

Portland State University

PDXScholar

RAIN: Journal of Appropriate Technology

RAIN

7-1-1978

RAIN

ECO-NET

Follow this and additional works at: https://pdxscholar.library.pdx.edu/rain_japt

Let us know how access to this document benefits you.

Recommended Citation

ECO-NET, "RAIN" (1978). *RAIN: Journal of Appropriate Technology*. 12.
https://pdxscholar.library.pdx.edu/rain_japt/12

This Book is brought to you for free and open access. It has been accepted for inclusion in RAIN: Journal of Appropriate Technology by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.

RAIN

JULY 1978

VOLUME IV, NO. 9

ONE DOLLAR



Oregon Historical Society

INSULATION, SI! CELLULOSE, NO! p. 10

BPA'S MUNRO p. 14

EXERPTS FROM AKWESASNE p. 4



RAIN

access

APPROPRIATE TECHNOLOGY

META Publications
 P.O. Box 128
 Marblemount, WA 98267

Our friends up in the high reaches of the Skagit Valley have just come out with a new listing of publications available through their mail order book service. Solid, practical and useful information sources on farm equipment, crops, food processing, livestock, working animals, transportation, food and nutrition, health and sanitation, metalwork, water supply, cottage industries and many other areas. Write for list of publications available—the best mail-order source for a.t. books, plans and technical information around. —TB

Mountain/Prairie Energy Vision (series of 4), Loren Schultz, \$2.50 each, from:

AERO
 435 Stapleton Building
 Billings, MT 59101

The new posters promised by AERO have arrived. Called the Mountain/Prairie Energy Vision, and geared to the bio-regional interface of the Great Plains and Northern Rockies, these four separate scenes illustrate how renewable energy sources, various appropriate technologies and changes in commercial infrastructure could be tailored to meet the particular needs of the economies and lifestyles of Big Sky country. The scenes include a plains wheat farm, cattle ranches, mountain homestead/forested area and a small city. I like these posters for a couple of reasons: first, they footnote each technical idea right on the poster, so someone can get a visual concept then go right to the best source for more information; second, they strike a great balance between vision and practicality, showing the potential these tools have right now for meeting the day-to-day needs of hard-working people. Could this be Montana ten years down the road? You bet it could. —SA

Country Woodcraft, Drew Langsner, 1978, \$9.95 from:

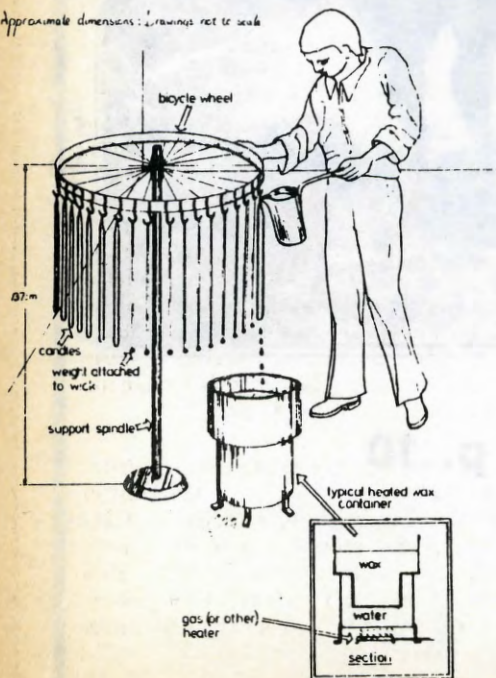
Rodale Press
 33 East Minor
 Emmaus, PA 18049

If you want to understand what it means to learn from doing—if you want to see where focussed attention and love of something can take you, this is your cake. A handbook of traditional woodworking techniques and projects, but another realm from popular mechanics how-to projects. Here the beautiful products seem almost incidental to what is sought and gained by the person making them. Interwoven with a lot of wisdom about tools and techniques gleaned from an inquisitive nature and a willingness to test things out. A beautiful sense of how to approach doing things. —TB

Simple Methods of Candle Manufacture, Intermediate Technology Development Group, 1975, \$1.75 from:

International Scholarly Book Service
 P.O. Box 555
 Forest Grove, OR 97116

Concise and well illustrated introduction to simple methods of candle making suitable for cottage industry. Materials used and their role in manufacturing and use, different techniques for candle-making, equipment requirements and designs, and heating equipment (solar would work fine). A practical and handy guide. —TB



