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RAIN

Journal of Appropriate Technology

JANUARY, 1977

VOL. III, NO. 4

ONE DOLLAR



Ancil Nance

INSIDE: SOLAR GREENHOUSES p. 4

E. F. SCHUMACHER

on technology and political change p.8

FOOD DISTRIBUTION AND MARKETING p. 12

RAIN *access*

AGRICULTURE

Proposals for Vermont's Agriculture and Food Future, Report of the Governor's Commission on Food, January 1976, \$10 (summary 50¢) from:

Vermont Dept. of Agriculture
116 State Street
Montpelier, VT 05607

An excellent complement to the above research studies which helps round out the process for change in one specific region. Commission recommendations to the government include setting up community canneries, community composting projects, farmers' markets, grain storage and cooperatives. (TB)

Wild Foods Cookbook and Field Guide, Billy Joe Tatum, 1976, \$4.95 from:

Workman Publishing Co.
231 East 51st
New York, NY 10022

Lots of good ideas here on how to find and how to eat such free goodies as purslane, dandelions, lamb's quarters, fern fronds and sorrel. Its dessert section was a disappointment as I was looking for some alternative sweeteners and virtually all call for sugar (not even honey). But I think I'll add this to my cookbook shelf. (LdeM)



Center for Studies in Food Self-Sufficiency

Vermont Institute of Community Involvement
90 Main Street
Burlington, VT 05401

These folks have carried out a well-organized study of Vermont's agriculture and the potentials for change towards more self-reliant patterns for food production and consumption.

Land, Bread and History (\$2.50).

Explores the institutional changes in Vermont's agriculture from a time when it was largely self-sufficient to increasing impacts of outside transportation and land developments that caused a specialization in dairy, maple syrup, fruit and poultry products. It surveys the state's present food consumption and marketing patterns and develops a methodology for aligning agricultural land capability in relation to diet choices. Agricultural land is shown to be available to feed much more than the present population on present diets and change to a dairy/vegetarian or largely vegetarian diet is shown to reduce agricultural land needs by up to 40%. (TB)

Energy Utilization in Vermont Agriculture. Summary (50¢). Vol. 1—Maple and Apple Production (\$1.50), Vol. 2—Egg and Dairy Production (\$1.50). A full net energy accounting of various existing options for different sectors of the state's agriculture. Size offers little advantage in maple or apple production. Commercial egg operations are more efficient than homestead operations, while small dairy farms are more than large ones. Overall state agricultural efficiency is 5.5%—requiring input of 18 calories per calorie of output. Suggestions for improved efficiency are given, as well as social concerns which should be included in determining state farm policy. (TB)

Wheels of Fortune, 1976, from:

Center for Rural Affairs
P.O. Box 504
Walthill, NE 68067

Emergence of new patterns is always a signal to delve into what lies behind them and what implications these forces have beyond the surface events. Center-pivot irrigation in Nebraska is on the surface a shift to capital and

energy-intensive farming. But underneath it represents a shift to investment schemes, tax shelters and lack of self-interest in the long-term viability of soils, farming practices and rural society. Big circles on the plains spell bad news. This is a good analysis of what's happening and why, although it doesn't continue its analysis strongly into the broad implications of such events. (TB)

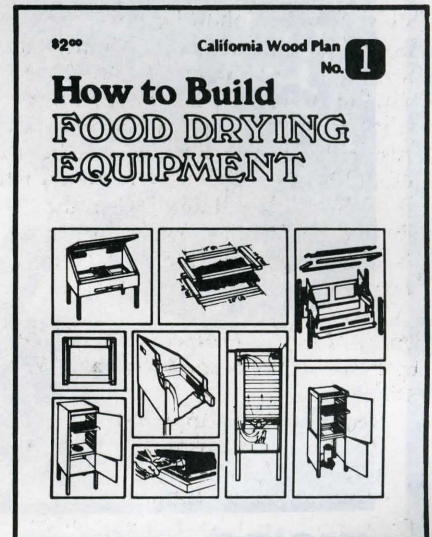
Agriculture and Economic Growth, U.S. Department of Agriculture, 1963, Economic Research Service, Agricultural Report No. 28 (A93.28:28), 25¢ from:

U.S. Government Printing Office
Washington, DC 20402

Economics of Size in Farming, by J. Patrick Madden, Agricultural Report No. 107 (A93.28:107), 55¢ from:

U.S. Government Printing Office
Washington, DC 20402

U.S.D.A.'s own research findings on the relationship between farm size and efficiency of production. In case after case, economies of scale could be achieved equally well on one and two person farms. (TB)



The Food Dryer's Drying Booklet, by John Magee and Connie Dexter, 1975, \$2

and
How to Build Food Drying Equipment, by John Magee, 1975, \$2 from:

California Wood Plans
P.O. Box 541

San Luis Obispo, CA 93406

It feels good when someone just lays out the options for you and gives you

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

We try to give access to:

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

what you need to do things yourself instead of pushing a single answer. This good set of booklets lays out how, what and where to dry—in the sun, in the oven, over a heat register, with solar heating or electricity. Pros and cons of each and how to prepare foods for drying. Companion book has simple, easy-to-follow directions and drawings for making several kinds of food drying cabinets. (TB)

HEALTH

Take Care of Yourself: A Consumer's Guide to Medical Care, by Donald M. Vickery, MD, and James F. Fuies, MD, 269 pp., 1976, \$5.95 from:

Addison-Wesley
Reading, MA 01867

A highly useful home medical guide which includes flow charts for figuring out what to do about the 68 most common complaints that bring people to a doctor's office—sprains, colds, sore throats, vaginal discharge, headache, back pain, etc. Asks key questions and allows you to, following a branching logic tree which tells you whether you need to (1) see a doctor NOW, (2) see a doctor today, (3) make appointment with doctor, (4) apply home remedies. Also tells you which home remedies to use. Lots of people go to doctors when they shouldn't and don't when they should. This book should help you use your doctor more effectively. (Tom Ferguson)

How to Practice Prospective Medicine, by Lewis Robbins and Jack Hall, 1974, \$12 from:

Health Hazards Appraisal
c/o Methodist Hospital of Indiana
1604 N. Capitol
Indianapolis, IN 46202

I've never been much of a bug on statistics, but this seems like a very valuable use. Lays out simply and directly your probability of dying from various causes based on your age, sex and habits. Then shows the impact on your expected lifespan from changing various habits—stopping smoking, losing weight, changing diet, drinking less, using seat-belts, etc. Tells you the odds; you choose how you want to live and die. Good approach and fundamental to the



development of self-care responsibility. (Suggested by Mim Orleans)

Alternatives to Chemical Medicines, Mildred Jackson N.D. and Terri Teague, 1975, \$4.95 from:

P.O. Box 656
Oakland, CA 94604

There are a lot of books out now with herbal remedies—many of which are conflicting. I know in my bones that this is the way to go, but it's hard to pick up on this almost lost art. This is the most helpful resource I've found so far—straightforward with amounts given (it's easy to overdo on sometimes powerful herbs) and favorites starred. Put together by two who've been working

with healing for a long time rather than faddists. It's a good beginning. (LdeM)

The New Handbook of Prescription Drugs, by Richard Burack and Fred Fox, \$1.95, from:

Ballantine Books
Random House
201 East 50th
New York, NY 10022

A 1975 version of the original 1967 guidebook for finding out where and how to get the best value for your prescription dollar; what drugs to avoid and how to evaluate different generic and name brand drugs and which to choose.

We found this in Self-Help and Health: A Report from Social Policy (we'll review their stuff next issue):

... I was in the courtyard of a place called McCord's Zulu Hospital, an institution of about 200 beds in Durban, South Africa. The wards and balconies opened onto a courtyard filled with flowering trees and warm subtropical air. Suddenly a single soprano voice soared from one of the wards, wavered, was joined and sustained by a chorus of women's voices and rose again. After a moment, a great deep harmonic swelled: the men's wards had joined in. And for the next ten minutes, the whole hospital sang. Someone translated for me. The Zulu song was about the pain of being ill, the loneliness and fear of being in the hospital, and the goodness of being with the people—other patients—for sharing and support. Every day at twilight, I learned, the whole hospital sang—all the patients and some of the staff. It was a profoundly moving experience. At intervals since, I have tried to imagine patients so sustaining themselves in a hospital in Boston. I cannot.

From "The Causes of Dehumanization in Health Care and Prospects for Humanization," J. Geiger in *Humanizing Health Care* by J. Howard and A. Strauss, eds., 1975, from Wiley-Interscience Press.



SOLAR GREENHOUSES

"In mastering the science of origins (excuse me, the science of Godward solutions), Ziller carried the quest to its most personal extreme. Clear-eyed and confident, he returned—literally—to energy, dissolving in the pure essence that spawned all life.

Even as I type these words, John Paul Ziller, the baboon with the firebug buttocks and Jesus the Christ of Nazareth are melting together into sunlight."—*Another Roadside Attraction*, by Tom Robbins

It is not enough to see solar greenhouses as a way of beating the high cost of petroleum. They embody a rediscovered awareness of our wholistic relationship to sun and biosphere. The economic, cultural and energetic factors that indicate the continuing metamorphosis are beginning to be articulated. For instance, John Todd of the New Alchemists writes:

"If modern industrial agriculture were replaced with a diversity of alternatives that included small, biologically-gardened or -farmed regions during the normal growing season and terrestrial capsules such as Arks for year-round production of foods, then a good deal beyond agriculture would be affected.

"The replacement of fossil fuel agriculture might alleviate some of the impact of the seemingly inevitable economic crash or famine. It would encourage agriculture to be less corporate and to re-establish it as a local and regional pursuit, involving as it eventually must, a much larger proportion of the society. . . . Thus decentralization might in turn lead to a repopulation of the countryside and perhaps even to a re-birth of a diversity of cultures and customs which are bio-regional in their content."

Yes, bio-regionalism. The humble

solar greenhouse reflects, to a greater degree than even the passive solar home, this rekindled human attention to what Peter Berg, ace watershed analyst of the Pacific Rim, calls "living-in-place" and "reinhabitation." For, to the already myriad climatological parameters of passive design for dwellings (insulation, temperature, humidity, windspeed and direction, soil type, site landscaping and topography), we must now add the long-evolved limits of various living organisms, both plant and animal. And we must design life-provoking niches for them.

Green plants are exercise enough for most experimenters. In fact, there is no ERDA-USDA funded solar aquaculture-greenhouse now being monitored. Yet it is the tri-fold combination of sun, plant and animal that pushes us to the limits of our knowledge about such a greenhouse's site bio-region and of our design and construction skills. We have commercial greenhouses, rabbit ranches and aquaculture farms, yet few models of any potential food production systems for an energy-short future which mix them all together: the New Alchemist's Cape Cod and Prince Edward Island Arks (vegetables, fish), Jim DeKorne's Survival Greenhouse (vegetables, rabbits) and the Reichmuth-Barnes passive parabolic reflector solar greenhouse near Seattle, Washington (vegetables, fish).

Even on this delicate and scientific frontier of food and energy, individual resourcefulness and private initiative have already established a clear lead over the ivory-tower specialists in the "more for less" sweepstakes. While the USDA's Agricultural Research Service funds no university greenhouse researcher for less than \$50,000, they still have all completely missed what the pathfinders mentioned above have not only already intuited, but accomplished as finished, working systems. It is doubtful our nation can afford much longer the stupidity of well-funded, certified-by-peer-review, greenhouse academics un-

aware of integrated bio-solar systems. In this field, innovative and informed inter-disciplinary talents are required. You'll find little of it in the government documents listed; rather, as Steve Baer's example reminds us, pay attention to the writings of those who watched "Mr. Wizard" as kids. Unless you have \$250,000 in taxpayers' money to waste, of course, like the U.S. Dept. of Agriculture—Agricultural Research Service.

A bit unhappy? Send your queries, suggestions and complaints to the men responsible for the program, for writing the RFPs (request for proposals), etc.:

Mr. T. E. Bond
Rural Housing Research Unit
USDA-ARS
P.O. Box 792
Clemson, SC 29631

and

Bill Cherry
ERDA
Div. of Solar Energy
20 Massachusetts Ave., N.W.
Washington, DC 20545

● TECHNICAL EVALUATION

Climatic Data Reference List, compiled for Passive Solar Heating & Cooling Conference & Workshop, May 18-20, 1976, Albuquerque, NM. Free with self-addressed, stamped large envelope, from:

Technology Applications Center
(TAC)

University of New Mexico
Albuquerque, NM 87131

Basic sources for data and methods in the analysis of any micro-climate for a specific solar greenhouse or passive solar building site.

Climate Under Glass, Technical Note No. 131, WMO No. 373, by Dr. J.

Seeman, 40 pp., 1974, available from:
World Meteorological Organization
(WMO)

Geneva, Switzerland

Highly recommended technical treatment of general greenhouse climatology

covering: radiation and heat balance, heat transformation, temperature conditions, air-soil-plant temperature, air humidity, evaporation and consumption of water, carbon dioxide, climate control basics, regulation of light, temperature, shading, ventilation, water-atomizing installations and short-period spraying. Excellent bibliography on each topic, clear drawings and graphs complete this excellent survey. We need it updated with plant and animal data for integrated bio-solar greenhouses.

"The Development and Testing of an Environmentally-Designed Greenhouse for Colder Regions," by Tom A. Lawand, et al., in *Solar Energy*, Vol. 17, No. 5, 1975, or send \$1.25 to:

Brace Research Institute
MacDonald College—McGill Univ.
Ste. Anne de Bellevue
Quebec, Canada H9X 3M1

This is the best starting point for a technical understanding of reflective, interior north wall solar greenhouses. Ask for their extensive and excellent a.t. publications list.

Simulation Analysis of Passive Solar Heated Buildings, by J. Douglas Balcomb and James C. Hedstrom, LA-UR-76-89, available from:

Los Alamos Scientific Lab
Solar Energy Lab
Mail Stop 571
Los Alamos, NM 87544

This important paper, while not strictly about greenhouses, explains in understandable text and straightforward equations the physical basis for passive design which can be then applied to solar greenhouse design.

"Thermally Self-Sufficient Greenhouses" by Robert T. Nash and John W. Williamson, in *ISES-'76, Winnipeg Conference Proceedings*, Vol. 7 (Agriculture, Biomass, Wind), pp. 64-78

Reports on experimental work with water heat storage overnight in greenhouses and provides values for thermal mass needed to counterbalance heat losses.

● MODELS

"Description and Analysis of a Novel Passive Solar Heated Aquaculture/Greenhouse Complex near Seattle, Washington," by Howard Reichmuth in *ISES-'76, Winnipeg, Conference Proceedings*, Vol. 10 (poster session), pp. 199-205.

The inside north wall is a parabolic reflector which collects and stores solar energy in a massive 5000 gallon interior warm water fish tank. Built with a \$3,000 grant from Hunger Action, Olympia, Washington.

