closed at night to conserve heat. Zomeworks strikes again! (LJ)

***A Citizen's Handbook on Solar Energy*, 56 pp., $1.50 for individuals, $8 for institutions and businesses from:**

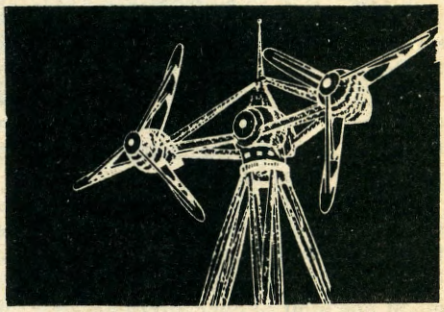
Public Interest Research Group
2000 P St., N.W., Suite 711
Washington, DC

Introduction to the economic and technical feasibility of solar energy. Acquaints the reader with current areas of solar research. Lists solar experts and information sources. (LJ)

***A Survey of the Residential Uses of Solar Energy, No. 114*, $2.50 from:**

Center for Environmental Studies
University of Oregon
Eugene, OR 97402

Reports on 80 existing private residences which utilize various solar energy systems. (LJ)



***Wind Power Climatology of the U.S., SAND 74-0438*, 153 pp., $6.75, from:**

NTIS
U.S. Dept. of Commerce
Springfield, VA 22161

All "suitable data" in the National Climatic Center archives, for 758 stations, for monthly, seasonal and annual average. Results are displayed in maps designed to show geographic regions most suitable for windpower exploitation. (LJ)

Continued on page 22

Cold Spring

photos by Hank Patton

Bridgehouse Voluntary School

High on the Columbia Gorge an 80-acre work/study agricultural community is in the works—The Cold Spring School for Elementary Agriculture and the Performing Arts. Designed as a residential community which would meet the educational needs of its children, its living systems curriculum will teach the ways and means of renewable resources with a labor-intensive focus on the planning, distribution and study of efficient food usage.

Classes will include problems and solutions in world hunger, techniques in sustained renewable land use and production increase, apiculture, stone sledge navigation, tree-food crops and tree production (seed, nursery, breeding), greenhouse construction and management, and water development and irrigation. Early emphasis will be placed on construction of a pilot project in extracting protein from broad-leaf sources and separating the toxins and crude fibre along the lines developed by Dr. Romanconte, Baker, Oregon.

The 10-year-plan is to take the energy of kids involved in cooperative agricultural work/study and produce a surplus of food which could then be distributed to cooperating schools in areas beset by hunger.

The program's developmental history began in 1973 at creator Hank Patton's urban homestead on Portland's N.E. fringe. The Bridgehouse Voluntary School of the Homesteading Arts offered a square-meal exchange to anyone willing to invest one hour of concentrated effort. One hour earned a square meal in Bridgehouse's communal kitchen; 2 hours earned a night's shelter; 100 hours, a 10-speed bike. Apples, honey, produce and tools were exchanged as well. Kids who refused to attend public school regularly earned their square meal exchanges at Bridgehouse. Dropouts dropped in, logging 5000 exchange hours in the first nine months. Hank financed the exchange system himself until the YMCA provided funds for exchange items earned in beekeeping, gardening and greenhouse projects by their summer program participants.

That fall, Sacajawea Elementary Principal Joe Williams invited Hank to bring his energy currency program into the public school system. There Hank developed a living systems resource center complete with microscopes, algal cultures, chickens, an aquaculture tank. The conscious use of waste materials pervades the room: geometric shapes constructed from recycled industrial waste, an aquaculture tank that knew a previous life in a brewery, a garbage can composter.

Philosophy gears the program toward finding the very tangible balance between the needs of the child and those of society. Given the basic premise that all children are curious and will naturally probe, push, question, think, what remains is merely to encourage him/her to invest the energy in a productive manner. Energy invested in living systems bears fruit.

180 enthusiastic first-sixth graders dispense with required curriculum at twice the normal rate in order to work on their chosen projects. A basic resource center agreement holds that no one works on a project that he or she does not enjoy. Commitments to subject area are made slowly and carefully, for once made, the project must be completed before any other work can be undertaken. The heart of each child's study is his field book, an individually created loose leaf book bound with Chicago screws, containing observation, documentation, transcriptions, drawings, collected materials and periodic handouts from the staff. (Latest insert, "Fleshy Fungi," will be available from Sacajawea at an as-yet-undecided price.)

Quantum econics (ecology/economics), the energy currency of the program, is an attempt to create a model economy which promotes the kinds of habits, attitudes and usership which enables humankind to pass resources on to succeeding generations increased in value. *One Q = an hour of concentrated effort invested in increasing the fruitfulness of the earth.* It's an elementary unit of human enterprise, an expression of worth which stresses the interrelatedness of man with nature in an economic way. Thus it is an attempt at a real growth economy whose growth is confined to systems that are alive. The Q may be exchanged for young plants, living fish specimens, more time in the resource center or a field trip. Seven concentrated hours (7Q) completes a project earning one full school day in the field, exploring the student's research topic. The 14 subject areas include: birds, trees, fresh water, insects, the farm, weather, and a natural information service. Exercise in the basic skills becomes an ongoing process, as kids must read their sometimes technical transcriptions, learn unfamiliar vocabulary and compute mathematical records of their research.

Demonstrated responsibility earns increased responsibility. Students learn that time invested in living systems tends to create more time, food and resources. Presently each of the 180 students at Sacajawea is slated for a half-hour per week in the resource center, which is conditional upon completion of all assignments in the regular classroom. However, as efficiency increases and Qs accumulate more rapidly, some students earn as much as 1-1/2 hours per day in the center.

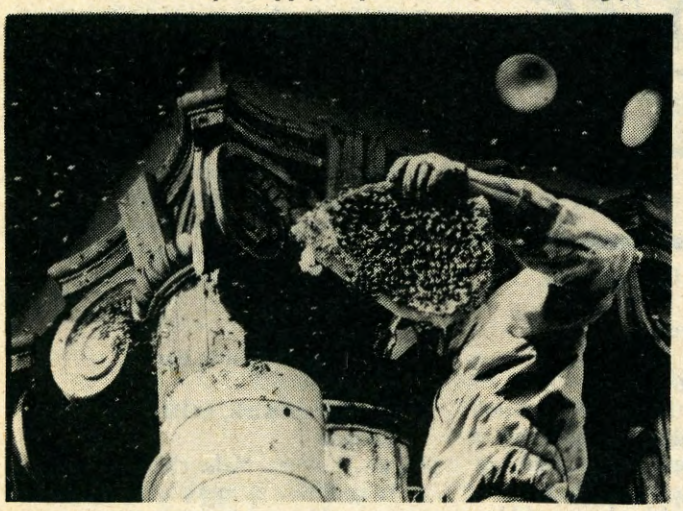
Next year's plans indicate an expansion of the Sacajawea program. Through salvage of Portland's classic Lord & Burham bent glass greenhouse, the living systems of the resource center will move into a more dynamic space. Funds will come from Portland Public Schools, Program Change Objective (PCO) mechanism, with construction to begin in June, contingent upon the school establishment's decision. Students will gain the opportunity to become physically involved in actual food production and potential marketing through the quantum currency. The Cold Spring facility will also be available to Sacajawea students two days each week for field study.