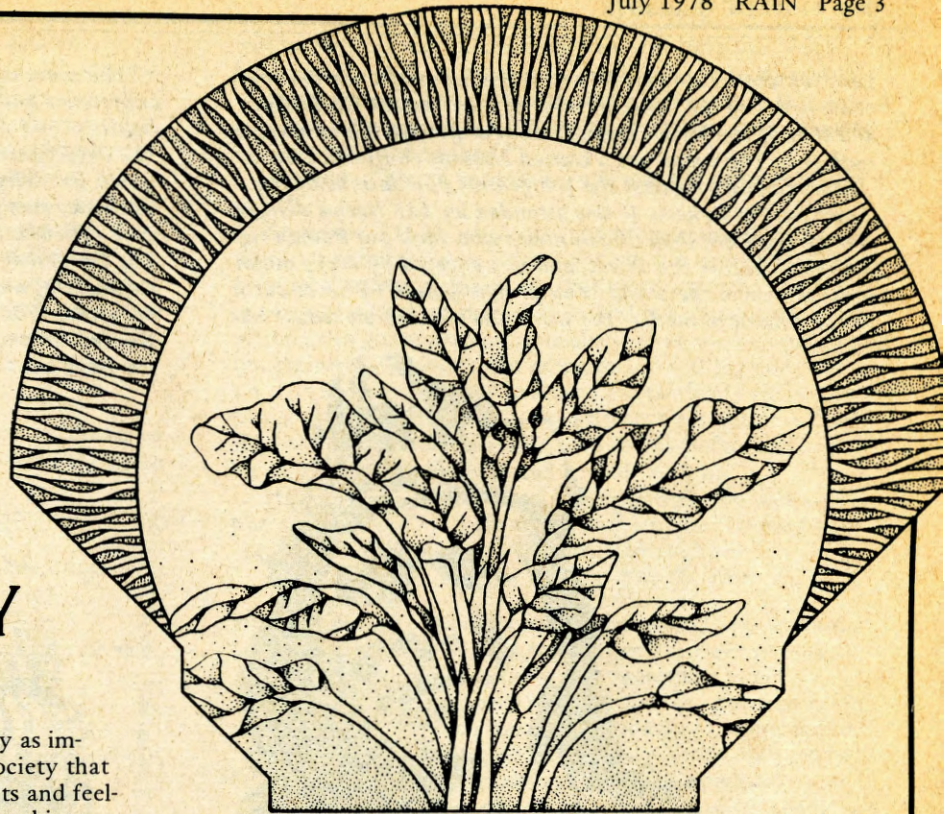
from Simple Methods of Candle Manufacture

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

RAIN	Tom Bender	Joan Meitl	Linda Sawaya
STAFF:	Lane deMoll	Lee Johnson	Steven Ames

Typesetting: Irish Setter Printing: Times Litho

CONSENSUS DEMOCRACY



The ways by which we take actions are frequently as important as the actions themselves. If we want a society that lives rather than talks equality, where the thoughts and feelings of every person are listened to and incorporated into decisions and actions, and which can attain and maintain a harmonious and deep-rooted relation with the rest of Nature, we need to change our ways of making public decisions. Majority-rule democracy will not work.

Majority-rule processes have been widely used in a period when we have given tacit consent to rapid change—specifically because they allow us to ignore and override the desires of significant numbers of people who would never consent to the changes proposed or the way they are done. The self-serving interests of a minority, coupled with the vote of people not understanding the implications of the action being taken or hoping it might benefit them, has repeatedly overridden the real interests of the majority by this process.

Urban growth serves as a well documented example. The high costs of growth to the community as a whole have been repeatedly shown. The percent who profit are small, and their identity predictable. Yet the local businesspeople give support in hope of expanding their own operations—not realizing that growth brings in more and larger competitors and they are as likely to lose as to gain from the process. “Everyone” appears to have opportunity to profit in real estate exchanges, yet the homeowners forget they must purchase another home in the same inflated market, and the real profits always seem to go to the same people with inside information, contacts, credit and knowledge of the game.

Majority-rule voting results too frequently in energy being put into obtaining a majority rather than in listening to and coming to terms with the real and important feelings of the minority. It creates a divisiveness in carrying out decisions between those victoriously carrying out their wishes and the losers grudgingly accepting the imposition of the decisions upon their lives. Majority-rule tends towards what is popular or easy rather than what is right, and gives little power to the always necessary voices of dissension. It gives an illusion of strength and permanence to decisions that belies the always shifting feelings of a community. It responds to the interests of power, not people.

We tend to consider majority rule as the only workable form of democratic decisionmaking. Yet one alternative in particular, *consensus*, is far more democratic and far more respectful of the community as a whole and responsive to it. In consensus, decisions must be acceptable to everyone. To us, used to approving actions which *aren't* acceptable to everyone, that sounds impossible. It isn't. Native American, Chinese, Quaker, and many parts of Japanese society have long operated well by consensus. Seeing it operate in, of all things, a strongly polarized U.S. government planning committee, it is amazingly effective in getting people's feelings clearly articulated, involving everyone in an effort to find a workable solution, and in leaving everyone with a sense of commitment to make the decisions work.

At first impression, consensus is unwieldy and slow compared to simple voting. But it results in real differences being worked out rather than being swept under the table and results in pulling the energies of the whole group together behind a decision rather than the obstruction, indifference and uncommitted assistance more common with voted decisions. It requires a group or community to deal with its real problems on a more honest, open and direct level, which in itself is a major improvement over how we do things now. Consensus also differs from majority rule in that it is basically stabilizing. Failure to agree upon a new action doesn't mean inaction—it means merely that things go on as they have unless or until full agreement on change is reached.