Evaluation of a Solar Heated, Waterwall Greenhouse, by Patricia Moodie, Ken Smith, Howard Reichmuth, \$3.00 from:

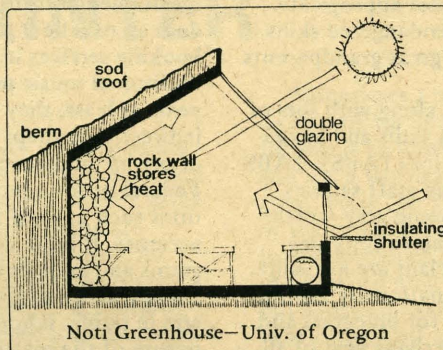
Ecotope Group
747 16th Ave. East
Seattle, WA 98112

Design drawing, structural description and technical analysis of heat-gain and -loss balances for a passive design with a 4' high wall of clear plastic water-filled bags stacked behind the south vertical windows. Graphs, tables and equations included.

The Journal of the New Alchemists, Vol. 2, \$6 single copy from:

Nancy Todd, editor
New Alchemy Institute Journal
P.O. Box 432
Woods Hole, MA 02543

Explains your basic ARK I à la Cape Cod. A descriptive and artistic poster of Ark II (Prince Edward Island) is available, and future *Journals* will contain updates of their work.



An Attached Solar Greenhouse, by Bill Yanda, \$1.75 from:

The Lightning Tree
P.O. Box 1837
Santa Fe, NM 87501

Step-by-step illustrated instructions, in English and Spanish, for locating and building low-cost extensions to existing dwellings which grow food and provide supplement home heat. Based on the Solar Sustenance Project construction of many such units at high, isolated, rural New Mexico homesteads. Excellent example of a.t. instruction which can be applied in hands-on weekend workshops.

The Survival Greenhouse, by James B. DeKorne, \$7.50 from:

The Walden Foundation
P.O. Box 5
El Rito, NM 87530

Construction and operation details of a pit greenhouse. Tells how keeping four rabbits inside one can increase vegetable 15 to 70% and provide 400 lbs. of protein annually; how to build a food-producing aquarium from a 55-gallon drum. 150 pp., 30 drawings and charts, 20 photos.

● ACCESS

The Food- and Heat-Producing Solar Greenhouse: Design, Construction, Operation, by Bill Yanda and Rick Fisher, \$5.50 from:

John Muir Publications
P.O. Box 613
Santa Fe, NM 87501

Best survey available on the types of solar greenhouses now being built in various U.S. bio-regions, covering the work of 30 innovators in the field.

Energy in U.S. Agriculture: Compendium of Energy Research Reports, Conservation Paper No. 37A, by Jim Rathwell and Gwendolyn Gales, 176 pp., 1976, \$7.50 from:

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

21 out of the 1291 entries in this document list ongoing or recently-completed research projects and articles related to greenhouses. Projects include direct and indirect (i.e. solar panels—storage) solar heating, waste heat utilization, off-peak power for heating and lighting, and conservation of water, heat and fertilizer. Lists the grant award of each university greenhouse research team which presented papers at the "Fuel & Food" Conference. Find a local library which is a U.S. government document depository.

Solar Energy—Fuel and Food Workshop Proceedings, April 5-6, 1976, Tucson, Arizona, edited by Merle Jensen, 258 pp., \$5 per copy (checks payable to Univ. of Arizona) from:

Environmental Research Lab
Tucson International Airport
Tucson, AZ 85706

Includes 17 reports from U.S. Dept. of Agriculture—Agricultural Research Service, corporate and university researchers with emphasis on retro-fitting large commercial greenhouses for energy conservation and solar heating via a variety of methods. Only one of the reports, starting on page 129, considers the possibility, for new greenhouses, of a direct (i.e. passive) solar design in which the greenhouse is the collector-storage system à la Brace Research Institute, New Alchemy Institute, Reichmuth-Barnes and others listed in the "Models" section. However, forewarned of this shortcoming, home and commercial greenhouse builders will still glean some useful hints. Best of all, the name and address list of participants at the back will aid you in contacting nearby resource people for answers to specific questions. (Courtesy Bill Rice, ERDA) —Lee Johnson

Endangered Skills

There are very few people in this country today who know the steps and calls of all of the square dances, or who have been to a barn-raising, or who can card and spin wool, or cure venison, or who remember the words and tunes of our traditional music. If decentralization is our goal and a.t. our doctrine, then the return to the use of simple skills and the appreciation of the arts of the past seems most appropriate. There is an entire constellation of such "endangered skills," gifts of inestimable social value from our great-grandparents which are now being lost to posterity.

The Seattle Folklore Society is trying, along with lots of other folks, to save America's endangered skills and has established a Traditional Arts Booking Service (TABS). TABS doesn't yet generate enough income to pay staff salaries (that sounds familiar!) but does provide some very worthwhile services. They let colleges, civic organizations and club-owners know when traditional musicians are available, publicize the concerts and plan tours for nationally famous performers. They also act as a consultant for bluegrass and folk festivals, fiddle contests and more. Perhaps best of all, TABS actively seeks out local, young and ethnic musicians; sometimes they are featured in big-name concerts, and a few have college and coffeehouse tours arranged for them. TABS' efforts are extremely valuable and could serve as an example for more, badly-needed organizations around the country, but they only touch on one aspect of the overall problem.

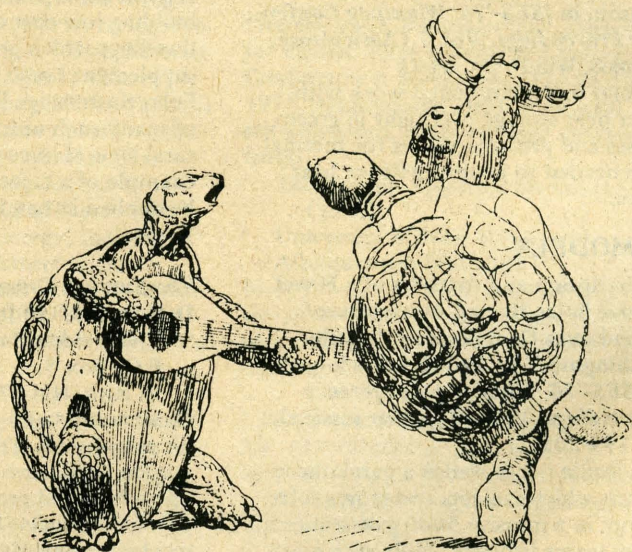
In order to see to it that America's endangered skills are preserved, they must first be well-defined. The people who are practicing them should be identified, as should the level of expertise and the regional, ethnic and cultural contexts in which the skills are being practiced. Then their social, economic, historical and aesthetic values can be assessed, and work can be focused where it is most badly needed. Ideally, by the time our children are grown, there will be a substantial number of people who are absolute experts in each of the traditional skills and who will be able to train the next generation. And many more Americans will have accepted, or at least been exposed to them.

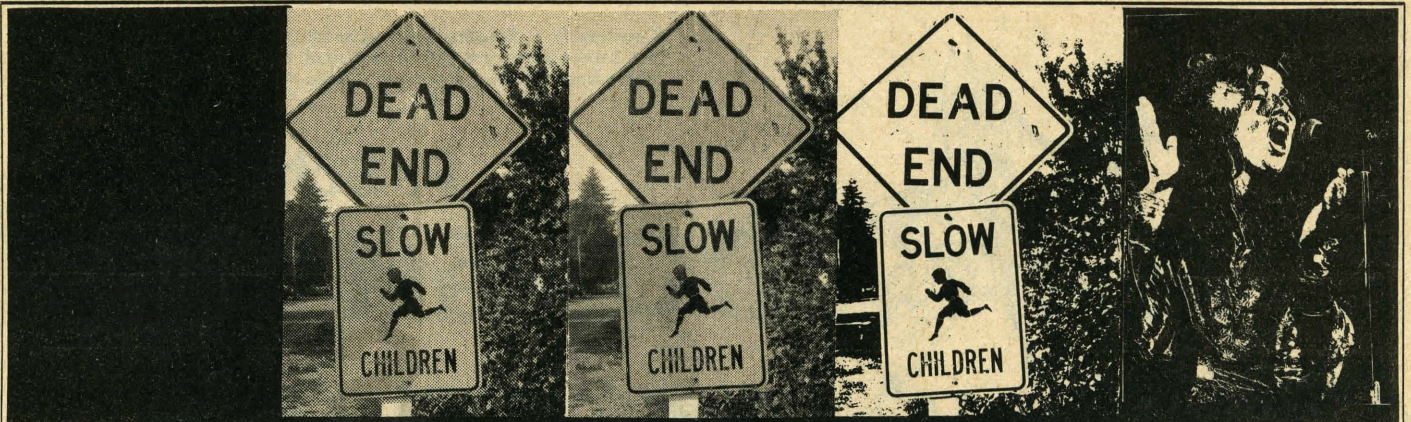
The greatest and most basic concern is that there should always be a sufficient supply of performers. Young musicians must be encouraged to adhere faithfully to tradition and to learn as much as possible from the "old masters." Perhaps incentives such as grants from the National Endowment for the Arts are necessary. We should also take full advantage of those "old masters" while they are still here. The Japanese recognize the importance of their traditional artists by designating the best of them "living national treasures," a policy which enables the masters to live comfortably on a steady income while they perform regularly for the public and teach others. Thorough film and taped documentation of perfor-

mances would see to it that nothing is missed. It would certainly be a tragedy if the songs and knowledge died with their possessors.

While having people who know and can teach the skills is important, we would still be in trouble if there was no way for them to share them with the rest of us. Here again the inevitable question of finances is forced on the issue. TABS does an excellent job, but four to six additional full-time booking services in other areas could increase the number of traditional music performances ten times. For the next few years at least, they would have to be subsidized directly or indirectly, perhaps by making them the official administrators of private and government grants for tours and festivals. Federal or foundation support could also help other organizations such as local folklore societies, coffeehouses, ethnic societies, folklife centers and festivals to broaden their programs and audiences. Finally, improvements like the legalization of street singing, availability of training in the traditional arts in public schools and increased radio and television exposure of the master performers would all contribute to the movement and would strengthen America's consciousness of its unique cultural heritage.

Adapted by Lauri deMoll from a proposal, "Toward a Long Range Plan to Perpetuate Endangered Skills" by John S. Ullman. Copies of the complete proposal are available from him at: 2518 S.E. 17th Ave., Portland, OR 97202.





Our photographer
in his darkroom

85 line screen

100 line screen

unscreened,
regular contrast

high contrast,
unscreened

PREPARING PHOTOS FOR THE PRINTER

Ancil Nance

If you have the money, the best way to have a photo reproduced for printing is to let your printer do it. They have skill and experience and save you the time. Just give them a black and white print. Or, you can have a photo-mechanical-transfer (PMT) made which will give you a screened print you can paste down with the rest of your text copy ready for the printer to shoot. PMTs can be made from b/w prints or color prints. For do-it-yourselfers, however, there is an alternative.

The equipment necessary to home-screen a print is a darkroom with an enlarger and the usual array of chemicals and trays. In addition, you will need a sheet of plate glass larger than the intended print, a thin sponge pad and a Kodak elliptical dot grey screen or any other of the numerous pattern screens available.

Starting with a negative is necessary. If all you have is a print or a slide, then you must recopy to get a b/w negative (more on recopying later). I prefer to make screened prints on Agfa TP-6 paper because it is very contrasty. To screen a print requires that you place a negative in the enlarger, put a sheet of TP-6 on the sponge pad, lay the screen over the paper, compress this sandwich with the plate glass and proceed as in normal b/w printmaking. Only touch the screen and the glass on the edges. The screen spots and stains easily and cannot be cleaned without putting more marks on it. Screens cost about \$22 for the 8-1/2 x 11 size. Save spotted screens for doing small prints, using the unspotted sections.

Using a screen over the paper reduces contrast and ordinary paper loses its snap. Resin-coated papers don't seem to reproduce the dots as well either (that's just a guess). If, however, contrast is too great, it may be reduced by flashing a burst of light (variable, experimental, usually a split second) on the TP-6 paper. Keep the screen in place, pull the negative out of the enlarger and flash after the normal exposure. Flashing is often necessary to put dots into those brilliant white areas.

Printers usually specify glossy prints because sharper reproductions can be made from a print that isn't sending light off in all directions, which happens on rough, non-glossy surfaces. PMTs look kinda gray but seem to produce just as good results as a home-made print screened on TP-6 (which is usually very snappy looking).

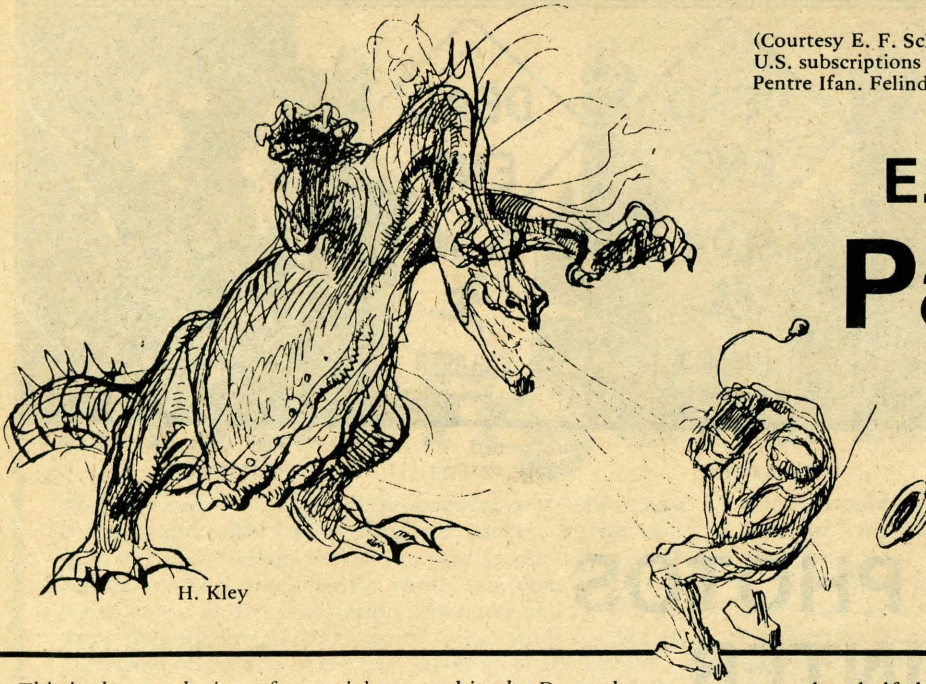
Sometimes a print or a negative has too much contrast to be able to see detail in both the dark and light areas. A cure for this is to screen the print to look good in the dark area and use a flashing technique to produce dots in the white areas. Place the TP-6 into the developer and as soon as most of the image appears (15 seconds) and while the print is still in the developer, give it a short burst of even light from an ordinary 40-watt bulb. The time duration of the burst varies, but usually I find it is only as long as it takes me to turn the light on and off as quickly as possible. This takes some experimenting to keep the print from solarizing or turning grey. If done correctly, more details will appear in previously all-white areas.