Thirty tillable acres and the lush richness of Columbia watershed provide an ideal living laboratory.

Meanwhile, back at the farm, efforts are underway to further develop the school's 80-acre production farm and open the Crest Trail Inn as a school-managed restaurant and study facility in food-related problems.

Program engineer and mycologist David Yett, "The Trash King," president of Levelle and Yet, Inc., Western Oregon's largest sanitary demolition dryfill, is piloting a developmental plan for a methanol plant. A 400-foot head makes for a strong hydrological power and water system. Dams, pipes, turbines and generators are also under David's jurisdiction, with completion scheduled for late summer/early fall. Like all Cold Spring projects, this will be a labor-intensive effort. While David's landfill operation affords access to heavy earth-moving equipment, it will be used only for removing precious topsoil from the pond site which can then be transferred to productive use in the gardens. In the near future David will sell his business interests in order to make a full-time commitment to Cold Spring.

The Crest Trail Inn, nestled snugly on the shore of the Columbia, provides a study facility for food-related problems. As a student-run, school-managed, natural foods restaurant utilizing fruit and produce from the farm, the Inn will offer trail foods, fresh and smoked fish, rattlesnake jerky (oh, yum!), and eventually specialize in cheeses, homemade baked goods and elderberry mead. The Inn is presently open by appointment only, with expectations of being fully underway by early summer. Resident gardener Sandy Hepler assures us that there will be an ample supply of produce for the coming year.



Beehive rescue from extermination

As career opportunities in renewable use have barely begun to be tapped, Cold Spring will be a model for development of this kind. Apiculture has been an integral link in the development of quantum econics, both as an example of living system efficiency and as a renewable source of income. Cold Spring Project has direct responsibility for 50 hives and another 50 tended cooperatively with an elderly Gorge resident, thus providing pollination services, honey and observation hives. In addition, two thousand chestnut seedlings planted this winter should be able to be marketed within three years.

A fine example of efficient use of industrial waste is the Big Eric Tree Skinner. A ten-pound, two-foot long planer mill blade has to be reground into a draw shave blade of exceptional quality and strength. (Available for $20 from The Cold Spring Experiment, Box 186, Underwood, WA 98651.)

As a live-in facility, students, faculty and their families will share in the responsibilities of the work/study community. The quantum econics (1Q = 1 square meal) will carry through all life support systems of the farm. Residents will earn their residence privileges, including tool access and food, by contributing four hours of concentrated work/study per day in addition to a reasonable share in the financial reality of land payments. Space will be available for individual homes, laboratory/workshops, library, music studio and theater, tool shed barns, goatshed, sauna, compost privies, and the sundry trappings of a work/study farm community, as determined by its needs. The performing arts sector will need the least structure, and its growth will therefore be a function of the individuals involved and will evolve accordingly.

Paul Libby program godfather.

"It is the hope of this farm to increase the fruitfulness of the earth; to create work/study opportunities for children in systems that are alive; to give experience in sustained-yield land use and food production, and to make education responsive to the world food crisis."

Perhaps the most disruptive factor in the developmental stages of an intentional community is the talented, well-meaning participant who wishes to alter the direction or structure of the community to fulfill his personal ideals. The Cold Spring Project is perhaps the most thoroughly planned and broadly-scoped project I have yet encountered. If you have skills in stone masonry, beekeeping, organic gardening or the elementary manual arts and are in agreement with the Cold Spring intent, please contact: Hank Patton, Sacajawea Elementary School, 4800 N.E. 74th, Portland, OR.

Summer sessions will include three 3-week work intensives of 7 persons each. $100 per session.

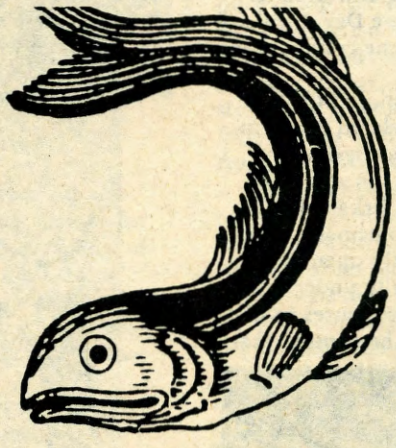
Nancy Lee

WIND ENERGY
continued from page 19

"Wind-Electric Generator Auction," for details contact:
Earthmind
P.O. Box 276
Acton, CA 93510
10 "Winchargers" are being sold on a sealed bid basis by this non-profit organization to support its new research center and to get more wind generators into use. Bids may be made anywhere from a minimum of $300 to a maximum of $2100, depending on what machine you bid on. Closing date on the 1st round of bids is April 15, but unsold items will be up for sale again. Send a stamped, business-size envelope requesting the "bid sheet." (LJ)

"Advanced & Innovative Wind Energy Concepts" RFP, organizations desiring to produce a study, write:
US-ERDA
Headquarters Procurement Operations Office
2400 M St., N.W.
Washington, DC 20545
Aimed at stimulating the investigation of wind energy concepts which might provide a significant improvement in performance per unit cost (or other factors) over more conventional wind energy systems. Multiple awards are planned. (LJ)

Environment 76 Committee
The Colorado Central Chapter
American Institute of Architects
231 Milwaukee St.
Denver, CO 80206
Their competition to solicit creative ideas for the community drew over 400 entries from all conceivable age levels and backgrounds. Volunteer architects helped the 38 winners prepare their ideas for an exhibit at the Denver Art Museum. Looks like a good time was had by all. Plans for community parks, super graphics for factories, a penny scale that plays "Lili Marlene" and many more . . . now available in a catalogue from the address above. Also a *Colorado Centennial Coloring Book* by Joseph Crea (with brown pages so a white crayon shows!). Sorry, no prices were indicated in my copies—write for details. (LdeM)



ENVIRONMENT

***Acclimatization*, Steve Van Matre, 1972, $3.95 from:**
American Camping Association
Brandford Woods
Martinsville, IN 46151
If you're an environmental ed teacher, a camp counselor or naturalist, read this book or *National Geographic*, April 1974, and then attend Van Matre's workshops. It's about how crawling around in the mud and sniffing leaves can help get kids in touch with nature. I saw and felt it work wonders in Minnesota on squeamish city kids.