In reality, majority rule represents a false economy. The minutes saved in reaching a “decision” are more than lost in implementation, in the anger, frustration and rejection felt by losing voters, and in the repeated cropping up of the unresolved differences at every possible opportunity. A real community needs the solidarity of shared respect for each other and of shared and accepted direction which can only emerge from consensus kinds of processes.

—Tom Bender

Last September a powerful and revealing confrontation took place between the consciousness of our Western Civilization and that of the Native civilization that preceded and may yet outlast it. The event was a United Nations conference on "Discrimination Against the Indigenous Populations of the Americas" in Geneva. It was attended by 125 Native delegations from more than 30 countries who took our human rights violations before the world, and was covered by every major press service in the world. You probably didn't hear about it in the American media—the story was not one we would like to hear.

The more significant revelations came in the style of the conference and its participants and in the sense of strength, rightness and solidarity the delegates found among themselves. The deep-centered sense of the world and of right action from which the delegates worked stood in stark contrast to the legalistic, manipulative and alienated actions of the conference officials. No question as to which I would trust my life. The December 1977 Akwesasne Notes gave full coverage to the meeting and is filled with the powerful exchanges that occurred. (50¢ from Akwesasne Notes, Mohawk Nation, via Roosevelttown, NY 13683.) An excerpt follows, dealing with the basic issue of control over land. —TB



from Akwesasne Notes

FOR CENTURIES WE HAVE KNOWN THAT EACH INDIVIDUAL'S ACTION CREATES CONDITIONS AND SITUATIONS THAT AFFECT THE WORLD. FOR CENTURIES WE HAVE BEEN CAREFUL TO AVOID ANY ACTION UNLESS IT CARRIED A LONG-RANGE PROSPECT OF PROMOTING HARMONY AND PEACE IN THE WORLD. IN THAT CONTEXT, WITH OUR BROTHERS AND SISTERS OF THE WESTERN HEMISPHERE WE HAVE JOURNEYED HERE TO DISCUSS THESE IMPORTANT MATTERS WITH THE OTHER MEMBERS OF THE FAMILY OF MAN.

RIGHT vs. MIGHT

EXCHANGES FROM THE LEGAL COMMISSION

While all three of the special commissions occasioned much insightful testimony and telling exchanges, it was in the legal commission where the most basic contradiction between the Native world view and Western Civilization became evident.

The Native world view is circular, self-contained. It is not based on the expansionist, linear concept of society and history which is the underlying assumption of Western Civilization. The Mother Earth, the Pacha Mama, the territory within which we live is sacred, and must be protected at all cost—not out of some Utopian, or intellectual, or pseudo-spiritual notion—but, simply, because it is where the people live. They have lived on it for hundreds of generations. For Native Peoples the land on which they live is truly "home"—and you don't destroy your home. The sacred knowledge is simply that what you don't destroy, you learn to appreciate. If you stay in one place and don't destroy it—you come to know it.

And the Creation, the Great Mystery, the Life Force—the People come to understand, is manifested in everything around us.

The whole process of Western Civilization has been one of displacement. Imperialism, colonialism, the justification of racism—they are all historical processes which flow out of that basic inability to make peace with your surroundings—with the Natural World. There is no contradiction more basic. They are opposing forces, constantly in struggle.

The job of chairing testimony about the very complex network of legal issues involved in the protection of Indian lands and sovereignty could not have been easy. There were many different nations represented, much ground to cover and, worst of all, a very restrictive time schedule. Moreover, we were to work toward a resolution which would encompass a consensus of all the testimony and which could then be presented to a plenary of all the delegates.

Yet, a situation emerged which we found curious.

Mr. Niall MacDermot, the chairman of the legal commission, was frequently at odds with the Native delegates. His manner was seen by some as high-handed and obstructive, even disrespectful, though he constantly made reference to his own commitment to objectivity and impartiality.

The conflict emerged as the delegates of various nations attempted to explain their defensive position against the displacing and extractive processes of Western Civilization.

The following is an exchange between Segwalise of the Hau de no sau nee delegation (and other delegates) and chairman MacDermot. It took place during an attempt to define the wording to a resolution that would protect indigenous land rights.

Segwalise: "[We want] . . . protection from the processes by which governments can acquire ownership without the agreement of those presently on the land."

MacDermot: ". . . would give this right to anybody . . ."

Segwalise: "That's right."

MacDermot: ". . . would be not only through indigenous people's lands, it would mean a highway anywhere . . ."

Segwalise: "That's right, yes."

MacDermot: ". . . because anybody, if they had a choice, if they had the power to refuse a highway . . ."

Segwalise: "You got it."

Laughter.

MacDermot: "Yes, well, depends on what kind of society you want."

Segwalise: "Right!"

Laughter.

MacDermot: "But I am afraid you'll have great difficulty getting any modern state to accept the idea that there can be no infringement on your land rights without your consent. I think you are asking a bit too much."

Segwalise: "We are not saying without our consent—we are saying without the agreement of those who presently own the land."