Sometimes for special effects a photo with strong graphic appeal can be printed on TP-6 without screening and the printer can shoot it directly with the copy. Grays drop out, leaving high-contrast blacks and whites. Heavy patterns such as tree limbs, or silhouettes, work well.

Earlier I mentioned making copies of slides and prints . . . here is what I do. I use a Macro lens on a 35mm SLR camera, or I reverse the lens on my 2-1/4 camera. I then recopy a slide placed on a Maxwell slide duplicating box, using a small strobe as a light source. Other slide copiers will also work, of course. My setting for recopying a normal slide onto Panatomic X film is f16 at 1/60th of a second. This will vary with slide density or light source. Usually, b/w photos printed from slides tend to block up and lose detail. One way to avoid much of this problem is to shoot fine grain film at a slight over-exposure and then under-develop by a minute or so. Special effects can be obtained by recopying with Tri-X (grainy) or Kodalith (stark b/w) film or paper.

Recopy photographs with the same films as for slides for the same effects. Be careful to avoid glare and reflections on the print. If you don't have use of a copy stand with lights at a 45-degree angle to the copy surface, a cloudy day outdoors will work well. A tripod or copy stand is necessary for work done at less than 1/125 second shutter speed. Macro lenses aren't necessary to recopy photos larger than 8x10, but a single-lens-reflex camera with a built-in meter is really a worthwhile expense.

(Courtesy E. F. Schumacher and Satish Kumar, editor, *Resurgence*. U.S. subscriptions are \$10 surface mail, \$15 airmail, from *Resurgence*, Pentre Ifan, Felindre, Crymych, Dyfed, Wales, U.K.)



H. Kley

E. F. Schumacher Part Two:

This is the conclusion of an article started in the December issue.

Let us follow through a few of the structural effects of modern technology. Its effect on the nature of work has already been referred to. It is, I believe, the greatest destructive force in modern society. What could be more destructive than the destruction of people's understanding? Matters have not improved since Adam Smith's time; on the contrary, the relentless elimination of creative work for the great majority of the population has proceeded apace.

Urban life

What has been the effect of modern technology upon the *pattern of human settlement*? This is a very interesting subject which has received hardly any attention. Professor Kingsley Davis, world-famous authority on urbanisation, says: "The world as a whole is not fully urbanised, but it soon will be." He, like the UN and the World Bank, produces indices of urbanisation, showing the percentage of the population of different countries living in urban areas (above a certain size). The interesting point is that these indices entirely miss the interesting point. Not the degree but the *pattern* of urbanisation is the crux of the matter. Human life, to be fully human, needs the city; but it also needs food and other raw materials gained from the country. Everybody needs ready access to both countryside and city. It follows that the aim must be a *pattern* of urbanisation so that every rural area has a nearby city, near enough so that people can visit it and be back the same day. No other pattern makes human sense.

Actual developments during the last 100 years or so, however, have been in the exactly opposite direction: the rural areas have been increasingly deprived of access to worthwhile cities. There has been a monstrous and highly pathological polarisation of the pattern of settlements. The French planners fight against France becoming 'Paris surrounded by a desert'; in the United States they have coined the term 'megalopolis' to describe the vast conurbations which have arisen while the life has been seeping out of small- and medium-sized country towns. There is 'Boswash' extending from Boston to Washington, DC; there is 'Chicpitts,' a conurbation stretching from Chicago to Pittsburgh; and there is 'Sansan,' from San Francisco to San Diego. Even in the United Kingdom, often referred to as a tightly-packed little island, the pattern of settlement is extraordinarily lopsided, with

more than half the area grossly under-populated and large parts of the other half madly congested.

Do you remember this socialist demand, formulated more than 100 years ago?

Combination of agriculture with manufacturing industries; gradual abolition of the distinction between town and country by a more equable distribution of the population over the country. (*Communist Manifesto*, 1848)

And what has happened during those more than 100 years? Of course, the exact opposite. And what is expected to happen during the next twenty-five years, to the end of the century? Again the exact opposite, with a vengeance. Not urbanisation but, to use a word as dreadful as the phenomenon it denotes, *megalopolitanisation*, a movement that produces, as we know only too well, utterly insoluble political, social, moral, psychological and economic problems.

A paper issued by the World Bank speaks of:

the despondency surrounding the task of ameliorating urban conditions in the developing countries (which) arises primarily from the speed of urban growth and shortage of resources, human as well as financial . . .

Urban administration is woefully lacking in capacity to deal with the problems. . . .

Yet within less than twenty years the present populations and areas of urban centres will account for less than a third of the total.

The paper asks whether there is a possibility "of accelerating the development of small and medium-size towns or creating new urban growth centres." But it loses little time in dismissing this possibility:

Most small urban centres . . . lack the basic infrastructure of transport and services. . . . Management and professional staff are unwilling to move from the major cities.

This tells the whole story: "Management and staff are unwilling to move from the major city!" The proposition, evidently, is to transplant into a small place the technology which has been developed in such a way *that it fits only a very large place*. The people in the small place cannot cope with it; management and staff have to be imported from the 'major cities'; no one wants to come because the proposition does not make economic sense. The technology is inappropriate and that means the whole project is uneconomic.

With a name like mine, I find it easy to understand that to be a good shoemaker it is not enough to know a lot about making shoes; you also have to know about feet. The shoe made for the big fellow does not fit the foot of the little

TECHNOLOGY AND POLITICAL CHANGE

fellow. The small foot needs a different shoe, *not an inferior one* but one of the right size. Modern technology, generally speaking, makes good shoes only for big fellows. It is geared to mass production; it is highly sophisticated and enormously capital-costly. Of course it does not fit anywhere but in or near the biggest cities or megalopolitan areas.

A technology that does fit

The simple answer to this problem does not seem to have occurred to many people. It is: let us mobilise at least a small part of our intellectual and other resources to create a technology that *does* fit the smaller places.

Incredible amounts of money are being spent in trying to cope with the relentless growth of megalopolitan areas and in trying to infuse new life into 'development areas.' But if you say: "spend a little bit of money on the creation of technologies that *fit the given conditions of development areas*," people accuse you of wanting to take them back into the Middle Ages.

One thing, however, can be asserted with confidence: unless suitable, appropriate technologies for efficient production *outside* the main conurbations are created, the destructive tendencies of 'megalopolitanisation' will continue to operate with all that this implies socially, politically, morally, environmentally and resource-wise.

Having traced the effect of modern technology upon the nature of work and the pattern of human settlement, let us now consider a third example, a highly political one, its effect on human freedom. This is undoubtedly a tricky subject. What is freedom? Instead of going into long philosophical disquisitions, let us ask the more or less rebellious young what they are looking for.

Their negations are such as these:

I don't want to join the rat race.

Not be enslaved by machines, bureaucracies, boredom, ugliness.

I don't want to become a moron, robot, commuter.

I don't want to become a fragment of a person.

Their affirmations?

I want to do my own thing.

I want to live (relatively) simply.

I want to deal with people, not masks.

People matter. Nature matters. Beauty matters. Wholeness matters.

I want to be able to *care*.

All this I call a longing for freedom.

Why has so much freedom been lost? Some people say: "Nothing has been lost; but people are asking for more than before." Whichever way it is: there is a gap between supply and demand of this most precious thing—freedom. Has technology anything to do with this? The size and complexity of organisations certainly has a great deal to do with it. Why is the trend of the last 100 years towards bigger and bigger units? Nobody, except a few monomaniac tycoons, likes them. Why do we have to have them? The invariable answer is: because of technological progress. And why don't our engineers produce technological progress in another direction—

—towards smallness

—towards simplicity

—towards capital-cheapness

—towards technological non-violence?

If we ask the engineers, the answer is: "Because nobody has ever asked us for it." And if you ask: "Can it be done?" the answer is: "Of course it can be done if there is a demand for it."

Time to stop

Not very long ago I visited a famous institution developing textile machinery. The impression is overwhelming. The latest and best machines, it seemed to me, can do everything I could possibly imagine; in fact, more than I could imagine before I saw them.

"You can now do everything," I said to the professor who was taking me around, "why don't you stop, call it a day?"

My friendly guide did indeed stop in his tracks: "My goodness!" he said, "what do you mean? You can't stop progress. I have all these clever people around me who can still think of improvements. You don't expect me to suppress good ideas? What's wrong with progress?"

"Only that the price per machine, which is already around the £100,000 mark, will rise to £150,000."

"But what's wrong with that?" he demanded. "The machine will be 50% dearer but at least 60% better."

"Maybe," I replied, "but also that much more *exclusive* to the rich and powerful. Have you ever reflected on the *political* effect of what you are doing?"

Of course, he had never given it a thought. But he was much disturbed; he saw the point at once. "I *can't* stop," he pleaded.

"Of course, you can't stop. But you can do something all

the same: you can strive to create a counterweight, a counterforce, namely, efficient small-scale technology for the little people. What are you in fact doing for the little people?"

"Nothing."

I talked to him about what I call the 'Law of the Disappearing Middle.' In technological development, when it is drifting along, outside conscious control, all ambition and creative talent goes to the frontier, the only place considered prestigious and exciting.

Development proceeds from Stage 1 to Stage 2, and when it moves on to Stage 3, Stage 2 drops out; when it moves on to Stage 4, Stage 3 drops out, and so on.

Better becomes enemy of good

It is not difficult to observe the process. The 'better' is the enemy of the good and makes the good disappear *even if* most people cannot afford the better, for reasons of Money, Market, Management, or whatever it might be. Those who cannot afford to keep pace drop out and are left with nothing but Stage 1 technology. If, as a farmer, you cannot afford a tractor and a combine harvester, where can you get efficient animal-drawn equipment for these jobs—the kind of equipment I myself used thirty-five years ago? Hardly anywhere. *So you cannot stay in farming.* The hoe and the sickle remain readily available; the latest and the best—for those who can afford it—is also readily available. But the middle, the intermediate technology, disappears. Where it does not disappear altogether it suffers from total neglect—no improvements, no benefits from any new knowledge, antiquated, unattractive, etc.

The result of all this is a loss of freedom. The power of the rich and powerful becomes ever more all-embracing and systematic. The free and independent 'middle class,' capable of challenging the monopolistic power of the rich, disappears in step with the 'disappearing middle' of technology. (There remains a middle class of managerial and professional servants of the rich organisations; they cannot challenge anything.) Production and incomes become concentrated in fewer and

fewer hands, or organisations, or bureaucracies—a tendency which redistributive taxation plus ever-increasing welfare payments frantically try to counteract—and the rest of mankind have to hawk themselves around to find a 'slot' provided by the rich, into which they might fit. The First Commandment is: Thou shalt adapt thyself. To what? To the available 'slots'. And if there are not enough of them available, you are left unemployed. Never previously having done your own thing, it is unlikely that you will have the ability to do it now, and in any case the technology that could help you to do your own thing *efficiently* cannot be found.

Intermediate technology

What is the answer? The 'Law of the Disappearing Middle' in technology *has to be counteracted by conscious work*, namely, by the development of 'intermediate technologies' striving for

- smallness
- simplicity
- capital-cheapness
- non-violence.

The fourth criterion, being somewhat different in kind from the first three, may require some further elucidation. To cite an extreme example, consider the political implications of the most violent technology ever developed, nuclear energy—'peaceful' nuclear energy. Consider the security measures required when plutonium and other radioactive material becomes ubiquitous, as it will if present plans for nuclear expansion are implemented. These terrible substances must never leak into the environment; must never get out of control in any way; and must never fall into the wrong hands—of black-mailers, terrorists, political desperados, or suicidal maniacs. There will be a continuous flow of traffic criss-crossing the country, taking these materials through their various stages of processing and use—and nothing must ever go seriously wrong. The connection between technology and freedom is obvious, and it is not difficult to see that the price of freedom, or at least an important part of it, *is the avoidance of violent technologies.*

SEWAGE

WATERLESS TOILET PERFORMANCE

Dry toilets have now been installed and used in enough far-flung places that the bugs in different processes are showing up and attempts made to correct them. We've seen two recent reports on testing in cold climate conditions:

Experiences with the Clivus-Multrum and Mull-Toa Toilets in Northern Manitoba, by J. M. JcKernan and D. S. Morgan, 1976; inquire for price and availability from:

Sym/bios
16-74 Carlton Street
Winnipeg, Manitoba R3C 1N9
Canada

An interim report on testing in extremely cold conditions where normal sewage systems have been found prohibitively expensive or impossible. Installation and operating problems and costs are described (including one case where the basement flooded and the

Clivus almost floated away . . . use your toilet for a lifeboat!). The small, electrically-assisted Mull-Toa was found to be of little practical value in the extreme Manitoba conditions—being particularly sensitive to overloading from beer parties. The Clivus was felt to have a great deal of promise in such northern areas in spite of the lack of kitchen vegetable wastes inhibiting rapid composting action. (TB)

"Waterless Toilets," *Maine Times*, Nov. 19, 1976, 30¢/issue, \$12/year from:
41 Main Street
Topsham, ME 04086

This fine paper keeps coming up with excellent reports . . . it's really worth subscribing to. This six-page report on problems with waterless toilets gives a good, detailed review of operating problems found with various designs, efforts to correct them, and a comparative evaluation of different products. Flies, brick-like solidification of wastes, ventilation, heating problems, energy costs of house air evacuated through the units, and the effects of bathroom exhaust fans sucking air from the units

into the bathrooms—all the nightmares you could dream of. In sum, it looks like things will shake down okay with the whole composting toilet picture.(TB)