The Portland workshop is to be held at the Menucha Conference Center, May 14-16. For further information about this session and future ones in other regions, contact: Jim Wells, Regional ACC Coordinator, 39 S.W. Brugger St., Portland, OR 97219. (LdeM)

HEALTH

***Man Adapting*, Rene Dubos, 1965, $4.95 from:**
Yale University Press
92A Yale Station
New Haven, CT 06520
If I were to point to the best single book I know to give an understanding of what health means and how fundamentally to change our attitudes and health-related practices to regain health, this would be it. It doesn't spell out a structure for medical schools or how to do first aid, but once you've read Dubos, those things will fall into place when you get to them. It isn't as easy reading as some of his other books, but has the most meat in it . . . between the lines as well as in them. Call it ecology or call it health, or don't bother to call it—it's merely being aware of how things relate. (TB)

***A Bibliography of Chinese Sources on Medicine and Public Health in the People's Republic of China: 1960-1970*, U.S. Dept. of Health, Education and Welfare Publication No. 73-439 (NIH), $5.55 from:**
U.S. Government Printing Office
Washington, DC 20402
This has been hiding on our shelves since I don't know when. Seems to be the companion to the *Barefoot Doctor's Manual*. Would be easy to get buried in it (485 pages, some 14,550 entries), but so is a phone book, and I have a hunch it might be really useful to some people prowling around in the interesting developments in Chinese medicine. Take a look if you have interests there—contains ALL English translated or abstracted stuff from China about medicine between 1960 and 1970. Whew! (TB)

GOOD THINGS

Public Interest Economics Foundation Newsletter
1714 Massachusetts Ave., N.W.
Washington, DC 20036
$5/yr. Looks good—February issue contained perspectives on unemployment and the '76 campaign as well as a lot of information on who's doing economic research where. Also calls for research help from unorthodox economists: currently Public Interest, Inc., to fight the San Felipe Water Project, the Connecticut Audubon Society on environmental issues, and PIE-F themselves on nuclear power and the proposed NYC Convention Center. If you're an economist looking for a cause, get in touch with them immediately. (LdeM)

Northwind
Mapleville Organic Farm
Cross Creek
New Brunswick, EOH IEO
Canada
$4/yr., 4 issues. Make checks payable to Judy Hinds. A mimeographed, newsy letter by Hal and Judy Hinds—organic gardening, books reviewed, an account of Judy's experiments with making rennet and tidbits about their life on the farm. For those who want to know them better and get a feel for their way of life, they're inviting 25 people to an Earthskills Workshop, August 21-28, $75. Organic gardening, beekeeping, natural crafts, cheese making and wild edibles. Sounds delightful. (LdeM)

Continued on page 28

JUNGLE DRUMS

Baltimore Newsprint Co/op

Dear Rain,

I am impressed by your work. Renewed faith in some concept that I perceive as similar to us both is a by-product; that concept is partially expressed in the equation "Communications equals Community." It is well-known that Oregon is dealing with things better than most places. I perceive that success as partial because sensitive communications design is required in a successful address to the modern world.

In Baltimore we are trying a similar experiment. An "alternative" paper has never "made it" here: papers rise and fall anyway, and the ones heretofore have either not been very alternative, or alternative in spirit but not mortised-and-tenoned into the prevailing social environment. The *Newsprint Co/op* has no form; it's an information delivery system, an expression of newspaper art; in a sense, a hip ad sheet, a place for an underground community to surface and face itself.

If anyone wants to advertise in the *Co/op*, it's $20 for a quarter page: send us camera-ready copy.

The *Co/op* is published out of the Maryland Writers Council, which itself is a circus . . . an attempt to provide an inexpensive place for small-press publishing, to put more art before the people (Pure Art by the Pound), to do design and production for non-profit groups at cost, poetry projects, writing workshops and the like.

Much luck. Have a helluva a year of the Dragon.

Bob Waldman
Newsprint Co/op
Baltimore, MD 21201
301-332-1188

Chickens, Eggs and You

Dear Folks,

I sent you a couple of copies of the "Chickens Eggs and You" thing. I don't know what you said in the magazine 'cause I'm too cheap to kick in for a subscription, but by "Jeeze" I've been flooded with requests.

I haven't got balls enough to ask for a copy, but I would like a tear sheet if you have one.

Cheap John McG

Scientists' Institute

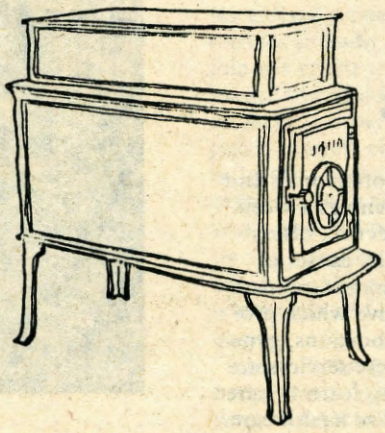
Dear Rain,

We are a non-profit organization in the process of setting up a solar library and bibliography of recommended books on solar energy.

If it is at all possible, we would appreciate the donation of any material you could send us on solar energy conservation.

Thank you very much.

Deanna Hope
Public Info. Dept.
Scientists' Institute
for Public Info.
49 E. 53rd St.
New York, NY 10022
202-688-4050



Jøtul Wood Stoves

Dear Rain,

Serious West Coast wood heating advocates have a new option in purchasing wood-coal appliances. The world-famous Jøtul cast iron stoves are now being marketed west of the Rockies.

Jøtul stoves, in my opinion, have no equal. Their handsome, rugged appearance, efficient operation and unequaled craftsmanship are a delight to behold in our wasteful "throwaway" society.

To find a dealer near you, write Kristia Associates, Box 1461, Portland, ME 04101

Yours truly,
Bill Day

Mental Maps

Dear Staff,

Here is my timely letter to include in the paper. How *RAIN* got to sunny Florida is that I brought it with me from Duvall, Washington. Down here, I cast the net but there is a measure of culture shock to overcome. Ah, well, I'll be back home soon. It's easy to forget the NW coast culture is no dream. Eighty-five percent of growth in south and west since 1970. Consider from whence the infusion into Oregon, Washington, Northern California comes. Good basis for article/survey. How do you research this—does anyone care to know?

Please send turn-ons to:

Jack Rosenblatt
70 Duffield Ct.
Towson, MD 21204

Land Trusts, Hexan Creek Notes

Dear Rainbirds,

A few items:

I've been writing off here and there lately, looking for information on land trusts. Wrote to a fellow named Swann at an "Independence Institute" (or some such) in Massachusetts and to the folks down in Fresno, CA, but to no avail—no response. If you know of anyone in Oregon who has information about such, I'd like to get in touch.

Also, I'd like to recommend *Tintin* comics to anyone who hasn't read them. They cost about $2.00 each and can be found at selected bookstores. Totally unlike American comics, they come from France. Hergé is the author. Atlantic-Little, Brown is the American publisher.

Don't remember if I sent you a copy of *Hexan Creek Notes*, but there's a mention there of a couple of bookstores you may or may not know of yet. I was recently in Newport and didn't see a copy of *RAIN* there, so thought you might want to try them (the Canyon Way Bookstore). Word's bookstore in Coos Bay is a straight, old-fashioned (though not old) bookstore run by a True Bookman, Tom Word. I'm sorry I don't have their addresses; but if you contact Tom Word, say "hi" for me.