MacDermot: "That is consent. Agreement is consent . . ."

Segwalise: "And I mean, if they think that they are just going to ram anything through—I mean—throughout the entire Western Hemisphere, every doggone country that occupies our land over there does it—they just ram the road right through the middle of Nicaragua (Mesquito country) without consulting anyone. They just ram roads through all over the place and this is to bring a screeching halt to that."

MacDermot: "Ah, well . . . I think your solution is a bit too drastic to be practicable."

Jane Penn (delegate from California): "Mr. Chairman, this business about land . . . we in California, of the Morongue Indian Reservation passed an ordinance within our tribe and it took three elections but it did pass and the Secretary of Interior recognized its passage and demanded that the Bureau of Indian Affairs abide by our ordinance. It's standing today—this took place in 1958. So that this does happen. Any rights of way for anything must go to the people for full vote to agree. This can be done. I hope that will give you information."

MacDermot: "Yes."

Jose Mendoza (delegate from Panama): "A new wording. The lands occupied by the Indian nations are their property and are under their control. The lands that have been taken away by the various governments, or private individuals, and that the Indians need now, should be returned, in accordance with procedures by which the Indian nations have equal standing with the Western governments represented. This with particular emphasis on the demand for equal standing as a nation—because if this is not recognized, the solution will be an imposed one and not an agreement. Mr. Chairman, in one of your phrases you used the word, to "consult." Well, as long as we are not recognized as equal nations, the consultation

will be nothing more than simply to be informed—"Your lands are about to be occupied." And that's to be consulted."

MacDermot: "The difficulty that I still see is that it would give indigenous peoples a greater right to their land than anyone else has to their land."

Murmur: "That's because no one else has any rights left at all!"

Segwalise: "If we work on the basic premise that the indigenous peoples, by prior existence in the hemisphere, have prior land rights to those laws that were imported and that our prior rights were such that we did not allow those kinds of things to go on amongst ourselves—then we are reinforcing the premise that we are not going to allow these things to go on. The Six Nation lands and the Lakotah lands are not part of the United States. The United States does not have ownership where it can just blatantly run its roads through our lands. It has to go in there and consult with us."

MacDermot: "I know that is your contention and we've put that forward . . . I am afraid that you are focusing your mind too much on your own particular problem."

What ostensibly began as a simple task of defining precise wording for the indigenous position on the right to own their own territories turned quickly into something larger.

It became apparent very early on that the position being put forth by the Indian Nations was making Chairman MacDermot uncomfortable. Nonetheless, he continually referred to his own objectivity, claiming that he was primarily concerned with arriving at a position acceptable to all concerned.

Yet, as we looked about the room, observing the total situation, the physical set-up, (again) the time element, and even the very idea of so-called objectivity, it became apparent that the clash of cultures (of world-views) represented in that room was inevitable.

In contrast to the full circle of our internal meetings, the Indian delegates had been seated in long rows, one behind the other, and facing a raised platform, which held a long, thick table where the chairman and the official rapporteurs sat. The officials thus towered above the delegates, commanding attention. It was no wonder that some of the delegates continually and mistakenly referred to the chairman as "judge."

The matter of the time limitation was important. Jose Mendoza, Guaimi from Panama, had expressed it best when he said: "We the Indian people, when we gather together, we do not look at the clock. We do not have minutes. We have a whole lifetime to talk, because it is the problems of our people, of our lives." As chairman, Mr. MacDermot seemed at times so preoccupied with definition and the time element that often speakers had difficulty getting their points across.

This was interesting because if there was one question upon which the various Indian nations were intimately united it was on the right of Indian peoples to ownership and control of their own territories. Furthermore, the many forms and processes by which Natural World peoples have been dispossessed were also intimately analyzed and understood. There was no confusion on this.

This matter of so-called objectivity is an important one, particularly in the context of the Native position being put forth in Geneva. The traditional Native position is so fundamentally opposed to the whole process of Western Civilization that it is very difficult for people who are coming out of that context, and who represent states (which are also products of it) not to be somewhat shaken by the presentation of it. The concept of impartiality, of "objectivity" comes out of the same confusion that tells us that Man can stand "apart" from Nature. It is a curious notion that tells us an individual can step out of his place in history—and that in this way he can better judge the truth.

LAND

Films on Food and Land, free from:
Earthwork
1499 Potrero
San Francisco, CA 94110

Films are often a stimulus to further inquiry into a subject and are effective tools to use with people who can't or won't read. They are especially good for presenting new ideas to large groups of people. So Earthwork has put together a directory of films on food and land that can be used in educating and organizing. Some subject areas covered are agriculture and agribusiness, ecology and pollution, food workers, gardening, nutrition, and the world food situation. Besides listing these resources, this manual explains how to use audiovisuals as educational tools to help guide the viewer's interest and energy into action. It covers such basics as ideas for discussion leaders, making arrangements for showing, doing a film festival and publicity. A very helpful resource. —JM