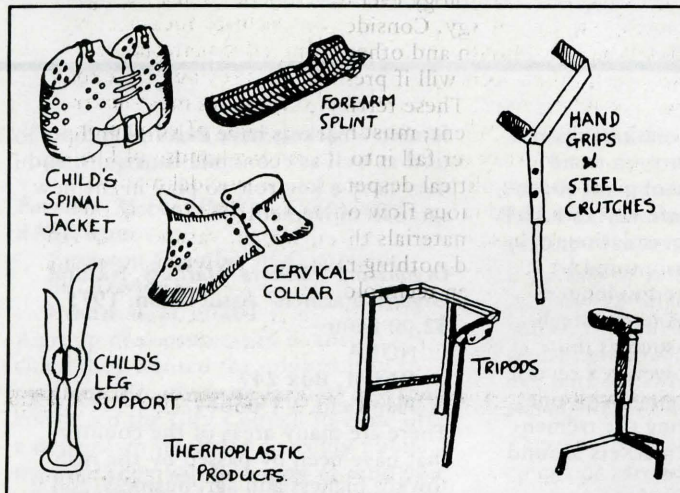
'Pedestal Lion' Closet

APPROPRIATE TECHNOLOGY

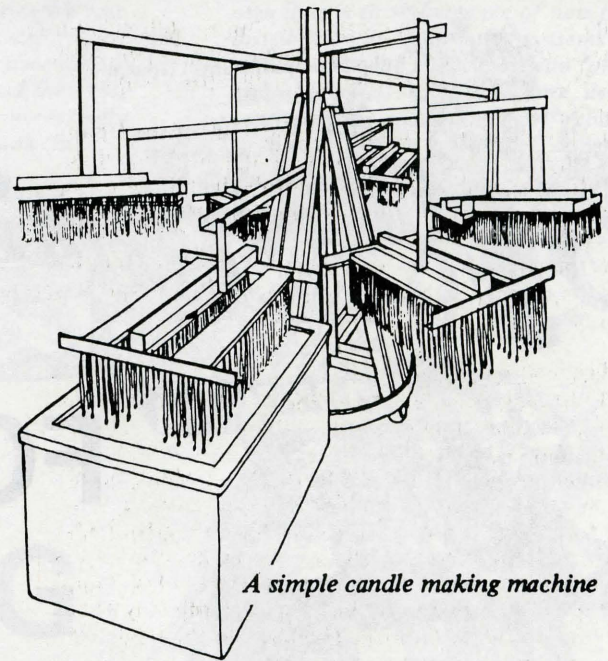
\$10.50/yr. airmail, \$7/yr. surface, quarterly, from:
 Intermediate Technology Publications, Ltd.
 9 King Street
 Covent Garden, London WC2E 8HN
 ENGLAND

The London-based Intermediate Technology Development Group continues to put out a fine series of new publications (write for their publications list). Their quarterly journal, *Appropriate Technology*, is focussed primarily on the needs of developing countries. It provides a useful balanced perspective on our situation in relation to the rest of the world. Their May 1976 issue, for instance, contained articles on the following:

- A Nigerian project making medical aids such as arm splints, spinal jackets and cervical collars from broken plastic drain-pipes. The products are made by marking the pipe with a paper template, cutting out with a hacksaw and handstretching the plastic softened over a flame. The resulting equipment works better than previous products, as they can be easily adjusted by a nurse or doctor for a perfect fit for every individual and are waterproof, strong, cheap and reusable.

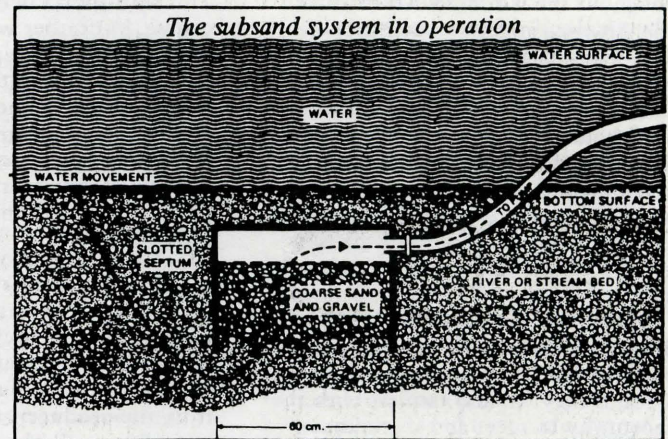


- A rice storage bin of non-reinforced cement mortar, costing less than \$10 U.S. to build.
- An oscillating water-pumping wind mill.
- A process for hand-forming chain-link fences, by the same Nigerian group. A simple manual procedure was worked out that avoids the need for capital-intensive machines, resulting in a very competitive and profitable operation. Four men make six rolls of fencing six feet wide and 25 yards long each week. Each roll sells for £60, paying workers £75 per month and still giving a gross profit of £10-£15 per roll.

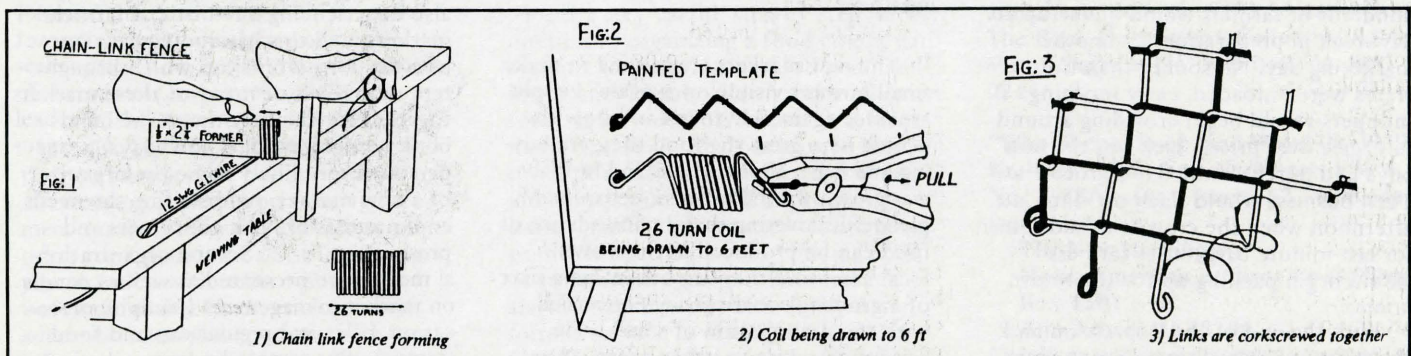


A simple candle making machine

- A candle-making merry-go-round that produces 600 candles per hour with a single operator (could be solar heated?).
- Nethouse horticulture in Botswana, where it is noted that a high percentage of a plant's water requirement is not for growth but to cool it during respiration. Nethouses shade and cool, reducing water use by 2/3, and keep birds, insects and hail out.



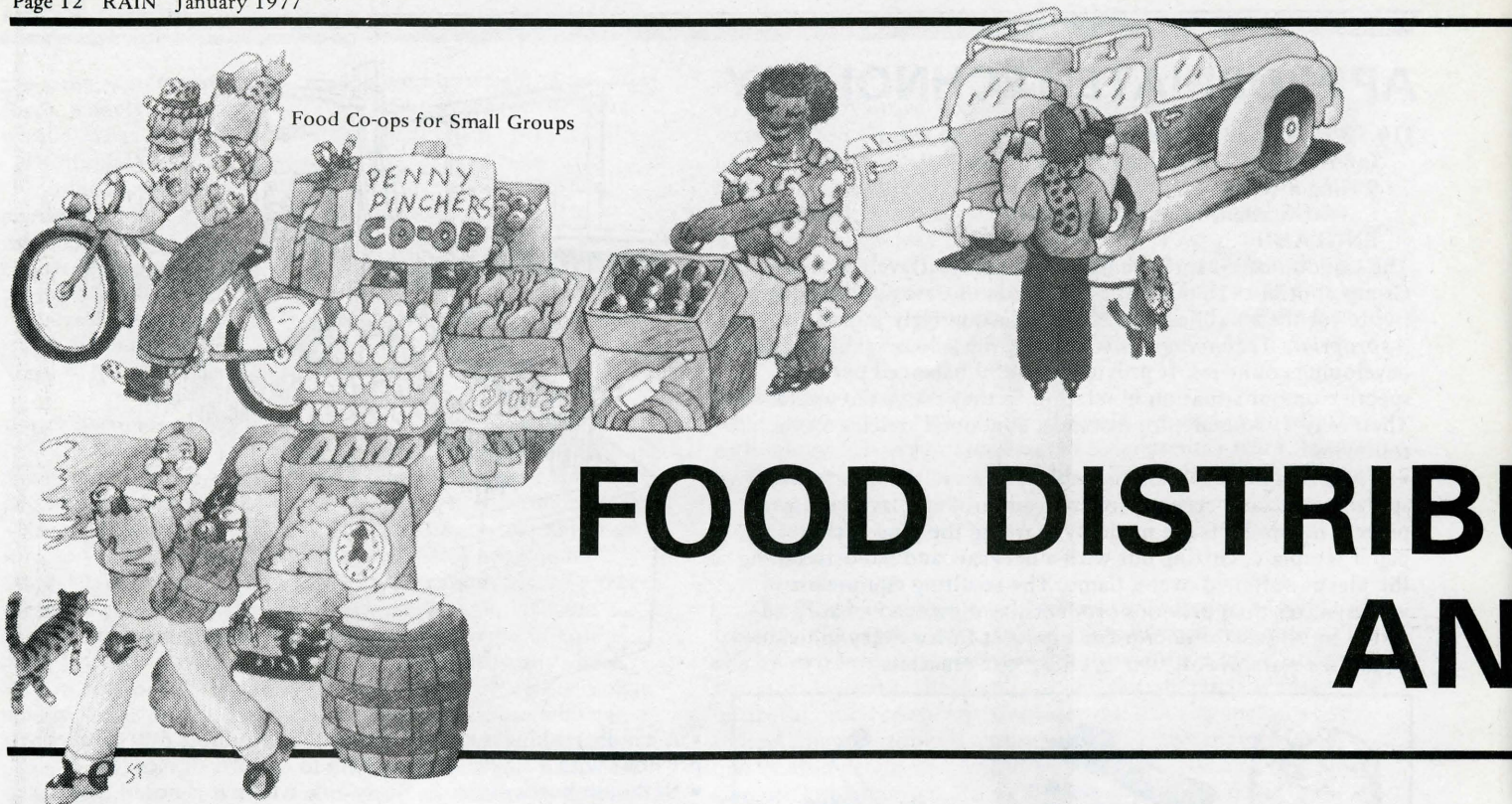
- A simple, low maintenance water filter for villages that is buried in the bed of a stream and uses the sand and gravel already there to filter the water. Total capital costs per person served is figured to run 1 to 5% of any other clean supply.



1) Chain link fence forming

2) Coil being drawn to 6 ft

3) Links are corkscrewed together



Food Co-ops for Small Groups

FOOD DISTRIBUTION AND

FARMERS' MARKETS

The farmers' market remains one of the central institutions of cities and villages throughout the world. In Africa, Asia, Latin America and much of Europe, public markets are a beehive of activity. The market serves as the place where small farmers and gardeners can sell their surpluses of fresh vegetables, meat, milk and eggs, providing them with enough income to keep on the land. And it is also where consumers can get to know the farmers and find the best prices on wholesome, locally-produced foods.

Farmers' markets serve as important cultural centers as well, providing consumers with an intimate connection to the foods they eat and farmers with the opportunity to meet and share knowledge and skills. Such trading centers were a common part of our experience too, until a generation ago. Farmers' markets reached their peak in this country during the Great Depression when in towns and cities across the land hundreds of farmers would queue up at daybreak in preparation for another marketing day. No sooner than the crates were unloaded, early morning shoppers would begin crowding around to haggle over prices, seek out the best buys and purchase the day's groceries. Then business would slack off until late afternoon when the crowds would return for last-minute bargains as farmers would begin packing up for the return home.

With the end of the Depression and the return of "good times" once again,

the number of farmers' markets dwindled rapidly in this country; a trend which paralleled the rise of giant supermarket chains such as Safeway and A&P. This shift didn't occur in isolation, of course, but rather was promoted by such factors as cheap energy, long-distance transportation and new technological developments such as improved refrigeration. However, a reverse trend may now be emerging, with one of the key indicators being the tremendous revival of farmers' markets around the country.

There are many reasons for this new interest in farmers' markets. In purely economic terms they offer the promise of providing the consumer with lower grocery prices by purchasing directly from the producer, thus eliminating the "middle man." The growers, in turn, can get better than wholesale prices for the crops they bring in, helping to make it possible for them to stay in business. But economics is only one of many reasons why farmers' markets are sprouting up all over.

The new markets are serving to make small farmers visible once again. People are once again able to get to know the people who grew the food they are buying and learn about where and how it was grown. In the process, urban people are discovering that an abundance of food can be produced in their own local areas and they are becoming a part of a growing constituency concerned with the preservation of small-scale agriculture close to urban areas. Thus

farmers' markets have cultural and political as well as economic functions, and they have a key role to play in the new agrarian movement.

Organizing Farmers' Markets, Natural Organic Farmers' Association, 1975, \$2.00 from:

**NOFA
RFD 1, Box 247
Plainfield, VT 05667**

There are many areas of the country that have been by-passed by the rush toward bigness and agri-business, and it is here that farmers' markets find their most natural home. One such area is Vermont, and this pamphlet, while written from the experience of forming markets in New England, can be a helpful guide for any region of the country.

Farmers' Market Organizer's Handbook, Deborah Bowler, 1976, \$1.00 from:

**Hunger Action Center
Evergreen College
Olympia, WA 98505**

The Northwest corner of the country is also experiencing a re-birth of farmers' markets, and this handbook grew out of a day-long workshop which brought representatives of many of these markets together for the first time. The handbook recognizes that, nowadays, a city person is very likely to be the organizer of a new market, representing the needs and interests of both consumers and producers. Several organizational models are presented as well as details on market management (equipment, location, rules and regulations and food stamps), plus sample budgets, a listing

As the food we eat is our body's vital link with the soil and the biological processes of the Earth, so these bonds are extended through the complex food distribution and marketing systems that link producer and consumer, countryside and city. These intimate bonds have been severed in recent years by the industrialization of agriculture and the

centralization of marketing by vast corporate empires. The majority of consumers have no control over the source or the quality of the food they eat, while small farmers are increasingly squeezed out of local markets.

One of the key elements in the movement to regain control over our

own lives is the emergence of new food distribution and marketing systems which are laying the foundation for a revival of small-scale agriculture, decentralization and regional self-reliance. In this section we will cover Farmers' Markets, Co-ops, and the growth of Regional Networks which are emerging as elements of the new food chain.

UTION D MARKETING



of resources, and a directory of markets in Washington state.

Farmers' Market Packet, 1976, large SASE from:

**Evanston Chamber of Commerce
807 Davis St.
Evanston, IL 60201**

A group of consumers in Evanston decided they wanted the opportunity to purchase directly from farmers and then convinced the City Council to close off a downtown street for a weekly public market. They will be happy to send you a packet of information on their experience in exchange for a stamped, self-addressed, business-sized envelope.

**Greenmarket
24 W. 40th St.
New York, NY 10018**

Yes, and even in New York City. Write these people for info on their organizing success story.

**Reader Service
Organic Gardening & Farming
Emmaus, PA 18049**

Farmers' markets, with their potential for increasing the viability of small-scale agriculture, are an important part of the organic movement. OGF is a leader in this movement. It's an activist magazine, eager to help people out, and their Reader Service has basic "how to" information available on starting farmers' markets (plus a wide variety of other topics) and can assist in putting you in touch with other resources in your local areas. Please enclose a self-addressed, stamped envelope with any information request.

FOOD CO-OPS

People form food co-ops for many reasons. For some it's simply a way of getting cheaper food — for others it's a way of getting foods that are unavailable through commercial supermarkets—foods that are organically grown, preferably from local sources, and without extensive processing or packaging.