Peace,

Johan
82234 Weiss Rd.
Creswell, OR 97426

What's Growing in Iowa?

Craig Mosher

Four hundred kilometers west of Chicago, amidst fertile corn fields, on the banks of the Iowa River, sits Iowa City, home of a growing group of alternative organizations. The University of Iowa adds 21,000 students to the city's 50,000 population and provides a secure state payroll for almost half the employed people in town. There also are several small factories and many farm-oriented businesses here.

Scattered around town and out over the countryside are many communal living groups. Crafts people and artists produce wares to be sold at bi-monthly crafts fairs in town.

Several cooperative day care centers, an alternative elementary school and a free university meet only a part of the need for alternative education. The Crisis Center provides hotline service to people in need, with volunteer and United Way support. A Simple Living group meets weekly. LINK is a monthly-published listing of things people want to learn and teach.

The Iowa Student Public Interest Research Group has been an effective statewide lobby and organizer for environmental and political issues. Two consignment shops, Goodwill Industries and a Free Store, provide free or low-cost used clothing.

A Free Clinic staffed by liberal medical professionals and students provides free medical care several evenings a week. HERA, a radical feminist psychotherapy collective, offers treatment and raises consciousness of the social causes of emotional illness—particularly sexism. The Emma Goldman Clinic for Women is a women's health collective which provides self-help groups, pregnancy screening, abortions, gynecological services and pre-natal classes. All these services are offered in a supportive environment so women learn to care for and control their own bodies as they receive health care. Educational and political programs operate out of the Women's Center at the University, and there is a women's restaurant, struggling to maintain its women only policy in the face of City opposition. A women's work crew contracts remodeling jobs.

Through the valiant efforts of a citizens' advisory committee, the City Council—which has long been controlled by business interests—has allocated substantial federal money to neighborhood community centers and a Citizens Housing Center, which will help low-income folks rehabilitate their own houses. An active tenants' organization helped push these changes through the council.

The largest alternative organization in Iowa City is the New Pioneer Cooperative Society, which operates a natural food store, bakery, Stone Soup Restaurant and co-op garage, a memorial society and a new co-op credit union. New Pioneer began five years ago as a small buying club for people interested in natural foods. They soon had a store front and grew a thousand members. The co-op store sells dry goods, herbs, dairy products, oils, vitamins, a wide variety of books and periodicals and some cooking equipment. Members who volunteer two hours per month to help in the store get a 20% discount on purchases and six low-paid staff keep the place operating. The membership is diverse and includes mostly non-students who live and work in Iowa City and the surrounding countryside.

Country Journal

Co-op policies are discussed to consensus at monthly membership meetings, usually attended by thirty to fifty people. The co-op is presently considering buying a building to establish a more permanent location and is discussing ways to generate the necessary funds internally.

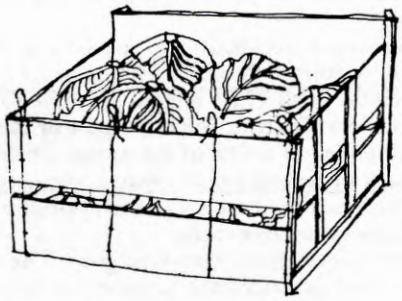
We continually struggle to persuade enough volunteers to work in the store so the staff has time to expand services and to avoid hiring additional staff. We often ask, how long do we remain a cooperative if we need to hire increasing numbers of paid staff to do the work volunteer members refuse to do? Also, is there not a legitimate need for continuity and experience in the coordination and operation of the store which only paid staff can fulfill?

Upstairs from the New Pioneer food co-op is Blooming Prairie Warehouse, which supplies many midwestern co-ops. The warehouse was established about two years ago and has also grown rapidly as more co-ops have sprung up around the state. There are over a dozen food co-ops and buying clubs in Iowa, including two which have just started this year. The

warehouse is continually seeking local sources of organically grown food. But some inexperienced local farmers trying to grow organically are very frustrated at the poor quality of their initial efforts. As the co-ops grow and farmers learn, an increasing proportion of our food will come from local sources.

Stone Soup is a restaurant which was organized as a part of the New Pioneer Co-op last year and serves natural foods to a growing number of students and townspeople. The restaurant operates out of an abandoned kitchen in the basement of a former parochial school. The restaurant has a paid staff of a dozen part-time people and is still plagued by inefficiencies such as receipts dropped into the molasses. Volunteer workers eat free, and New Pioneer working members get a 20% discount.

After supper the Stone Soup kitchen becomes a bakery, turning out 130 loaves of whole grain bread a night. The many varieties of bread are sold through New Pioneer and other co-ops. Granola and special goodies are baked sporadically. The bakery folk are debating how quickly they want to grow and whether they want to take on large orders from profit-making natural food stores in nearby cities. Also, whether they want to discipline themselves to the more rigid schedules and standards necessary in the regular business world.



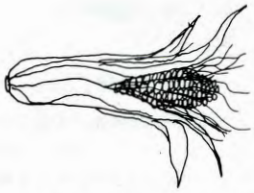
Just this winter a Co-op Garage has been organized by folks from New Pioneer who each put in $10 (almost) every month. The money goes toward rent and major tool purchases. They have a temporary building where they repair their own vehicles and are seeking a more permanent location and additional members. Only the fifteen members use the garage. Another new project is a memorial society. They provide information about local funeral services and low-cost alternatives.

After a summer of talking, New Pioneer invited a representative from the Iowa Credit Union League (an organization which helps establish and operate credit unions; each state has one) to explain to our monthly membership meeting how to set up a credit union. We were interested in gaining control over our own money and making low cost loans available to our members who might not qualify for bank loans. Then a group of New Pioneer folks sent out questionnaires asking how much people could deposit, what jobs they held, how long they planned to live here and whether they wanted to help operate the credit union.

The response was surprising. Our membership was more diverse, permanent, employed and wealthy than we had thought. ("For a bunch of hippies . . .") The representatives from the League and the State Department of Banking—which had to approve our application for a charter and our articles of incorporation—were surprised too, saying we had as much in initial pledges ($16,000) as most new credit unions take in in a year. So we applied for a charter, which the Department of Banking approved six weeks later. The data from the questionnaire was the key to convincing the state banking people we could do it. It was interesting to us that the older, more conservative-looking, state people were the most interested in our cooperative organization. They said they thought our credit union would be more stable than those in factories, since our members were more likely to remain loyal to the co-op if they moved out of town than were factory workers who lost their jobs and had to leave. (It is not always so easy, however. In Madison, Wisconsin, a large co-op has tried three times over five years to get a state charter for a credit union and has been turned down each time. They finally sold bonds of their own to finance co-op housing projects.)