Microbes to Man: The Story of a Prairie Farm, directed and produced by Tom Putnam, 16mm color, sound film, 35 minutes. Available from:
Tom Putnam
2344 Columbia St.
Palo Alto, CA 94306
415/326-1050

Microbes to Man is not so much the story of a prairie farm as it is the story of Gene Poirot and his relationship to the land he cares for. He began farming 56 years ago on land that had been worn out by 70 years of tenant farming. Only half of his land had been farmed, however. The remaining acreage was virgin prairie and from the beginning he studied the comparison between land worked by man and land worked by nature. What he learned was translated into a long process of soil restoration. The film touches on his methods of fertilization, use of legumes, animal and plant nutrition, gravity irrigation, fish-raising, biological diversity and biological control of insects, wildlife conservation, no-till planting and general methods of ecological farming. I highly recommend this film as an introduction to ecological farming and to ecological laws. —JM

Our Margin of Life, Eugene M. Poirot, available for \$3.50, postpaid, from:
Acres USA
P.O. Box 9547
Raytown, MO 64133

Our Margin of Life is Eugene Poirot's personal observations and practical dem-



from *Our Margin of Life*

onstration of nature's science. In it Poirot explains in greater depth the processes he went through to restore his land and the common sense behind each step. But this book also offers a way of seeing as well as a way of doing.

"If you wish to piece together a philosophy of life, the prairie offers a pattern of living things. The prairie does not measure its creatures in gold or silver, but rather in those values they create for other creatures. There is no place for those that fail in this simple task, but even the microbe aids many times in extending the thread of life to man." And I would add: "If man measured his success the same way, all those who work well to make things that people can use in body, mind or spirit have reached success." —JM

HEALTH

Menopause: A Positive Approach, Rosetta Reitz, 1977, \$9.95 from:
Chilton Book Co.
201 King of Prussia Rd.
Radnor, PA 19089

Nothing sums up our culture's negative attitude towards women or aging more than the double whammy of our prejudices and misunderstandings about menopause. This book is written by a woman who wanted to know more about what was beginning to happen to her body and who could find virtually nothing written in "popular" literature, while the medical literature treated it as an illness that needed to be cured rather than a normal, natural stage of life. Although intended primarily for women in their menopause, this is a good book to turn to for any-

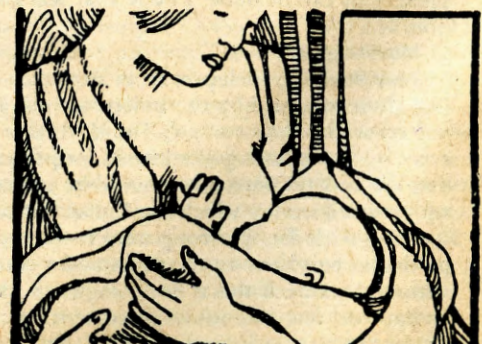
one who is interested in dispelling the myths and opening up the dialogue of health and well-being on all fronts.
—LdeM

Avoid or Achieve Pregnancy Naturally, Terrie Guay, 1978, \$3.50 from:
Bookhouse Northwest
P.O. Box 296
Portland, OR 97207

For those of us still in the reproduction years, natural birth control has become an increasingly attractive alternative to chemicals and devices which have questionable side effects. This book is another of the several that have appeared in the past year that describe in detail how to learn about your body's monthly cycle to control conception. This one relies on the mucus method alone, unlike some which combine charting the vaginal mucus with keeping track of temperature changes. Simpler but probably a little riskier. Any of the variations are a valuable way to get in touch with the rhythms of your body and, incidently, I've found, with the changes of the moon. —LdeM

Breast vs. Bottle: The Scandal of Infant Formula Promotion, \$1 from:
Food Monitor
P.O. Box 1975
Garden City, New York 11530

If you are not familiar with the scandal of baby formula manufacturers pushing their products on Third World mothers, this reprint from *Food Monitor* is a good place to start. Companies like Nestlé use pictures of robust babies and salespeople dressed like nurses to convince mothers that their expensive product is more nutritious and "modern" than breast feeding. When the women, most of them poor, dilute the formula to save money, many of the babies die from malnutrition. Yet another example of large corporations making a killing on a substitute for something which is provided free by nature. Boycott all Nestlé products and use this pamphlet to spread the word. —LdeM