There are now an estimated 5,000 food co-ops of various types in the country, serving over half a million people, with nearly \$100 million in annual retail sales. Food co-ops are becoming a major economic force, and many people feel that they have the potential of laying the foundation for a new economic system based on cooperation rather than profit and exploitation.

**Food Co-ops for Small Groups, Tony Vilella, 1975, \$2.95 from:
Workman Publishing Company
231 E. 51st St.
New York, NY 10022**

This is a very useful, step-by-step introduction to organizing a food co-op, with systems for distributing food and handling money clearly drawn out in diagram form. It includes lots of practical information on such things as how to buy produce and how to understand food industry jargon, as well as providing basic financial information. It is a good primer for getting a co-op buying club or store off the ground, but once it's started, you'll need more detailed information such as is in *The Food Co-op Handbook*.

The Food Co-op Handbook, The Handbook Collective, 1975, \$4.95 from:

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

This is the most in-depth book available on the food co-op movement. It provides an analysis of the "whys" of food co-ops and shows how they can provide a true alternative to agribusiness as usual. It also includes a brief history of co-ops, from their beginning in 1844 to the wide variety that exists today.

The *Handbook* is a valuable tool both for people starting buying clubs or more complex storefront operations, including chapters on finances and inventory control. The book also includes extensive bibliographies and a 40-page national food co-op directory. Written by people involved in the movement, the *Handbook* draws on the experiences of co-ops throughout the country and provides national perspective on the various styles and directions taken by food co-ops in different regions.

The Food Co-op Handbook is also available at bulk rates (\$3.35 each) from The Book Distribution Collective, 45 Mason Terrace, No. 5, Brookline, MA 02146.

"Who Shops Co-op, and Why," by Philip Kreitner in *The New Harbinger*, Vol. 3, No. 2, \$8/yr. for 4 issues, \$2 single copy from:

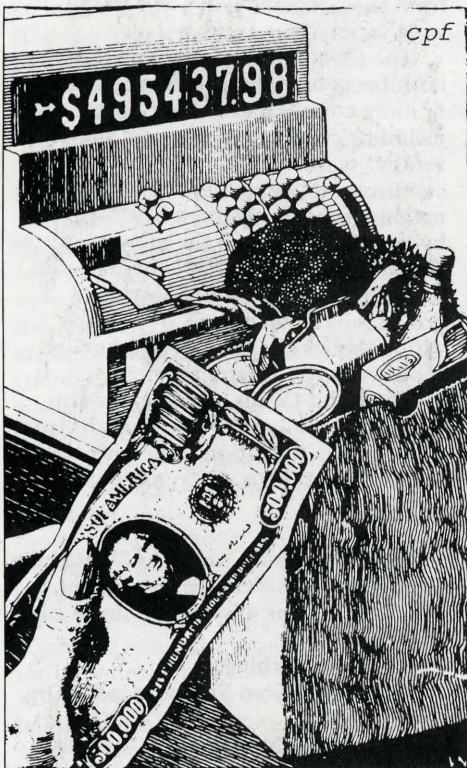
**The New Harbinger
North American Student Co-Op Org.
Box 1301
Ann Arbor, MI 48106**
Excellent doctoral dissertation which

should be required reading for all food co-op staffs, one of many fine articles in an issue focused on food cooperatives.

Food Co-Op Nooz, \$3.00 per year from:
Food Co-op Project
 64 East Lake St.
 Chicago, IL 60601

The food co-op movement in this country is in a period of tremendous, turbulent growth. New co-ops and buying clubs are being formed every day. Warehouses and trucking routes are being established to support and coordinate the rapidly increasing flow of food through the system. Other supportive enterprises, such as bakeries and publication collectives, are springing up, as well as the establishment of collective farms. Yet, with all of this growth, there are also serious problems confronting the new co-op movement, including political dissension and the hard realities of economics.

The *Nooz* is a bi-monthly newspaper for the national food cooperative movement. Published for people actively involved in co-ops, it offers an insider's view of what's going on throughout the country, with background reports on various communities, news of recent events and analysis of critical problems within the movement. The annual subscription includes a comprehensive Food Cooperative Directory, a listing of nearly 2,000 food stores, warehouses, bakeries and resource organizations in the United States and Canada.

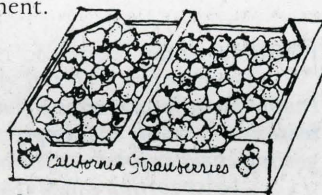


Turnover, Newsletter of the People's Food System, \$3.00/year from:

Newsletter Collective
 3030 20th Street
 San Francisco, CA 94110

The People's Food System of the San Francisco Bay Area is comprised of ten co-op and collective stores and fourteen support collectives, including staple and produce warehouses, a bakery, herb, cheese and yogurt collectives, and an egg farm called "Left Wing Poultry." They are consciously setting out to create a model of a worker and consumer controlled economy. The Food System is seen as an important experiment in collective economics, and *Turnover* reports on its development and its role within the community.

In addition, the newsletter carries incisive articles on the politics of food, reports on the farmworkers' struggles, information on the foods available through the cooperative system and information on nutrition. The newsletter is very well done and provides an excellent view of one of the centers of the movement.



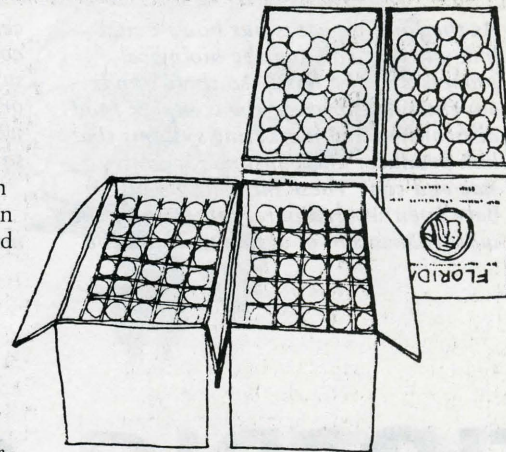
On the Market
 c/o Citizen Action Press
 443 Russel Blvd.
 Davis, CA 95616

A monthly newsletter to provide a medium of communication for farmers, truckers, warehouses and food cooperatives in Northern California. *Loading Dock* is a similar newsletter just begun for Oregon and Washington. Write c/o Starflower, 385 Lawrence, Eugene, OR 9740?.

Scoop, Cooperation in the North Country, \$6.00/year from:

2519 1st Ave. South
 Minneapolis, MN 55404

Another center of co-op activity is in the "North Country"—Minnesota, the Dakotas, Michigan and Wisconsin. It has also been a center of intense controversy in the past couple of years, especially in the Twin Cities of Minneapolis and St. Paul. An intense political struggle erupted there in the spring of 1975 over control and direction of the movement, testing the community's cooperative principles to their utmost. The past two years have been extremely difficult ones in the Twin Cities, and the conflicts there have had a major impact on the cooperative movement around the country. The *Scoop* is an independent newspaper that provides lively and critical accounts of events in the food system of the North Country.



REGIONAL NETWORKS

As the alternative food system has evolved over the past few years, there has grown a higher level of integration between elements of the movement, first within urban areas and then extending out to incorporate major regions of the country. San Francisco, Austin, Minneapolis-St. Paul, Boston, Madison and Washington, D.C., all have extensive "networks" of co-ops and buying clubs supported by warehouses and numerous producer collectives. Much more extensive regional networks have also grown to inter-connect cooperating communities around the nation, with the warehouses having become important centers for the trucking and distribution of ever-increasing amounts of food.

Beyond Isolation, Las Truckaderos, 2nd ed., 1976, \$1.00 from:

Free Spirit Press
 Main P.O. Box 24112
 Oakland, CA 94623

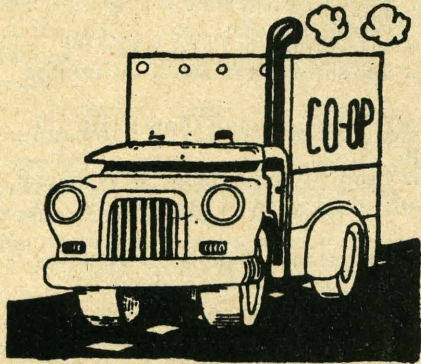
This pamphlet is one of the first major theoretical pieces on the development of a regional network within the alternative food system. Truckers have become the main "curriers" in the food system, carrying the latest news and information from warehouse to warehouse and from co-op to co-op around the country. *Beyond Isolation* was based on the experience of Las Truckaderos, an alternative trucking collective, as they visited collective warehouses up and down the West Coast in 1975. It includes brief descriptions of several collective warehouses in the region, noting their isolation from each other, and then goes on to critique several of the "contradictions" within the movement. This second edition of the pamphlet is especially valuable because it includes a seven-page supplement with reprints from several sources of feedback on the ideas presented, especially on the question of co-ops versus collectives. It's a mighty good introduction to the internal politics of the new food system. A new publication is also in process.

Common Ground,
#3, April, 1976, 50¢ from:

Free Spirit Press
P.O. Box 24112
Oakland, CA 94623

The warehouses are the elements of the food system leading the push toward regional integration. Generally staffed by full-time collectives, and inter-connected with suppliers and other warehouses around the country, they serve as information centers for the rapidly expanding alternative food networks. The warehouses on the West Coast have been holding quarterly conferences for over a year now, bringing together representatives from Tucson, Arizona, to Vancouver, British Columbia, to build regional cooperation.

The West Coast warehouses are perhaps the most outspokenly political in the country. There is a strongly-held view that the collectives are in the vanguard of the food system and that the expansion of the alternative food system is a part of a revolutionary movement. There is an on-going debate on the West Coast (and elsewhere around the country) over such issues as cooperative versus collective structures, whether or not to sell to profit makers and whether or not to support small, organic farmers. *Common Ground* has been the vehicle for debating these and other issues, as well as providing information of large group buys, trucking reports and conferences. This issue gives a good sense of the dynamics of the movement towards establishing a network of collective warehouses on the West Coast.



Northwest Trade Directory, \$3.25 from:

118 N. Bowdoin Place
Seattle, WA 98103

One of the efforts currently under way to facilitate the development of regional networks is the creation of new information systems. The *Trade Directory* is an example of such a system created for the alternative agriculture movement of the Pacific Northwest.

Like New England, the Northwest is an area where there is a great deal of interest in the concept of regional self-reliance. The directory was published by

a number of individuals and groups as a model for a decentralized food system. Over 160 well-indexed pages long, the directory is intended as a vehicle for putting local growers in touch with local consumers. It includes listings for the co-ops of over 100 organic and transition farmers, plus the most comprehensive directory of alternative markets (over 300 co-ops, warehouses, etc.) ever published for the region, as well as information on trucking, storage and processing facilities. The goal of the *Trade Directory* is to decentralize the food system as much as possible, with the hope that future directories will be published for other regions and on smaller scales (for example, communities within each valley or river basin beginning to take on responsibility for providing most of their own food needs).

Farms of Puget Sound, 25¢ plus SASE from:

King Co. Conservation District
35 South Grady Way
Renton, WA 98055

One of the finest models of direct marketing information, *Farms of Puget Sound* is a map that directs consumers to small farmers throughout the Seattle-Tacoma area. The location of each farm is indicated and there is an index describing the kinds of crops available, whether they're U-pick or not, and other details. The first printing of 35,000 copies disappeared within two months, and now the idea is being picked up by communities all across the state (and elsewhere, too). The map is one further step toward local self-reliance. It was published as part of a larger effort to save the remaining agricultural lands near the urban centers of Puget Sound by putting small farmers "on the map." The intention was to graphically show consumers that a significant amount of food is still being grown on small farms in and near the urban areas and that these farms must be preserved.

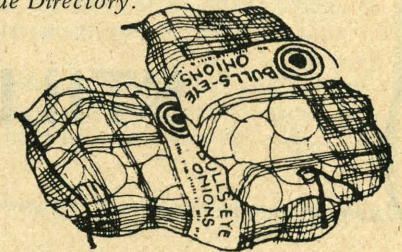
The Cultivator, \$3/year from:
Federation of Cooperatives
Box 107
Hallowell, ME 04347

The New England area has one of the strongest networks of co-ops in the country, and, although many co-op federations publish newsletters, *The Cultivator* is among the best. It provides insights into events within individual co-ops and reports on the growth of the Federation as a whole in a way that really gives you a sense of the movement in Maine. New England is one of the areas where there is a strong drive toward regional self-reliance, and the food system there is viewed very much as a part of that effort.

Alternative Market News, \$5 per year from:

Earth Cyclers
Rt. 1
Edwall, WA 99008

An exchange of information between farmers and co-ops, the *Alternative Market News* is part of the movement toward regional self-reliance in the Pacific Northwest. It is serving as the source for up-dates for the *Northwest Trade Directory*.



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

As mentioned before, these are the folks who have the broadest view of what's happening within the alternative food system and the growth of regional networks around the country. To keep abreast of what's going on, subscribe to their *Food Co-op Nooz*.

— Mark Musick



Mark Musick is our very dear friend from Tilth who is one of the key networkers in the Northwest. He and Tilth (\$5/year for a fine agricultural networking newsletter) can be reached at Pragtrees Farm, Rt. 2, Box 190-A, Arlington, WA 98223.



Geri Taran, also known as Mamma Mangoes, is a vegetarian gourmet cook. We met in the fall of 1970 in Miami, Florida, when Geri came to the newspaper I was publishing to take out an ad for the "Mamma Mangoes Underground Vegetarian Restaurant" she was starting in her home.

Since then, Geri has fed hundreds (thousands?) of people and introduced them to vegetarian natural foods and their nutritional concepts.

She has owned several restaurants, catered weddings and special luncheons, instructed cooking classes and written numerous articles on food and nutrition.

Geri recently moved to the Northwest, where lucky folk were able to sample her nutburgers at the Eugene Saturday Market this past fall.

It gives me great pleasure to introduce my friend Mangoes to the readers of RAIN. (RE)

BREAD...

STILL THE STAFF OF LIFE

by Geri Taran

When I was growing up it was almost a ritual at our evening meal for my father to extoll the virtues of bread-eating to my recalcitrant brother, Barry. He would remind him, and the rest of us too, that without bread many persons would never have survived the bitter Russian winters, etc., etc., etc.

He was right, of course. Since it was first made, bread has proven its value to humankind as an unfailing source of nourishment in an otherwise uncompromising bout of starvation.

Bread has become something quite different from those famous crusts mentioned in numerous tales, however. Those of us who have learned better are returning to the ways of our forebears in seeking out whole grain flours for our daily fare and avoiding the foam rubber-like product offered on grocery shelves all across the country. The white white air-filled dough surrounded by a pale soft crust can never compare to a fat slice of honest brown bread. And in terms of nourishment as well as cost it is economically more sound to have a little home-made love surrounding your peanut butter and jelly.