After getting the charter, a New Pioneer membership meeting elected a board of directors, which set up books and committees to audit the books and make loans. As co-op members join the credit union and deposit their savings, the money is loaned out again to members and to organizations and, if necessary, to other credit unions in Iowa. The difference between interest charged on loans and interest paid on savings is "profit," which goes first into legal reserves and operating expenses, with the remainder paid to members as dividends at year's end. All policies are set by the board, which is elected by the members (depositors), who thus control the credit union. Unlike a bank, the major source of collateral for loans is the trust and responsibility which people have within the co-op.

New Pioneer recently sponsored a conference for co-op people from Iowa, Wisconsin and Minnesota on leap year weekend. Out of the meetings came not only new knowledge but also an increasing interest in more carefully defining the direction and purpose of our co-ops. It appears that something is growing here besides corn.



Craig Mosher is a father and partner, furniture and toy maker, teacher at the School of Social Work (University of Iowa), and chairman of the board of the New Pioneer Co-Op Credit Union.

For more information (perhaps a sample copy of their excellent monthly, *Co-Op News*) contact:

New Pioneer Cooperative Society
529 South Gilbert
Iowa City, IA 52240

Capturing the Sun

Proceedings of the March 11-12, 1976, conference in Washington, D.C., will be available by June 1976 from the conference coordinators: Washington Center for Metropolitan Studies, 1717.Massachusetts Ave., N.W., Washington, DC 20036, phone 202-462-4874.

Papers given at the conference ranged in scope from sea farming of kelp on 400 square miles of ocean (enough to provide for present total demand for natural gas in the U.S.) to a $850 household biogas plant using swine manure to provide cooking gas for a Taiwanese farmer. Emphasis seemed, as is usually the case, to focus on very large scale applications. The following outline gives a good overview of areas covered by the conference.

1. **Urban and Industry Wastes**
   a. Electricity or steam generation by direct burning of shredded wastes mixed with coal in St. Louis (Mo.), Ames (Iowa) and Saugus (Mass.)
   b. Pyrolysis (destructive distillation) of wastes to produce gases, oils and char for use as boiler, home-heating and motor fuels in Baltimore (Md.), Charleston (W. Va.) and San Diego (Cal.)
   c. Collection of methane gas from sewage plant and sanitary landfills in Los Angeles and Palos Verdes (Cal.)
   d. Fermentation (anaerobic digestion) of wastes to produce methane gas in Pompano Beach (Fla.)
   e. Enzyme hydrolysis of celluslosic wastes to produce industrial sugars and alcohol fuels in Natick (Mass.)
2. **Agricultural and Forestry Wastes**
   a. Inventorying of forest, field crop and animal wastes to estimate nation-wide quantities potentially available for bioconversion.
   b. Investigation of technical, economic and environmental factors in large scale conversion of forest, field-crop and feedlot residues to fuels and related chemicals.
   c. Development of small-scale farm and village digesters for U.S. and overseas use in converting wastes to methane gas in Monroe (Wash.)
3. **Special Land and Fresh Water Energy Farming**
   a. Analysis of the technology and economics involved in large scale production of forest and field crops specifically for energy.
   b. Investigation of potential for major energy production from algae cultures and lake plants (e.g., hyacinth).

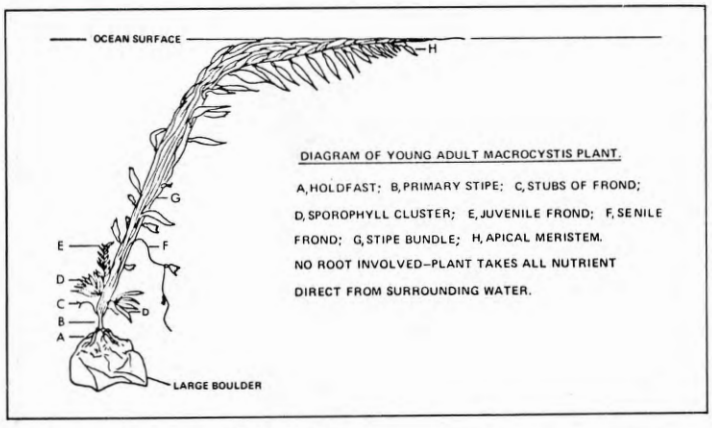


Diagram of a young adult kelp plant. *(Courtesy of W. J. North, California Institute of Technology)*

4. **Ocean Farming**
   Testing of open-ocean rafts for large-volume growing of seaweeds (e.g., kelp) and conversion into methane gas and related foods and chemicals.

Further information and project contact names are available from the Washington Center for Metropolitan Studies, phone 202-462-4874.

Throughout the conference there seemed to be a great lack of concern for the environmental impact of large bioconversion systems. One of the best examples of this was the failure to consider the ecological impact to a forest when removing residues for combustion of pyrolysis (destructive distillation). It seems very obvious what the outcome of such actions would be if this removal of food and nutrients were practiced on a large mechanized scale.

Sentiments for a conservation and ecological approach were well presented in an unscheduled presentation by Abbey Rockefeller at a workshop on "related products." Ms. Rockefeller is the U.S. distributor for the Swedish Clivus Multrum waterless composting toilet system developed by Carl Lindstrom. Ms. Rockefeller deftly criticized the enthusiasm of those who would exploit for profit the earth's renewable resources with no concern for conservation and ecological limitations.

A really moving and inspirational speech was given at the first luncheon by Russell Peterson, chairman for the Council on Environmental Quality. He related his topic to a recent visit he had made to Seattle. The latter part of the speech was devoted to Chief Sealth's view of the human-environmental system, the lack of feeling which western man expressed toward the earth and the harmonious relationship needed for our creative survival on this earth.

Many of the papers given were very good. The most environmentally sound practices in bioconversion seem to be those using digestion or fermentation processes. These methods are less efficient in terms of energy production, but the overall return to the earth is greatest. For example, the energy production alone from the anaerobic digestion process (methane production from organic waste) is only 35-50% of the total energy available from the same material if it were burned directly. The end result of the burning process yields only ash with trace minerals, whereas the digestion process yields a fertilizer product with almost no losses of nitrogen or phosphorous.

Among the best papers given at the conference were the following:

"Ocean Farming," Howard Wilcox, Ocean Farm Project, Naval Undersea Center, San Diego, CA

"Agricultural Waste Management," William Jewell, Prof. of Agricultural Engineering, Cornell University, Ithaca, NY

"Forestry Waste," Harold E. Young, Complete Tree Institute, University of Maine at Orono, Orono, ME

"Digester in the Republic of China," Bruce Billings, V.P., Aerospace Corp., Los Angeles, CA

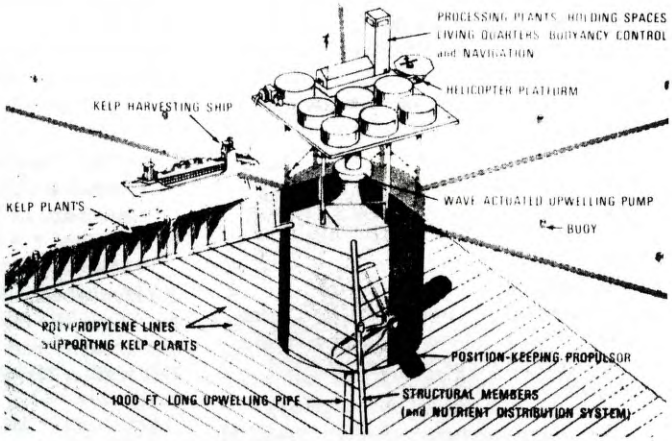
Through Bioconversion

Bioconversion is one of the lowest funded, if not the lowest, sections of the budget for the Solar Energy Division of the Energy Research and Development Administration. In terms of its contribution to a harmonious flow of energy through the ecosystem, it can potentially contribute the most in terms of conservation and a move to income energy from the sun. It is a shame that it receives such a low priority when compared to other energy systems.