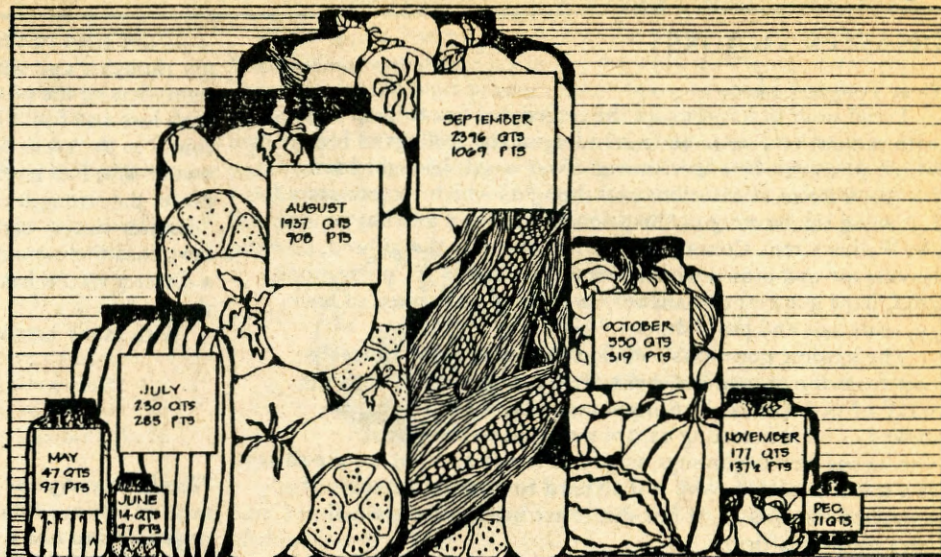
from *Breast vs. Bottle*

Kitty Lawrence

FOOD

Community Self-Reliance, Inc. Annual Report, 1977, \$1 from:
 Hampshire Community Canning Center
 Box 104
 Northampton, MA 01060

It looks like this active group is really making strides towards helping people in their community become more self-reliant food-wise. Their canning center is open 72 hours a week during canning season; they organized three Food Processing Fairs so that consumers could buy in bulk easily from farmers; they have an outreach/educational program for low-income (and next year on in the public schools), and they are doing all kinds of educational activities to convince the people of their community that it is possible to become independent from the large amounts of food exported into Massachusetts. The report is well documented with some good quotable numbers and is nicely put together. Worth checking out if you're doing similar things. —LdeM

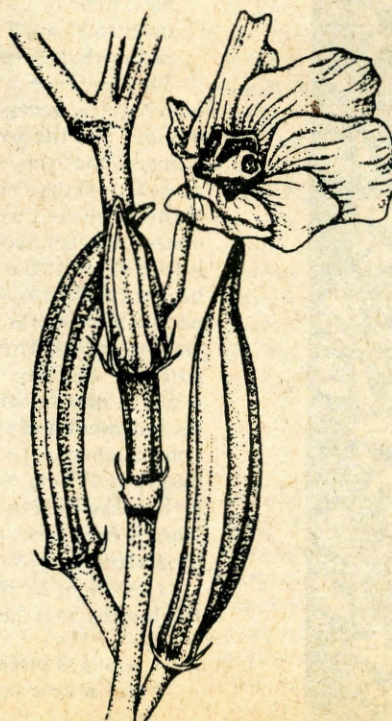


TOTAL JARS PROCESSED FOR 1977 SEASON
 5351 QUARTS 2763 PINTS

from Community Self Reliance Annual Report

Growing & Saving Vegetable Seeds, Marc Rogers, 1978, \$4.95 from:
 Garden Way Publishing
 Charlotte, VT 05445

Another gardening idea that is complimentary to self-reliance and letting go of our dependence on corporations is the art of *Growing & Saving Vegetable Seeds*. This book describes the rationale behind raising your own seed, as well as methods of pollination, selection, collection, extracting, drying, storing and testing seeds for propagation. All the basic information you need to start collecting this season is here in a format that's easy to use as a reference. —LS



from Dry It You'll Like It!

LEARNING

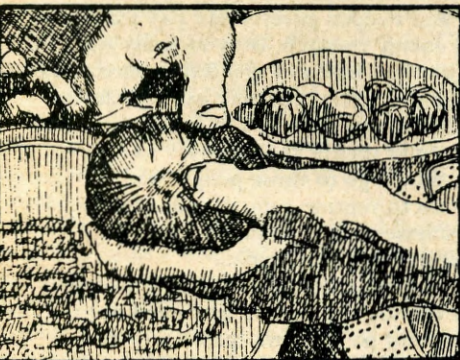
1977-78 National Directory of Public Alternative Schools, edited by Anne Flaxman and Kerry Christensen Homstead, 200 pages, \$4.20 from:

National Alternative Schools Program
 School of Education
 University of Massachusetts
 Amherst, MA 01003

I have no idea how complete this directory is, but the several alternative programs I know of in public schools around the country are included. The book is handsomely laid out and therefore easy to use. A good reference for people wanting to get some hints as to who's doing what in alternative learning these days. —LdeM



from National Directory of Public Alternative Schools



Dry It—You'll Like It! by Gen MacManiman, 1973, from:
 MacManiman Inc.
 Fall City, WA 98024

This book caught my eye several years ago with its unforgettable title. Now that I've read it, I'm more than ready to jump in and Dry It! In addition to clear, simple plans for building your own food dehydrator, there are numerous recipes and instructions for drying many kinds of foods. The food dryer is a great project to start on now before the bounty of nature in our gardens overwhelms us. It's wonderful to have choices other than composting the surplus that comes to us at harvest time. So what more to say, Dry It! —LS

DISASTER VICTORS

Dear Tom and Lane,

I read your description of the tragedy of fire to your home with sadness and some understanding of the feelings of loss which you must be experiencing. Your words brought back, for me, a range of emotions and thoughts which I encountered following the burning of the primary structure at what is now the Walker Creek Community. It too burnt to the ground, leaving me and others with fewer . . . far fewer . . . possessions, grief, hard questions to answer, and the apparent loss of energy, materials and past labors.