The texture of bread is affected mostly by kneading, as this develops the gluten (the main protein in bread, originating in the endosperm) and well-developed gluten produces good texture. The use of milk rather than water also affects bread texture, making a smoother, finer loaf. Bread is really very easy to make well; you only "knead" to love what you're doing.

One of the very best books on breadmaking I have ever come across is *The Tassajara Bread Book*. The comments in "A Composite of Kitchen Necessities" at the front of the book says a lot about not only bread but food in general.

To make bread the first step is to get all the ingredients and utensils together and have a clean clear space of comfortable height for mixing and kneading. If you have a nice bread board, so much the better, but a scrupulously clean table top will do. If you have never made bread before, don't worry, follow the recipe and it will be perfect.

Not all breads use yeast. There are other leavenings such as baking soda or baking powder, and some are naturally fermented, as in the case of sourdough breads. Some use nothing at all, such as the East Indian and Syrian flat breads or the hearty thick crusted types which require overnight "proofing" and lots of dedicated kneading. These breads are heavy and need lots of chewing but are worth the effort when simple, honest food is the goal.

Bread making does not require as much time as people generally think and can be slipped in among other duties. Most of the time is consumed in rising, and the bread does that all

on its own. Also, nearly all bread recipes can be made up to the point before the second rising and then frozen for use at a later time. Simply remove frozen loaves from the freezer in the morning of the day you wish to use them, defrost and allow to rise and bake as though they had just been made that day. There is no difference in taste or texture.

Following are several different kinds of bread recipes.

BASIC BREAD

6 c. whole grain flour	1 c. warm water (vegetable broth, milk, etc.)
3-1/2 T. honey	
1 pkg. (or 1 T.) yeast	2-1/2 T. oil (or melted butter)
1 tsp. salt	

Into warm liquid dissolve the honey, then add yeast. Allow to "work" for about ten minutes, then add about two cups of flour, stir well, cover with a clean cloth and set in a warm place. This will form the "sponge."

When this has doubled in size, add oil and salt and begin adding flour, mixing well.

When dough begins to come away from bowl sides, you are ready to start kneading the bread.

Place dough on floured surface and knead (at least 100 times) until bread is elastic and smooth and about the texture of your earlobe.

Shape into loaves, place in oiled pans and allow to rise till doubled in size once again.

Bake at 350° until done (from 40 to 60 minutes). If desired you may brush the top with salted water or egg yolk and water.

This recipe may also be used as rolls. Simply break off pieces of dough, roll with the hands into pieces about 10" long and 1" in diameter and tie in a loose knot, folding the ends under. Then proceed with rising and baking, but don't bake more than 25 min. (These are good sprinkled with herbs, garlic, paprika or what have you.)

ZUCCHINI BREAD

1-3/4 c. whole wheat flour	1 c. grated zucchini
1/2 tsp. salt	2-1/4 tsp. double acting baking powder
1/3 c. honey (more, up to 2/3 c. may be used)	1/3 c. oil
1 tsp. grated lemon rind	2 beaten eggs
1 c. grated zucchini	1/2 c. broken nutmeats

Combine all ingredients well, bake in oiled loaf pan or square cake pan at 325° til done, about 30 minutes.

HEALTHY BISCUITS

2 c. whole grain flour 3/4 to 1 c. buttermilk or yogurt
OR 4-5 T. oil
 1 c. flour 1/2 tsp. baking soda
 1/4 c. corn meal 1 tsp. baking powder
 1/4 c. oats
 1/4 c. soy flour
 1/4 c. wheat germ

Mix ingredients together well, kneading slightly; form into biscuits either shaping them by hand or rolling dough out and using a cutter. Bake on an oiled surface for 8 to 12 minutes at 500°.

To vary these biscuits a number of things may be added, such as: garlic, fines herbes, dill weed, paprika, onion, chives, cayenne, caraway, etc.

CORN BREAD

1-1/4 c. coarse corn meal 1 tsp. salt
 1/4 c. whole wheat flour 3 tsp. baking powder
 2 T. honey 1 egg
 1 c. milk 3 T. melted butter or oil

Combine dry ingredients well, beat egg, add to other liquids, stir in melted butter and combine all ingredients till smooth. Pour into heated oiled pan (cast iron fry pan is good, or a corn bread pan). Bake at 425° for 20 to 25 minutes till done. Corn off one fresh ear may be substituted for 1/4 c. of corn meal.

I like to add sunflower seeds to my cornbread, and I sometimes use orange juice instead of milk; I also like a sesame seed sprinkle across the top before I pop it into the oven.

Good eating. See ya!

IN TOUCH: NORTHWEST

NW Habitat Conference Update

After spending three days with parts of 200 people, I woke up Monday morning with dreams, conversations and feelings for Robin, Charles and Jane in Vancouver, BC, and Mark in Arlington, and Inge, Alwin and Dale in Corvallis, and David in DC, and Brown-raven in Enterprise, and Kerry and Bruce in Portland, and Piper in Edwall, and Skeeter in Colville, and Nancy Bell and Utah Bob in Spokane, and Rainbow on the road . . . and unfinished conversations . . . and wanting to find out more.

It was a fine conference. Given the limitations of what money can buy (we were headquartered at Spokane's Davenport Hotel), the organizers of the conference, the Northwest Regional Foundation, spent a significant portion of their grant to subsidize transportation for the participants—and there was no conference fee, both important factors in attracting a diverse array of folk.

Interest groups were set up around Built Environment, Neighborhoods, Rural Land, Appropriate Technology, Co-ops, Mental Health, Global Concerns, Citizen Participation, Community Development, Environment and Communications.

One thread that ran through all the groups was a concern for how to stay in touch with each other and how to share information about people and groups and ideas with communities back home.

And at the close, someone said, "See you at the next site—wherever and whenever it may be." So . . .

Announcement: Conference on

Regional Cooperation. Monday's mail brought news from Brian and Marshall of the Cascadian Regional Library (CAREL) in Eugene about plans for the next regional conference to be held March 25, 26, 27 at Sandy, Oregon.

Proposal: Regional Networking. And how do we stay in touch between conferences? Brian and Marshall, through CAREL, are working on setting up an Information-Action Clearinghouse for the Northwest. By the time you read this they'll know whether their proposal for a grant for this project has been funded. If not, they will be going ahead anyway, though at a slower time frame. But you don't have to wait—a networking tool is already available . . .

In Print: Leap Year Papers. CAREL has also just (finally) published the proceedings of the Leap Year Conference held last February in Sandy, Oregon.

In addition to giving address access to hundreds of groups involved in regional cooperation, the booklet includes papers on: How Different Co-ops Structure Themselves, What It Takes to Start a Politically Oriented Bank, How Land & Equipment Can Be Placed in a Community Trust, How to Develop a Co-op Bookkeeping Procedure Everyone Can Share, Guidelines That Can Be Used to Insure Smooth Running of a Group Meeting, and How to Organize & Supply a Large-Scale Conference.

Northwest Regional Foundation (NRF)

Box 5299
 N. 507 Howard St.
 Spokane, WA 99205
 509/455-9255

Bob Stilger, Susan Virnig,
 Don Hornbeck

Organizers of the NW Habitat Conference. Published *The Challenge of Habitat 1 & 2*, \$3 apiece, resource packets prepared for the conference by the editors of *Futures Conditional*, Nancy-Bell Coe and Roseanne Nolan.

Cascadian Regional Library (CAREL)

Box 1492
 Eugene, OR 97401

Brian Livingston, Marshall Landman
 Contact CAREL for information on the upcoming conference on regional cooperation, their regional networking proposal, and *The Leap Year Papers*, 64 pp., \$1.95.

—Rhoda Epstein



LETTERS

Friends,

In the spring of 1975, I started the "TRUE SEED EXCHANGE." Its purpose is to contact people who save old varieties of garden seeds and then put them in contact with other gardeners. This way they can swap and spread their old varieties and help new gardeners learn how to save their own seed. The Exchange works like this. If you are presently keeping seeds that you know from *your personal experience* run true—send me your name, address and a list of the seeds you expect to have at the end of the 1976 gardening season. (This also includes bulbs, plants, root cuttings, grains and legumes.) Sometime next winter, I will have a list printed of all the people's names, addresses and what they have. Anyone can get this list by sending me 50¢ to cover printing and mailing costs. Send it now, if you want. The people who participated in the Exchange last year are really fired up about it, and so am I. It lets serious gardeners in like climates correspond and swap seeds. It will give all of us seeds we can save from year to year (which is not only economical, but may soon be downright vital.) And it will help to spread a lot of old, reliable, superior varieties that might otherwise be lost. There must be thousands of older gardeners in our mountain, rural and hill areas who are saving seeds that have been passed down for many generations. I believe that it is of the utmost importance to spread these seeds as much as possible. Please don't use the Exchange as just a source of free seeds, because it could easily be ruined by more taking than giving. This should really be an exchange among seed savers. I wish you all a beautiful garden this summer. Let's all save extra seed this year from our best. And then share them.

True Seed Exchange
Kent Whealy
Rural Route 2
Princeton, MO 64673

Dear Rainfriends,

As an owner of a Fisher woodstove for over two years I feel I must take issue with Bill Day's dismissal of the stove as a "throwaway." Even though Mr. Day may have spent two generations repairing woodstoves, it is doubtful that he has seen enough Fishers to make such a generalization.

The Fisher model I own is the largest one made, which will handle wood length up to 32 inches. The welded box is made of 5/16 and 1/4 inch plate steel, not cast iron or sheet metal. The only part of the stove which is cast is the door, which is molded tongue-in-groove to prevent unwanted airflow. The draft controls are door-mounted pipe caps welded to 1/2" bolts, which are tap threaded through the door. This allows for various combinations of air flow, depending on how hot or cool you want your fire. The inside is lined with one-inch fire brick all across the bottom (32 x 18) and eight inches up the sides and rear.

In the time the stove has been in use it has required virtually no maintenance. I have sanded and repainted the upper cooking surface (20 x 18) just slightly to eliminate some rusting which occurred due to accumulation of moisture. Also, I've broken six or eight of the fire bricks by jamming wood in with too much force. That's it. I'd like to see a "throwaway" live up to that.

I called Barbara Jorgenson, who is the local Fisher dealer, to inquire about the stove's successes or failures since I bought mine. She told me that, contrary to Bill Day's implication, Fisher stove dealers are not dropping like flies. In fact, there are now forty franchises nationwide. She did say that three early Fisher dealers in the Portland area were priced out of business by the dubious practices of a fourth. Barb said that her Lynwood, Washington, shop has sold nearly 2000 stoves in the last two years, and in that space of time only three defective cast doors have required replacement.

As for a guarantee, Barb told me she personally tells every Fisher purchaser that if within thirty days the buyer finds a stove he or she would rather have, they can have their money back on the Fisher. She says no one has ever come back for their money. All my dealings with her regarding my stove have been amiable and she has always satisfactorily answered any questions I've had.

If it's of any interest, a friend of mine from Norway saw my Fisher and said it was superior to the Jøtul. Also, the prices on the Fisher models have not been raised in two years (mine cost \$350 and has probably saved me twice that much). Maybe the reason Bill Day thinks the Fishers have faded away is because he's never had to repair any. In any case, any future consumer reports should include statistics and detailed background on the products being reviewed. That will avoid misunderstandings such as this one with the Fisher stove.

Sincerely,
Jef Jaisun
12860 136th Ave. NE
Kirkland, WA 98033

Dear Jef,

My criteria for judging woodstove durability requires that they have a life expectancy of 15 to 70 years, depending upon the original investment.

Requests for major service (warped door frames, warped sides, inoperable draft controls) on 3- to 4-year-old Fishers are being received now!

Please refer to my letter in the Feb/March 1976 issue of RAIN for more details.

Bill Day

Human Scale

While monitoring RAIN subscriptions, I recognized the name of a new subscriber, Kirkpatrick Sale, author of SDS: Ten Years Toward a Revolution (1973), and Power Shift: The Rise of the Southern Rim and Its Challenge to the Eastern Establishment (1975).

I wondered if his subscription to RAIN indicated a new project he was working on and wrote asking him. And, yes, it is a new project. (RE)

Rhoda,

I've been working with the idea of doing a book on practical anarchism for, oh I guess, ten years now, and I finally decided that I had to get around to doing it, both for my peace of mind and so as to put forth an answer to the what-do-these-people-want? question that might be important just now, important for the askers both hostile and friendly and for movemental folks who may be floundering a bit.

I want to try to show that a completely decentralized, communal society is not only necessary, given the way we are screwing up the world with ever-greater growth and ever-larger and more oppressive institutions, but possible as well; that in fact people can live on what I want to call a *human scale* (that's the title of the venture as well)—that it is possible to devise cities of a small size based on community living, in which such techniques as solar heating, recycling, composting toilets, etc. can be used to provide most of the elements of self-sufficiency; that it is possible to establish workers' self-management over offices and factories and shops, running the economy in small units sufficient for a high level of material satisfaction with individual equality and without exploitation, hierarchy, pollution, etc.; and that it is possible to operate with direct, consensual democracy in small units, and that this is the only way to create the sense of participation necessary to end crime, anomie, loneliness, poverty and the like. In short, social, economic and political life on a human scale.

To try to make this convincing, I am searching for hard practical examples of how different societies, and different groups within this society, have actually succeeded in small-scale operations of various kinds. This eventually led me to the Institute for Local Self-Reliance in Washington last spring, and it was there that, belatedly, I came across RAIN.

I'd be grateful if you could kind of mention my project around, and see if anyone would be interested in adding to

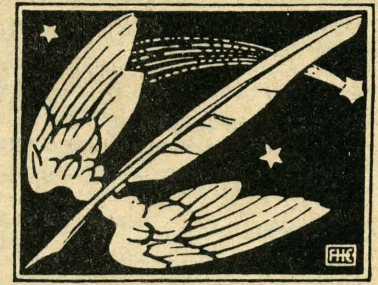
it, sending information, pushing me in new directions, suggesting books, mentioning projects and communities, and the like, for I have a lot to learn and I'll be taking a year or more to work on it. And if anyone wants more clarification, I'd be happy to try that, too.

Kirk Sale
113 W. 11th St.
New York, NY 10011

Dear Tom,

What are we doing? I'll begin with my standard explanation. Since 1955 the American Council of Voluntary Agencies for Foreign Service, Inc. (ACVAFS) has been operating the Technical Assistance Information Clearing House (TAICH) under contract with the Agency for International Development (AID) for the purpose of maintaining an information service, primarily on U.S. nonprofit organizations and their overseas development assistance programs, but also on other organizations and matters that are related. TAICH publishes directories, reports and a quarterly newsletter and endeavors to answer queries of any interested organization or individuals on different aspects of overseas development assistance.