Washington, D.C., is a crazy place, but it was a nice visit. My thanks to the Environmental Policy Center and to Wilson Clark, who made the trip possible.

For a really good overview of bioconversion and waste management in agriculture, a new publication by Prof. William J. Jewell is available from Ann Arbor Science, P.O. Box 1425, Ann Arbor, MI 48106. The title of the book is *Energy, Agriculture and Waste Management* ($22.50—tell your library!). This book has the best history of digestion as well as an up-to-date view of what's going on.

Ken Smith
Ecotope Group
P.O. Box 618
Snohomish, WA 98290



Artist's conception of a future ocean farm unit. The upwelling pump is powered by waves. The farm can be positioned by anchoring the central platform or by propelling the platform with wind power, wave power, or fuel derived from the seaweed harvest. The depth of the farm's mesh may be increased during large storms to reduce the risk of damage.

(U.S. Navy Photo)

Bio-Gas Plants

	Western Technology (Large-scale coal-based fertilizer plant)	*Alternative Technology* (Village-scale 5000 cft/day bio-gas-fertilizer plant)
Number of plants	1	26,150 (@ 8.8 tonnes per year per plant)
Capital cost	Rs.1200 million	Rs.1070 million (@ Rs.41,000 per plant)
Foreign Exchange	Rs.600 million	nil
Capital/sales ratio @ Rs.4350 per tonne nitrogen	1.20	1.07
Employment	1000	130,750 (@ 5 per plant)
Energy	about 0.1 million MWH per year *consumption*	6.35 million MWH per year *generation*

Table 1. The Production of 230,000 Tonnes of Nitrogen per Year by Western and Alternative Technologies

Village-sized bio-gas plants have proven a very effective source of both energy and nitrogen fertilizer in India without disruption of local lifestyles. Adoption of this technology throughout the country rather than Western coal-based fertilizer production will result in the dispersal of production to 26,150 villages rather than concentrating it in one center; save Rs600 millions of foreign exchange; conserve Rs130 millions of precious capital in a capital-poor country; yield a much higher rate of return on investment; generate 130 times more employment; generate energy instead of consuming it; and provide employment to the rural poor rather than the urban elite. Biogas plants have been adapted in India more rapidly than in the U.S. because of India's more equatorial location and lesser heating requirements which allow a greater net production of energy from the wastes than in the U.S. (*Undercurrents* 14)

Small Scale Computer

Bob Wallace did a catalog of computer resources, published in RAIN *(Vol. 2, No. 1). Leap Year Conference. He was in his blue shirt. Handed me a pile of stuff, just before he compared his office and home in a bag.*

- *The following update of the 1st listing is one thing he handed me.*
- *Also a short history of community memory projects which he wants to work on some more.*
- *A listing of computer clubs in the U.S. If you want a list, send self-addressed, stamped envelope to Bob Wallace, New World Computer Services, P.O. Box 5414, Seattle, WA 98105*
- *The Northwest Computer Club Newsletter, Pacific Science Center Foundation, 200 2nd Ave. N., Seattle, WA 98109*

(SJ)

Boston People's Computer Collective
Bill Mayhew
Children's Museum
Jamaica Way
Boston, MA 02130
617-522-4800, x25, 9 am-5pm M-F

Group trying to increase layman's awareness of computers in society. Offering courses on societal implications of computers and the computer as tool and toy. Also working on a traveling interactive computer exhibit. (Children's Museum has PDP-11 running UNIX).

Community Mailing Service
3525 Lancaster Ave.
Philadelphia, PA 19104
215-382-6096

Cooperative group doing mailing list services (list maintenance and cheshiring) for both local and other non-profit groups. Uses a large computer running a PL/1 program.

Computer Education Project
Lawrence Hall of Science
University of California
Berkeley, CA 94720
415-642-3134, 642-9193

A place where the general public (especially kids) can learn about computers and actually run programs in BASIC. Has regular classes and many terminals available.

Larry Press
128 Park Pl.
Venice, CA 90291

Author of many books and articles on community and educational uses of computers. Best one is "Arguments for a Moratorium on the Construction of a Community Information Utility," a paper in the 12/74 CACM (available for SASE) which examines some of the social problems a system might generate. He calls for computer information utilities which are "prudent, ecological and decentralized."

Lion Goodman
Cooperative Consciousness
P.O. Box 933
Boulder, CO 80302
303-443-7505

Group interested in setting up a Community Memory and Resource/Information Center. Also interested in a national network of computers oriented toward the spiritual community and a community free school computer project.

Kirk Kelley
911 Mission
Santa Cruz, CA 95060

Working on "The Whole Universe Catalog," an on-line university with access to the universe. First issue of newsletter ($2 for 4 issues) has description of system, which organizes info into a University section and a Space-Time Continuum section. Half-hour video tape also available, showing what the system would look like to a cable TV subscriber. Fascinating system.

The Network Center
P.O. Box 492
Elkton, MD 21921

Interested in using computers to help implement people networks. Working on a paper on the subject; should be available now.

GOOD THINGS
continued from page 22

Challenge for Change
National Film Board of Canada
P.O. Box 6100
Montreal, PQ H3C 3H5
Canada

The National Film Board of Canada is everything our U.S. government arts program isn't. They have sponsored what is probably the most beautiful, creative and relevant collection of films that any country has produced. I remember an exhibit of their films in Minnesota—people just stayed there fascinated watching the films again and again! Their full catalogue must be incredible. Send for their catalogue of environmental films—water, conservation and nature, human settlements, the Canadian Northland, population growth, lifestyle and environmental concern, man's impact on the environment and children's films. Too many really fine, award-winning films to list. Their brochure on the New Alchemists film is an example of their thoroughness and usefulness—in addition to description of the film and 16 pages of access information related to the film, it lists other films of related interest, who is doing related projects in Canada and a long list of interesting readings. (TB)

RECYCLING

Yea! Someone is finally taking the ORE Plan seriously. The City of Bellingham (Washington) asked Huxley Environmental College on the campus of Western Washington State College to go in with them on a grant proposal to NSF to design a labor-intensive neighborhood recycling program for the city based on the ORE Plan. As far as we know it's the first time a city has initiated plans for this sensible way of dealing with "waste." We'll keep you posted. (LdeM)

Decision-Makers Guide to Solid Waste Management **(SW-500), 1976, from:**
Office of Solid Waste Management Programs
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

A solid survey of options and processes of solid waste management. Contains good coverage of special wastes—waste lubricating oil, tires, sewage sludge, hospital wastes and hazardous wastes, but contains only three short pages on reducing waste generation and does not cover inexpensive low energy systems such as the ORE Plan. (TB)

Activities

Tony Kalar
John Salmi Memorial Co-op
Ray, MN 56669
Group at Rainy River Community College linked with Minnesota's educational time-sharing system. Looking for energy systems design programs; will be producing a bibliography of computer programs for alternatives uses.