The hardest questions seemed to come at some times distant from the immediate event . . . most connected with the WHY of it. If fire is cleansing something, what is being removed . . . if it is testing us, are we equal to the test . . . if it means new beginnings, where do we start . . . if we see this as a transformation, why is it so hard to remove the scars of a charred remains . . . if our values are being tested, which ones do we reaffirm.

In passing from the immediate losses, there came the activities reaffirming life . . . the planting of herbs in the ashes . . . the symbolic placement of remnants from the fire into the garden . . . the building of temporary shelter . . . the understandings of value in friendships . . . the assessment of resources remaining . . . the awareness that no one was physically hurt . . .

The greatest loss seems that of the impetus for creativity through externals . . . and the greatest gain, in time, that of being able to create in the face of the temporal nature of reality and ultimately in the face of death.

Your words were written sensitively and bravely. Indeed, the loss of a home to fire can be as devastating as the loss of a close personal relationship with a family member, for it strikes against our security, and our dreams.

I have tried to think of something to send you other than my thoughts and words. Enclosed are two things which are reminders to me of a successful resolution of my experience with loss and fire. The metal Judaic item was one which I found in the ashes which has reminded me of its previous owner who had given labor and energy to our structure, but more, the strength of his spirituality. The spirit survives. The "disaster victor" sign was given to me by a close friend. I believe that the meta-image of being a disaster victor rather than a disaster victim has been a helpful one in viewing myself and the future.

With many best wishes for your gains in the face of loss,

Bob Ness
P.O. Box 81
Mt. Vernon, WA 98273

Thanks to everyone for all the good energy you've sent our way—it's buoyed our spirits and hammers. We set the new ridgepole and had a topping-out celebration last week. Feedback has been of a heavy winter everywhere in the network. Jerry Friedberg (Arrakis Propane Conversions) in Arkansas, George Mokray in Boston, and the new Zendo at the Tassajara Zen Center have all suffered major fires recently, and two of the founders of Citizens Against Toxic Sprays were killed in a house fire. Knowing disasters, we do become disaster victors all, cleansed and stronger for the more intense times ahead. The forests are turning a vibrant green with new and healthy growth. —TB

MORE ON FEDERAL FUNDING

Dear RAIN,

I can't understand how your magazine can continue to favor having the State and Federal government pay for energy conservation and solar energy research. Do you really want the citizens to relinquish their rights to spend their money as they please to the government? In your May issue the letter of Robert Judd published under the title Cal A.T. Grants talks about awarding grants. Judd says of the money,

"The limited funds should go to those people who have little or no access to venture capital: individual inventors, small businesses and community groups rather than corporations and think tanks."

This sentence is worth pondering. Who are these people who have no access to venture capital and who need our tax money? Has the government passed laws against a certain group so that they can't deal directly with their fellow citizens, but instead need the intervention of the tax collector? If this were so it would be a tyranny against both sides. Of course, this isn't so. We don't have any such laws. Any citizen is free to enlist the backing of another if he can convince the backer of the project. I would guess that Judd wants to help people who, so far, feel that they haven't been good at convincing others. This is a sign to me that Judd may be a sympathetic, nice guy. The problem arises when we find that it is our money he will give away; and we may not agree with his judgment and sympathies. This is very bad. A horrible consequence of Judd's approach must be the feeling of those his group rejects, among which there must be many people he has classified as not having access to venture capital and who, it now turns out, don't have access to the group who look after the group that doesn't have access.

This might be tough to take! Perhaps another layer of the bureaucracy helps this poor fellow!

I was also puzzled by Judd's comments on salary. He says: "Our review team was unsympathetic to salary rates greater than \$10-\$15 an hour (\$20,000-\$33,000 a year)."

LETTERS



I have been asked to be on such review teams and believe the government pays the review teams themselves \$200 per day plus expenses. That is much more than the amount he disapproves of. (This may be unfair criticism. Judd may donate all his time and the same with the rest of this peer panel—but I'm very curious). What is Judd's salary as director of the Office of Appropriate Technology?

It is my hope that people will think about their relationship to government and the problems they face. I believe if they give all this some thought they will prefer to work on their problems directly rather than through agencies as the D.O.E. or the California Office of Appropriate Technology. These agencies are not giving away wealth that they have created; they are giving away your money which they collect under threat of confiscation of your possessions if you refuse to pay, and they are paying themselves good salaries as they do it.

Steve Baer

Dear Lee:

I am writing this letter in response to an article in the *Oregonian* entitled "Boeing May Bring Oregon Big Windmill." I am writing a similar letter to Oregon's U.S. Senators and Representatives, as well as President Carter and James Schlesinger.