By the inquiries we receive we tend to get an idea of development concerns, and if there is one thing that is capturing people's interest now it's appropriate technology (of course AID \$20 million is no deterrent). This has been a personal interest of mine for some time, and, along with Mike Green



(VITA), Byron Kennard, Hazel Henderson and Bob Swann, I was involved in an abortive attempt at an "International Appropriate Technology Fair" several years ago. I would say that the whole a.t. concept is only now, however, beginning to receive the attention and coordinated efforts it deserves. When I receive an inquiry now about a.t. in general—of which there are a number—I just despair. There is just too much to say to begin at the beginning. . . . As an unwilling inhabitant of New York City, my feelings that a.t. is the only solution for our society verge on the fanatic and lead me to gratuitous proselytizing on the slenderest of openings.

Very sincerely,
Jane M. Meskill
TAICH
200 Park Avenue S.,
11th Floor
New York, NY 10003

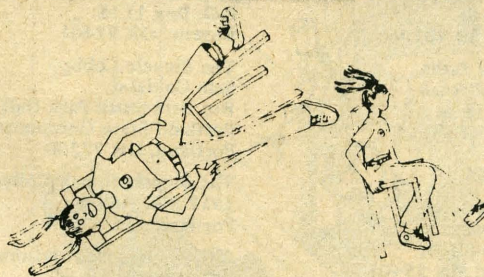
Note: TAICH News contains a good bit of useful information on international organizations doing a.t. work. They've had issues on development of small industry and a.t. for agriculture. Free from TAICH. (TB)

GOOD THINGS

Practical Puffins: Cooking, Gardening, Carpentry, Bicycles, Strange Things (to do and make) and Body Tricks by McPhee Gribble Publishers, \$1.50 each from:

Penguin Books
625 Madison Ave.
New York, NY 10022

These books are filled with project ideas and easy-to-follow instructions for practical and harmless deeds that kids will want to do. *Carpentry* shows the safest ways to use tools, how to make a pair of sandals and a chair, but also how to build (yeah!) a Billy cart. *Strange Things* suggests that gardening and hatching chickens as well as water diving are fun things to do. And maybe best of all, *Body Tricks* has all kinds of funny and creepy things your little goblins can do to startle you just when you're fixing dinner! They're good fun and, of course, wise teaching tools for 7-12-year-olds. (Lauri deMoll)



The Reasons for Seasons, by Linda Allison, \$3.95 from:
Yolla Bolly Press
Covelo, CA

"Spring is when the hours of light begin to outnumber the hours of night. It's the time of great awakening. Plants spring to life with new green. The Seven Sisters appear in the sky in north-east Brazil, signaling the Turkanos people that it's time to plant. Insects appear. Fish spawn. Amphibians lay their eggs. It's a good time to be born." So begins the "Great Megagalactic Trip Without Moving from Your Chair," a delightful book for 7-12-year-olds which traverses the four seasons with clear explanations of astronomy, navigation and some trans-

cultural seasonal rites. Offers very swallowable lessons about birds, animals and plants and gives hundreds of intriguing project suggestions for everything from warm farms to body clocks. It's a book that allows kids (and grown-ups) to learn by doing and thinking about things for themselves and to have a great time in the process. (Lauri deMoll)

Cyclateral Thinking, Douglas B. Smith, ed., 1975, \$3 from:
Urban Bikeway Design Collaborative
W20-002 MIT
Cambridge, MA 02139

This booklet has sections by different people on community planning, funding and bicycle education, as well as design problems and case histories of different bikeway systems. No definitive solutions but lots of examples and ideas. The people at UBDC (who also did *Sprocket Man*—see RAIN, Oct. 1976) have obviously done a lot of research and have gained a lot of experience in bikeway design, but, more importantly, they are bikeriders themselves, and their love shows through. (LdeM)

(Thanks to the Philadelphia Bicycle Coalition)

ALABAMA

Alabama Bicycle Council
c/o Philip C. Davis
3024 Pelzer Ave.
Montgomery, AL 36109

CALIFORNIA

Bicycle Facilities Committee
Clifford L. Franz, Chairman
L.A.W., Inc.
110 Bloomfield Road
Burlingame, CA 94010

California Assoc. of Bicycle Organizations
John Forester, President
782 Allen Court
Palo Alto, CA 94303

East Bay Bicycle Coalition
John Carroll, Chairperson
P.O. Box 23934
Oakland, CA 94623

San Francisco Bicycle Coalition
701 Ulloa St.
San Francisco, CA 94127
Attn. Darryl Sktabak

Santa Clara Valley Bicycle Assoc.
Bob Shanteau, President
P.O. Box 662
Los Gatos, CA 95030
408/969-2778

Western Wheelers
c/o Carol Peterson
P.O. Box 183
Menlo Park, CA 94025

COLORADO

Bicycles Now!
c/o Dr. Fred Wolfe/DRCOG
1776 S. Jackson St., Suite 200
Denver, CO 80210
303/758-5166

Sangre de Cristo Cycling Assoc.
3601 Azalea
Pueblo, CO 81005

CONNECTICUT

Connecticut Bicycle Coalition
c/o Mrs. Lewis A. Dibble, Jr.
510 N. Church St.
Naugatuck, CT 06770

DELAWARE

Delaware Friends for Bikeology
2117 Meadow Lane
Wilmington, DE 19810

GEORGIA

Southern Bicycle League
c/o J. Berryhill
242 Superior Ave.
Decatur, GA 30030
404/377-4707

ILLINOIS

League of American Wheelmen
19 S. Bothwell
Palatine, IL 60067
312/991-1200

INDIANA

Zero Auto Growth
P.O. Box 44666
Indianapolis, IN 46204

KANSAS

Bi-State Ad Hoc Committee for Better Cycling
P.O. Box 2203
Shawnee Mission, KS 66202

KENTUCKY

Bluegrass Wheelmen
c/o Donald H. Burrell
882 Maywick Drive
Lexington, KY 40504

MASSACHUSETTS

Boston Area Bicyclists Assoc.
Building W20-002
84 Massachusetts Ave.
Cambridge, MA 02139

Bicycle Repair Collective
51 S. Prospect
Amherst, MA 01002

MARYLAND

Baltimore County Task Force on Bikeways
Baltimore County Office Bldg.
111 W. Chesapeake Ave.
Towson, MD 21204

Citizens for Bikeways
110 E. 25th Street
Baltimore, MD 21218
Attn Joe Gardiner

Oxon Hill Bicycle Club
P.O. Box 18081
Oxon Hill, MD 20021

MICHIGAN

Ann Arbor Bicycle League
c/o Ecology Center
417 Detroit St.
Ann Arbor, MI 48104

Detroit Bike Paths
c/o Tom Holleman
Harrington Road
Rochester, MI 48063

MINNESOTA

Gopher Wheelmen
c/o Chris Kvale
1924 South 8th St.
Minneapolis, MN 55404

MISSOURI

Ecobike
c/o Jack Ashmore
5531 Locust
Kansas City, MO 64110

MONTANA

Bikecentennial 76
c/o Dan and Lys Burden
317 Beverly Ave.
Missoula, MT 59801

Friends for Bikeology
c/o Colleen Martin
1411 Ave. C
Billings, MT 59102

NEW JERSEY

Citizens for N.J. Bikeways
555 Mt. Prospect Ave., 5D
Newark, NJ 07104

NEW YORK

American Bicycle Hall of Fame
c/o Dr. Roland C. Geist
260 West 260th St.
New York, NY 10471

Bikeways for Buffalo
c/o Joan Smith
309 Highland Ave.
Buffalo, NY 14222

Mohawk-Hudson Wheelmen
Patricia Gerfin
1087 Wendall Ave.
Schenectady, NY 12308
518/346-1801

Transportation Alternatives
20 Exchange Place, Rm. 5500
New York, NY 10005

OHIO

Bike for a Better City
Timothy Bristol
72 West Norwhich
Columbus, OH 43201
614/294-6003

Mattilou Catchpole Sierra
Club Bicycle Coalition
992 Quilliams Road
Cleveland Heights, OH 44121

OREGON

Alternative Transport Project
P.O. Box 1135
Eugene, OR 97401

The Bicycle Lobby
Sam Oakland
Rm. 405 Small Park Hall
Portland State University
Portland, OR 97200

The Bicycle Repair Collective
1912 S.E. Ankeny
Portland, OR 97214

Citizens Bicycle Advisory Committee
City of Portland Bureau of Planning
424 S.W. Main, Rm. 205
Portland, OR 97204

Oregon Bicycle Transit Study
Dept. of Urban Planning
University of Oregon
Eugene, OR 97403

PENNSYLVANIA

Bike, the Bicycling Community of Bethlehem
Hans Wuerth
P.O. Box 1151
Bethlehem, PA 18018

East Coast Bicycle Congress
5300 Akron St.
Philadelphia, PA 19124

Philadelphia Bicycle Coalition
John Dowlin
3410 Baring St.
Philadelphia, PA 19104
215/382-6693

RHODE ISLAND

Yankee Pedal Pushers
c/o Ted Lotring
70 Benevolent St.
Providence, RI 02906

SOUTH CAROLINA

Coastal Cyclists
19 Chalmers St.
Charleston, SC 29401
Attn. Leah Martin

TEXAS

Citizens for Environmental Coalition
1200 Bissonnet
Houston, TX 77005
713/524-0607

VERMONT

Vermont Bikeways Coalition
c/o Ben Boshier
68 Buell St.
Burlington, VT 05401

VIRGINIA

Bike Commuters of EPA
c/o Nina D. Rowe
3612 N. John Marshall Dr.
Arlington, VA 22207

WASHINGTON, D.C.

Washington Area Bicycling Assoc.
1346 Connecticut Ave. N.W.
Room 323
Washington, DC 20036
202/223-0003

WISCONSIN

Central Cycling
c/o Ed Deuerlein
4746 N. 29th St.
Madison, WI 53209

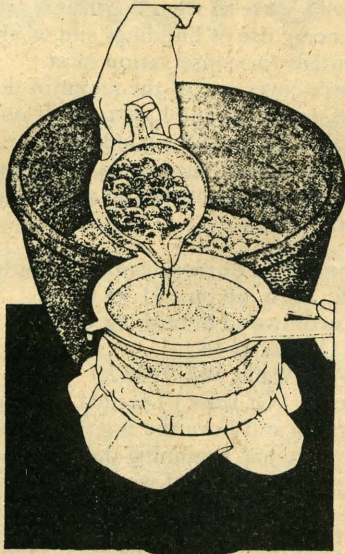


U.S. BICYCLE ACTIVISTS

Cyclateral Thinking

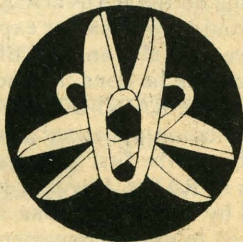


APPROPRIATE TECHNOLOGY



The Guide to Self-Sufficiency, John Seymour, 1976, \$11.95 from:
 Popular Mechanics Books
 224 W. 57th Street
 New York, NY 10019

Distillations from Seymour's lifetime of managing an 18,000-acre sheep ranch, living on a 5-acre self-sufficient smallholding, being a veterinary livestock officer in Africa, working in a copper mine, surveying and game hunting, living on a fishing boat, writing and broadcasting. This is one of the best of this genre—comprehensively illustrated and covering in detail a range of skills not usually covered in such books—working stone and splitting slate, basketry, charcoal making, barrelmaking, thatching and much more. A refreshingly broader, more experienced and more detailed presentation than most American counter-culture based books.



Scissors Sam Says Be Sharp, \$1.50 from:

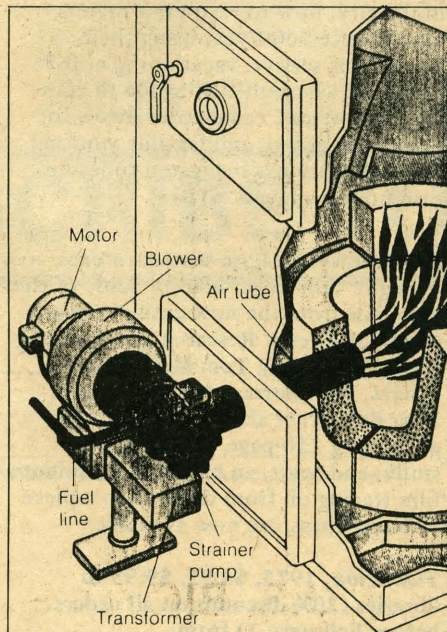
Scrimshaw Press
 149 Ninth Street
 San Francisco, CA 94103

An intricate thread weaving being sharp, care of tools and the life of a wandering tool sharpener. Lots of good advice for low-tech tool sharpening and on doing something of value for people while retaining valued freedoms.

WASHING MACHINES

You're right—the best thing is to wear clothes that require less washing and ironing—sweaters, cotton shirts, dark or strong colored fabrics that don't need "cosmetic" cleaning. But eventually things need cleaning. Traveling in Japan a few years ago we came across two simple washers. The cheapest, costing all of 50¢, was a plastic plunger like a Plumber's Friend. Used with a bucket and warm water left in the Japanese bath, it turned out to be a real effective way to wash cloths in youth hostels. We later found a tin version from 1873 in a Goodwill Store in Portland. You could make one yourself from a normal Plumber's Friend. Same scientific agitator action as in a \$300 automatic wash washer, but without all the machinery attached.

The Japanese also produce a mini-washer and dryer—smaller and cheaper than American versions. The most interesting feature is that they use a very fast spinning drum to extract almost all the water from the clothes, allowing them to dry very rapidly even in Japan's humid summer. A very effective alternative to American clothes dryers that use heat to evaporate the moisture instead of just removing it. The Hoover Company, North Canton, Ohio 44720, imports or makes these for the U.S.—also mini-refrigerators.



Reader's Digest Complete Do-it-Yourself Manual, 1973, \$13.95 from:
 Reader's Digest
 Pleasantville, NY 10570

Most home repairs aren't really difficult. The major hangup is figuring out the tricks, how to go about it, and what tools you really do or don't need to bother with. This manual covers almost every kind of situation you're likely to

run into, and gives simple step by step instructions/photos/drawings explaining the essentials you need to know. If you need a little self-confidence to get into figuring things out for yourself, this is quite worth the money.

TRANET, \$15/year for individuals, quarterly from:

TRANET
 c/o Wm. N. Ellis
 7410 Vernon Square Drive
 Alexandria, VA 22306

The first issue of the *TRANET* newsletter/directory is out and seems headed for a useful role for people involved in international aspects of a.t. The newsletter contains names, addresses and current projects of active a.t. groups around the world, provides information on relevant activities of the U.S., its agencies and member governments and valuable resources for a.t. workers in developing countries. (Tom Bender)

New Address:
 Northeast Carry
 110 Water Street
 Hallowell, ME 04349
 They are setting up an a.t. lending library.