Keith Elkin, EKOTEKET
c/o The Museum of Modern Art
Skeppsholmen
Stockholm, Sweden
An information center, public library, and information gathering system focusing on alternative technologies and ways of habitation based on ecologically adapted technology. Has PDP-11/45 for use on this project.

Bill McLaughlin
INFILL/PHOT
Box 158
San Luis Rey, CA 92068
Using a microcomputer to typeset and do mailing lists for a non-profit group promoting local performing arts.

White Plains Public Library
White Plains, NY
Offers computer access on a Wang 2200B for 25¢ for 4 minutes. Users run BASIC, games, small business programs.

Richard B. Koplow
Resource Access Center
3010 4th Ave. S.
Minneapolis, MN 55408
612-824-6406
Resource Access Center is an educational project seeking to provide hardware and software competence for community service users—agencies and individuals—or potential users of data processing equipment. Programs such as Model Community Service Bureau, Youthiac, and Bit Users Association, bring together professionals and students from grade school through graduate level, providing academic credit for design and implementation of hardware and software useful to community agencies. Project is only now becoming operational, beginning with bookkeeping, typesetting and survey processing systems; mailing sorts, community memory, public access to governmental records and possibly time-sharing to follow. Have several BIT 483 computers and NCR system for bookkeeping.

Fertile exchange of engineering of terminal units, etc. and seek joint construction for p-c board economics, etc. Have adapters for standard TV for full graphics and for 80-wide (YES!) alpha. Have 8080-based micro designs far superior to published items. Controllers for paper tape and cassette units. Developing cable-tv-computer network for senior citizens apartment complex. Seek to exchange data and to work with anyone seeking competence in community computer implementation. The project is totally dependent upon voluntary staff and subsistence service workers, so please include self-addressed, stamped envelope with specific inquiry or interest.

Youthiac
3010 4th Ave. S.
Minneapolis, MN 55408
612-824-6406
Project of Resource Action Center. Provides access to computer hardware and systems for students through high school interested in community service computer work of Resource Action Center. An autonomous cooperative program, including separate computer system for youth use and maintenance. SASE for info.

Model Community Service Bureau
3010 4th Ave. S.
Minneapolis, MN 55408
612-824-6406
Agency of Minneapolis Model City Program and project of Resource Access Center. Develops competence in data processing among community service groups, especially in central city. Classes, tutorial training, access to hardware and systems, software exchange for agencies and individuals. SASE for info.

"China Recycles Her Wastes by Using Them on the Land," Roger Blobaum, *Compost Science*, Autumn, 1975, single copies $1 from:
Rodale Press
Emmaus, PA 18049
We had to review this just to show you this picture—vines planted to provide a crop of grapes and summer shade to cool poultry and pigs. They are planted where they can utilize manure washed out of the pens during a rain. Good article, by Roger Blobaum, who will be talking about the same subject at our Human Waste Recycling Conference in Portland, May 12-14. *Compost Science* is a good journal—mostly on municipal scale recycling of wastes back to the farm. $6/yr. (TB)

Continued on page 30

RECYCLING
continued from page 29

At *RAIN*, when we run across a couple of similar efforts in a short space of time, our information-networkers' intuition says, "Hey, pay attention, this looks like the tip of an iceberg . . . an iceberg that should be encouraged. Let's make sure they know about each other and let's find out what's in the part of the berg that's still underwater." So we have here the iceberg known as "industrial waste recycling." The following organizations are running or planning info exchanges which act as clearinghouses between those manufacturers who generate "waste" and those potential users who'd love to give those "wastes" a new and productive home, if only they knew they were available.

Iowa Industrial Waste Information Exchange
Center for Industrial Research & Service
Building E
Iowa State Univ.
Ames, IA 50011
515-294-3420
Confidential listings of waste materials available or wanted are solicited and made available to prospective sellers and buyers, who then get together on their own.

Oregon Industrial Waste Information Exchange
Portland Recycling Team
1801 N.W. Irving
Portland, OR 97209
503-228-5375
Jerry Powell, our friend at PRT, has written a proposal requesting $9824 in seed money to start an Oregon clearinghouse. He would appreciate suggestions on who to talk to for funding, who to send a copy of the proposal to for review and any other suggestions which would help get it started. (LJ)

National Resource Recycling Exchange
21 Beacon St., #4H
Boston, MA 02108
The Exchange is the man standing in the middle saying, "You take his scrap iron," "You take his lead residue," "Who needs phosphorous?" Good article on this center in the April '76 *New Age Journal*.

Eagle Kashaya
American Ecology Fund
Box 24136
San Francisco, CA 94124

SIXTH ANNUAL COMPOSTING & WASTE RECYCLING CONFERENCE

"Recycling Human Waste"

Sponsored by: Rodale Press, Inc., Emmaus, PA 18049
Co-Sponsored by: RAIN Magazine & Oregon Dept. of Environmental Quality

MAY 12-14, 1976 PORTLAND SHERATON HOTEL, PORTLAND, OR

Wednesday, May 12, 1976—Morning
Soil Organic Matter/Principles of Composting/Soil Biology: Dr. Clarence Golueke, Sanitary Eng. Research Lab., Univ. of California—Overview Biology Principles, Energy; Dr. Cord Tietjen, Institute for Crop Science, Federal Republic of Germany—European Developments; Dr. T. M. McCalla, Microbiologist, Univ. of Nebraska—Soil Principles; Dr. Dan Dindal, Soil Ecologist, State University of N.Y., Syracuse—Role of Soil Invertebrates in Decomposition.
Afternoon
Waste Recycling in China: Roger Blobaum. *On-Site Waste Treatment/Alternatives to the Flush Toilet:* Harold Leich, author of "The Sewerless Society," former chief of the Policy Development Div. of the U.S. Civil Service Commission; Charles O'Loughlin, The Farallones Institute, Berkeley, CA; Abby Rockefeller, Clivus Multrum, Inc.

Thursday, May 13, 1976—Morning
Organic Waste Use in Agriculture—Latest Development in U.S. Cities: Joanne Alter—Chicago Metropolitan Sanitary District; George Willson, USDA, Beltsville, MD—Bangor, ME Project; Dan Dindal—Effects of Wastewater Irrigation on Earthworm Ecology. *Economics & Politics of Composting:* Dr. Michael Perelman, California State University, Chico; Diane Clardy, Univ. of California; Sim Van der Ryn, State Architect, California.
Afternoon
The Business of Processing and Marketing Wastes: George Ward, Consultant, Portland, Oregon; Bruce Rennie, Western Minerals—Lebo Process; Carl Lindstrom, Clivus Multrum, Inc.; Ken Smith —Methane Plant Operation; Ed Lyn, Salem, Oregon—Sewage Composting; Cal Process, George Trezek, Luis Diaz, University of California. *Potential of Composting to Developing Nations. Composting Agricultural, Industrial & Municipal Organic Wastes.*

Friday, May 14, 1976—Morning
Recycling Solid Wastes: Dr. Richard Duncan, ORE Plan, Portland State Univ.; Jerry Powell, Portland Recycling Team; Terry Harrison, Berkeley, California, Recycling Center; Oregon Bottle Bill—What It Means to Recycling. *How Farmers Can Reduce Fertilizer Bills by Using On-Farm Wastes.*
Afternoon
Field Trips: ORE Plan Recyclers in Portland; King City Winery (grapes grown on sludge); Salem Sewage Plant; Willamette Valley Farms, using sludge as fertilizer.

Registration: $30.for full conference ($10 for one day), luncheons included. $15 for students or low income (luncheons included) or $5 for one day (without luncheon).

Send registration directly to Rodale.

Finger-Licking Good!
Ummm, WOW! Another really good thing is getting going—pear syrup! Ummm! Pear syrup is a beautiful alternative to white sugar or honey as a sweetener. It has a much subtler flavor than honey, doesn't crystallize, and only costs about two-thirds what honey does. Made by evaporating water out of mashed apples or pears, it is made of fruit sugars—45% fructose, 45% glucose and 10% sucrose. Can be used for baking, cannning, or as a syrup or sweetener.

It should be possible to scale the production fairly small and likely will be a boon to orchard areas and tree farming in general because it gives another useful product for blemished fruit besides dried fruit and cider. Bees and honey in the spring, nectar in the fall—double crop! Currently available only in bulk (55 gallon drums). For information or samples, contact Scott Skinner, 1458 East Main, Ashland, OR 97520. (TB)

Rush

Water Resources Research Institute has a weekly spring seminar (April 1-June 1) called "Non-Point Sources of Water Pollution," covering chemical pollution from crop run-off, construction activities, rainfall, etc. Contact William Buckley, 115 Covell Hall, Oregon State University, Corvallis, OR, 503-754-1022. . . . Join the Committee to Save Grand Central Station. They need your help. Make checks out to Municipal Arts Society, 30 Rockefeller Plaza, NYC 10020. . . . **The Environmental Education Association of Oregon is sponsoring a joint Oregon-Washington conference on environmental ed at Marylhurst Education Center, April 13-17. Contact EEAO, P.O. Box 5484, Eugene, OR 97405.** . . . Honduras needs foresters and Botswana wants a park planner. Contact new placement service for environmentally-related jobs overseas sponsored by Peace Corps, The Smithsonian, c/o Dept. L-1, Smithsonian Institution, Washington, DC 20560. . . . **Read Oregon Times, Feb./March 1976, for an article on an excellent day care program during World War II at the Kaiser Shipyards in Portland. Why can't companies do that today?** . . . Ms. Magazine, April, 1976, has a special section called "How to Start Your Own Business." Not much on collectives but some tips that might come in handy.

. . . **Hosanna Natural Foods (203 E. Chestnut, Yakima, WA 98901), a member-run co-op, lost at least $3,000 in inventory and equipment when their building was gutted by fire March 12. No insurance. Donations would be appreciated.** . . . Fantastic, colorful, educational, technical wind power poster, $3 from Windworks, Rt. 3, Box 329, Mukwonago, WI 53149. . . . **Homesteading & Communities Conference, May 15-17, 1976, at U&I Ranch, a cooperative community of 100 people on 1000 acres in Missouri. Contact Kitty and Ann, U&I Community Assoc., Eldridge, MO 65463, 417-286-3735.** . . . The Birth Center, a clearinghouse for people interested in natural childbirth methods, home birth, pre-natal yoga, St. Stephen and the Incarnation Church, 16th & Newton Sts., N.W., Washington, DC 20010, 301-423-3352. . . . **As a first step in eliminating "redlining," New York Gov. Carey said state-chartered banks would be required to disclose the geographic location of their mortgage loans. Redlining is the refusal to make mortgage loans in certain neighborhoods.** . . . Farmland must be assessed on the basis of its agricultural use and not fair cash value, the Kentucky Supreme ruled Feb. 20, citing a 1969 constitutional amendment. This applies even though farmland may have a higher market value due to its potential value for other purposes (i.e., suburbia). . . . **By governor's executive order, the scope of Wisconsin environmental impact statements must now include impacts on historical, archeological, aesthetic and energy effects of a project.** . . . The Portland Energy Conservation Project Library is now open. Contact Joanne at 503-248-4751 for directions on how to use. . . . **The Presidential candidates' views on solar energy are available from the New England Solar Energy Society, P.O. Box 121, Townshend, VT 05353; NESEA 1st Annual Conference is June 24-25 at Univ. of Massachusetts, Amherst, MA.**

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Taking Pictures and Taking Souls

Graphic: Maraka

Drinking wine one recent evening with Florian Winter, an Austrian visiting us on a global survey of renewable energy developments for the U.N., we got into talking about the destruction of European cathedrals by tourism.

Each person came, he said, and took away a little of the cathedrals—in their camera, in their mind, or in the conversation—and now nothing remains.

In that absurdity there is truth.

All places live through the reverence with which we hold them—without which they crumble to pieces, unloved, unmaintained, abandoned and destroyed. That reverence is the glue that in reality binds the stones and the blood that in truth sustains the life of a place.

For the life of a place lies in its relation to the people that share it. And it is that reverence first which is taken away, piece by piece, flashbulb by flashbulb, postcard by postcard, tour group by tour group. Without this reverence, a place has nothing to give to those whose lives it must sustain, and they in turn lose their nourishment and fall into the same dereliction as their cathedral.

It need not be so, for the visit of a pilgrim differs from that of a tourist. A pilgrim brings love and reverence, and the visit of a pilgrim leaves behind a gift of their reverence for others to share.

We scorn the people of other cultures who are angered when we wish to photograph them and cast aside their belief that we take away part of their soul.

Yet we do.

For what we seek—with photographs or our presence—is sought because it is that which we lack, and that lack and our presence only prove them right and us wrong. By our taking we diminish us both.

And we lessen the soul of all places to which we go, and ourselves as well, when we take without giving and come to them without reverence to life and to land, to people and to place, to ourselves and to the creation of which we are part. That is the destruction of which tourism is part and from which tourism arises, and it is there that we again can find the healing power for our land and our lives. (TB)

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