ENERGY

Woodburning Stoves, Bob and Carol Ross, 1977, \$10 from:
 The Overlook Press
 c/o Viking Press
 625 Madison Avenue
 New York, NY 10022

The most detailed and thorough manual we've yet seen on design, operation and installation of wood stoves. Gives a model description of features and design of a very wide range of heaters, using a fireplace for heating, and converting fireplaces to wood heaters. Complements Shelton's work on efficiencies and Bill Day and Albie Barden's guides to actual use performance of various units. Appendices with houses designed for wood heat, details of Ken Kern's barrel stove, chimney installation, manufacturers, tables comparing wood and other fuel costs with various heater efficiencies. (TB)

Energy and Employment in New York State, Draft Report, May 1976, available from:

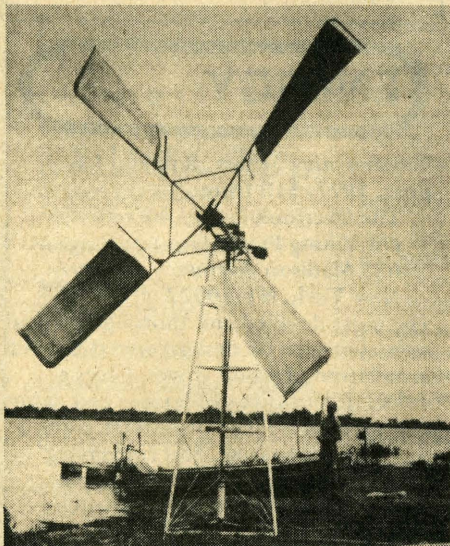
Legislative Commission on Energy Systems
 State of New York
 828 Legislative Office Building
 Albany, NY 12224

This analysis shows that New York State has three viable, indigenous alternatives to coal and nuclear energy that can be

employed immediately at lower capital and energy costs than the conventional nuclear or coal options while at the same time creating more employment within the state for an equivalent amount of energy produced than either nuclear or coal. These alternatives are conservation, wood and wind. In each case the energy production or savings of the alternative have been compared to the equivalent energy from coal or nuclear for the worker years on a thirty year cumulative basis:

1. Conservation: Up to three times the employment at lower or equal capital costs and much lower energy costs.
2. Wood: From four to six times the employment at equivalent capital costs and lower energy costs.
3. Wind (without storage): One and one-half times the employment at lower capital costs and equivalent energy costs.
4. Wind (with storage): Twice the employment at slightly higher capital and energy costs with available technology.

*Solar energy and waste recovery were not studied in detail but appeared to have favorable employment impacts. (TB)



Experimental 18ft diameter four-sail wind-mill with feathering blades operating downwind of the tower.

Food from Windmills, Peter Fraenkel, 1975, \$8.15 surface, \$10 airmail from: I.T. Publications Ltd.

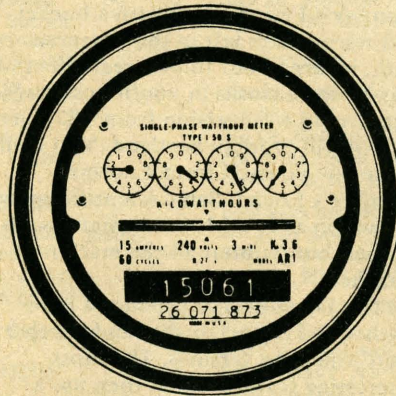
9 King Street
London WC2E 8HN England

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

The Garbage Book, Canadian Office of Energy Conservation, June 1976, free from:

Box 3516, Station C
Ottawa, Ontario, K1Y 4G1
Canada

"How to Save Energy and Money by Throwing Out Less"—a good companion to your other living lightly booklets. It's always nice to add new ideas. (LdeM)



HERE'S HOW YOU READ ABOVE: 2 3 5 6

Using Energy Wisely, free from: Mayor's Energy Office
124 W. Ashley St.
Jacksonville, FL 32202

A fine information packet on energy that can serve as a good model for other communities. Outlines energy use in the city, how to read your meters, how to save \$600/year using their shuttle bus service, vacationing near to home, a "where-to-call" guide to community services, calculation sheets for home energy use, and flexible working hours the city has instigated to lessen rush hour problems. (TB)

Good News for those who have been trying in vain to get hold of some of the materials from the now-extinct Oregon Office of Energy Research and Planning (made famous by Tom McCall, Joel Schatz, Bob Murray, Larry Peterson, Tom Bender, et al.). *Transition*, the pioneering 250-page Oregon energy study, and *toast*, an excellent 11-minute film tracing oil from the well to a piece of burnt toast, are now available.

Transition, 1975, \$6.95, \$9.95 to libraries (20% discount on all orders before February 1) from:

Portland Youth Communication
Center
1826 N.E. 3rd
Portland, OR 97217
and

toast, \$180 (inquire about rental) from:

Earth Chronicles
1714 N.W. Overton
Portland, OR 97209 (LdeM)

Energy Conservation in Building Design, 1974, \$5 from:

The American Institute of Architects
1735 New York Avenue N.W.
Washington, DC 20006

A good beginning primer for architects to give a sense of what contributes to the energy use of buildings and where potentials for conservation exist. Doesn't cover any of the reams of detailed, technical and how-to stuff now available, but is still a good place to start for anyone needing an overview not buried in numbers and tables and charts. (TB)

Becoming an Environmentalist, Barbara Clark, 1976, 60 pp., \$1.95 from:

Cottonwood Publishing Co.
P.O. Box 1644
Walla Walla, WA 99362

Subtitle: "Or How I Learned to Stop Worrying and Love the Energy Crisis." If you are just beginning the long, slow and joyful process of weaning you and your family from the consumer-oriented /energy-full lifestyle that has become the American Dream, this little book will give you courage and a few ideas. Here's how Barbara Clark and her family did it . . . room by room and bit by bit. Enjoy. (LdeM)

WE WILL NOT PUBLISH AN ISSUE OF RAIN NEXT MONTH, so the next issue you see will be about two months from now. It will be Volume III, No. 5, dated February/March 1977, and should be mailed in early March. It's not a double issue (for those of you, like libraries, who need an official count of issues received).

Instead of writing and putting together a magazine in January, most of RAIN's staff will be working on the RAINBOOK, and would drop dead or explode if there were also an issue of the magazine to be done. For new readers, the RAINBOOK will be a compilation/updating/tying together of the first two years worth of RAINs. It will be published by Schocken Books, and we need to give them camera-ready copy in January.

Correction:

November 1975, page 3—the price of *First Steps in Village Mechanization* by G. A. Macpherson is \$9.50.

Memberships for *Everything and Everybody* are \$5 for one month, \$15 for 6 months, \$25 for a year and \$100 for a lifetime.

RAIN DROPS

You who've been subscribing to RAIN probably know that we've exchanged our mailing list a few times with organizations/periodicals that we thought you might want to know more about. We've decided to stop doing that. Over the past two or three months we've gotten only complaints from our subscribers, not an indication that we're enriching anyone's lives. No serious complaints, just ones like "Please don't sell your mailing list to any more kooky organizations" and "Here I am, the victim of junk mail" . . . On the benefit side, we can count a few new subscriptions from folks who saw RAIN because of our use of the other organization's list, but it's not worth it to us to be bothering our readers with unwanted mail.

On his renewal form, Gary Walker asked "Are there other Okies getting RAIN?" and rather than give out names, I thought I'd print his name and address so you could get in touch with him yourselves, if you're an interested Okie. Write him at P.O. Box 2535, Norman, OK 73070.

A housekeeping detail: Last month we ran an annotated list of RAIN back issues available, but we forgot to say that they're \$1 each. Another part of

the back issue story is that as time goes by, we do run out of particular issues, so if you order any using an old list, we may not be able to fill your order. If you haven't a list that's less than, say, three months old, write for a new one. We'll be printing our list in every other issue, I think.

A repeat of the "moving message" I'm so fond of. When a subscriber moves, it costs us about 50¢ to change our records. That's an inevitable cost of maintaining a current mailing list. But when a subscriber depends on the Postal Service to notify us of an address change, we pay them 25¢ for the notification, even if it's wrong or only "moved, left no address." And they usually return the unread copy of RAIN to us. It would then cost us another 13-24¢ postage to remail a fresh copy. So we ask that if you want any issues you missed by moving, please be willing to order them and pay a dollar each for any we have available. And, if at all possible, let us know *before you move* so we can avoid your missing them in the first place. Also, if you move out of the USA, we need additional postage. Look on subscription blank for amounts. By the way, one magazine that I heard of will take your name off its list if it gets a change-of-address notice from the Postal Service. You can get back on by paying them a 50¢ reinstatement charge. I felt less hard-nosed to read that.

We're now sending out renewal notices before we mail the last issue on

a subscription, and it's *so much easier* for me if the renewal comes in before I take your name off the mailing list a month later. If you do renew late, it would be really nice if you'd include some extra money to cover the cost of sending the issues you missed, if you want them. Thanks to the 75 subscribers who've renewed in the last month and 153 new subscribers who've joined us. We're now up to about 1430 subscribers total.

If you live very far from Portland, it may be taking your RAIN a long time to reach you. Lately some East Coast subscribers have complained of not having received their copies by six weeks after we've mailed them. All I can say is I wish it weren't so. We'll send your subscription by first class mail, if you'll pay the extra postage (usually 24¢ a copy instead of 2¢, see subscription blank for annual cost). Other than that, patience seems to be the answer. (AM)

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

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Typesetting: Irish Setter
Printing: Times Litho

Thanks to: Lauri deMoll

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Inquire for multiple copy rates.

*PLEASE ENCLOSE PAYMENT: If we have to bill you, add \$5 to above rates.

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SUBSCRIPTION RATES:

- Regular — \$10/10 issues
- Living Lightly — \$5/10 issues (income less than \$5,000 . . . ?)

ADD POSTAGE OUTSIDE U.S.A.:

- CANADA/MEXICO:
- \$2.50/yr., Printed Matter rate
 - \$4/yr., First Class rate

OTHER FOREIGN:

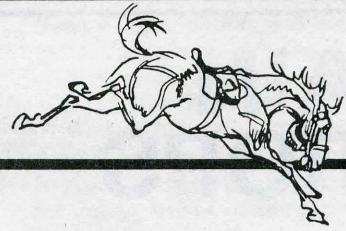
- \$2.50/yr., 2-month surface mail
- \$4.50/yr., 5-week first class
- \$16.50/yr., 1-week airmail

OPTIONAL FIRST CLASS MAIL IN U.S.A.:

- \$3/yr., for quicker delivery east of the Rockies.

AMOUNT ENCLOSED \$ _____

Rush



The Iowa Public Interest Research Group is sponsoring four Limits to Growth Conferences, January through March, in Storm Lake, Creston, Decorah and Ottuma. For more information, contact the Iowa PIRG, P.O. Box 1232, Ames, IA 50010 ■ *Washington State Recyclers can have their services listed with the toll-free Hotline by simply calling 1-800-RECYCLE. You can also call this to find out where to get rid of or scavenge neat stuff* ■ For librarians: "Sunspark: Guide to Alternative Periodicals" by Don Carnahan (Nov. 1976, \$2 from: Sunspark Press, Box 6341, St. Petersburg Beach, FL 33763) is a useful and comprehensive guide to magazines devoted to creative natural lifestyles. 52 pages. Twice annual updates are planned for \$1 each ■ And another: "Periodicals That Progressive Scientists Should Know About" (Sept. '76 edition) from Science for the People (c/o Progressive Technology Company, P.O. Box 20049, Tallahassee, FL 32304) is a four-page listing in tiny print that always has new things on it you've never heard of. Much improved over earlier versions. Send a self-addressed envelope for a copy ■ The Oregon Committee for the Humanities (1633 S.W. Park Ave., Portland, OR 97201) is now accepting grant applications for projects involving humanists around the theme of "The Unfinished American Revolution: Our Continuing Search for Life, Liberty and Happiness." Write for deadlines and details ■ Our friends, Piper and Doni at Earth Cyclers (Route 1, Edwall, WA 99008) have put together "Wheat to Eat," a little booklet on the different things one can do with wheat: wheat berries, flour, sprouts, wheatgrass,

diastatic malt, gluten and bulgar. For a copy send 40¢ to cover postage. A donation would also be appreciated ■ The Public Interest Research Group invites all public interest advocates to submit research topics to a bank which would match topics to professors, graduate students and other scholars. Academics are constantly searching for meaningful topics. The public interest movement needs research. The bank suggests a partnership. Contact Ginny Collette at the Public Interest Research Foundation (1714 Massachusetts Ave., N.W., Washington, DC 20036) ■ The new "Mariner's Catalogue" (Vol. 4) is out and is a gem, as usual. Chock full of seaworthy goodies from boats to hardware to books about it all. You could love it for the graphics alone. \$6.95 from International Marine Publishing Company, Camden, ME 04843 ■ Want some nice little books on New England? "The Factory Store Guide" (\$2.95), "Southern New England for Free" (\$3.50), and "Short Walks on Cape Cod and the Vineyard" (\$3.50) all from Pequot Press, Old Chester Road, Chester, CT 06412 ■ Finally found long-looked-for Japanese sewing patterns—kimonos (\$1.50) and hippari coats (25¢) and a wonderful store that sells the right fabric. Write to Kasuri Dyeworks, 1959 Shattuck Ave., Berkeley, CA 94704 ■ Bay Area Californians who want to keep up with eco-events would do well to join the Berkeley Ecology Center. Their newsletter has the most complete listing I've seen anywhere of events, public meetings and hearings, radio and TV spots of interest, classes and outings. Minimum membership is \$6/year from the

Ecology Center, 2179 Allston Way, Berkeley, CA 94704 ■ "The Indian Art of Tanning Buckskin" (P.O. Box 250, Roseberg, OR 97470), \$3.95 for a plain cover or \$4.95 for a fuzzy cover. "Now every time I see a dead deer on the highway I want to skin it" (Howdy Reichmutb) ■ The South Whidbey Consumers' Cooperative (P.O. Box 306, Langley, WA 98260) is trying to achieve public ownership of their local phone company. They would like information on other alternative system proposals or experiments, as well as moral support ■ It looks like the National Center for Appropriate Technology (NCAT, P.O. Box 3838, Butte, MT 59701) has an executive coordinator. Jim Schmid has been a CAP Director in upper New York state and was active in coalition building around utility rates and ownership reform. He should be moving to Butte soon, so at long last NCAT will be more than a P.O. Box and a dream ■ "I wonder sometimes at the style and pace we all seem to adopt; furious rushing to save a planet that's partly endangered by furious rushing. Planet aside; I know time pressures and anxieties are bad for my own system—head, arteries, heart and stomach. But I'm so impatient! And somehow I have gotten the notion that I'm responsible and necessary to saving the planet (a bit grandiose) or Iowa City; even my family. Our credit union (New Pioneer Cooperative Society) passed state audit with flying colors. We're up to \$42,000 in deposits, \$32,000 in loans and will be able to pay a healthy dividend (5%) to members this year." (Craig Mosher, Iowa City, IA)



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