Several months ago, it came to my attention that the Columbia Gorge would be an excellent site for large-scale wind-electric power generators. Installing these generators to tie in with the existing Bonneville Power hydroelectric grid system would be an ideal opportunity for Oregon to pursue. This concept is well known and has been developed by Dr. E. Wendell Hewson of Oregon State University. (See undated *Oregonian* article enclosed.)

My purpose for writing is this: I wonder why the U.S. Department of Energy is granting Boeing of Seattle \$10 million to "design, test and build the first unit" to test "the economics of wind-generated electricity." (Please see attached article.) I wonder if most people are aware that another firm, Wind Power Products of Seattle, is ready to go on line with a large-scale wind generator right now? (See article from the *Sacramento Bee*, enclosed.) I would like to know why the federal government is giving Boeing so much money, for essentially the purpose of re-inventing the wheel, in this case a wind generator.

Charles Schachle, the head of Wind Power Products (who, like myself, runs a small family business) has built a prototype wind generator that has been supplying power into the Grant County P.U.D. lines for over a year now. The model Schachle proposes will be the same as the prototype, only it will supply 3,000 kilowatts of electricity instead of only 125 kilowatts. The Office of the Governor of California is already considering investing in this generator, and Southern California Edison is in the final stages of purchasing one. Why can't Bonneville and/or Portland General Electric (who is also considering the Boeing/DOE model) buy a system that already exists and is ready to go into mass production? Why should they wait for several more years for the Boeing model to be completed? This seems like a waste of tax dollars merely to benefit Boeing. It would appear that Senator Henry Jackson has used his influence again to get federal tax dollars to support Boeing.

My questions for the tax-paying public are these: Why couldn't BPA or PGE be persuaded to buy wind generators that already exist in prototype form, and could very easily be made in Oregon (the propellers are made of laminated wood)? Why should a small businessman such as Mr. Schachle have to compete with government-subsidized big business like Boeing? Why can't Boeing come up with their own money for the research and development, like Mr. Schachle did? Creating this artificial competition only makes it more difficult for the small businessman to stay in this market.

My personal interest stems from the possibility of selling Schachle our speed gear trains for the wind generators. I would benefit from the mass production of this renewable energy source, as would many other Oregon businesses. I think it is high time the federal Department of Energy stop funding projects to study technology and equipment that already exists. I think the Department of Energy should try to help the small business people like Schachle, instead of trying to hinder his progress.



Sincerely,
Frank W. Seifert
Frank Seifert Company
P.O. Box 16638
Portland, OR 97216

Dear Lee:

Just finished reading your a.t. article ("Side-Stepping the Sun") in the April '78 issue. Good job. *RAIN* should do more of this kind of article.

I share your frustration with dealing with the Feds. If you have found some "bozos" at DOE, sometime you should take a look at some of the people at the Departments of Transportation and Agriculture. It may be a sad commentary on the state of the bureaucracy; DOE has, by far, the best staff that I have found in D.C.

On the federal budget process. The program directors at DOE have little control over what they get each year for funding. Within Schlesinger's office and at the Office of Management and Budget, there are anonymous individuals who decide just what budgets will be requested from Congress each year. In covering Washington over the past four years, I have found only a few of these people—and, even when you find them, they won't tell you anything. So, on the average, you will be wasting your time trying to find the money planners at DOE.

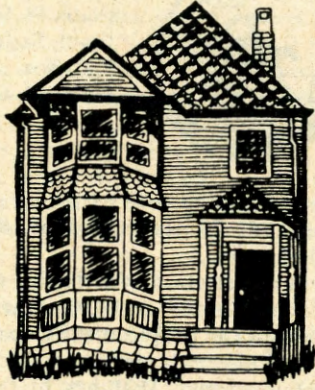
In shaking loose some D.C. money for a.t., your best bet is to concentrate on the Congress. Whatever are the wishes of DOE and OMB, the Congress has the final say. Forget, for the most part, lobbying DOE staffers.

In your article you are a little hard on some of the DOE staff. What they say in public may be different from what they actually believe—but they want to keep their jobs. On a number of occasions, I know that while DOE personnel were testifying before Congress that they didn't want their budgets increased, they were privately furnishing reams of information under the table to Congressional Committees showing why they actually did need more money. While this is not always the case, I think that you will find that often Congressional opinion for increased non-nuclear R&D budgets is actually furnished by DOE personnel.

Anyway, *RAIN* continues to be a great publication. And if you are looking for some big bucks from DOE for an a.t. project, why don't you propose a nuclear-powered windmill? After you spend a few million building the windmill, you can conclude that the nuclear reactor is not necessary and save the government a few million. Similarly, there could be a nuclear-powered solar energy system, etc. Good luck.

Regards,
Bill Margetts

Dr. Margetts is the editor of the very excellent Government R&D Report, one of the few newsletters we exchange with that has been consistently full of accurate, comprehensive information and experienced perspectives on the D.C. energy scene. We highly recommend to you their "Solar Energy Edition" (June 1, 1978), which you might want to review before subscribing. Ask for a sample copy from: Gov't R&D Report, MIT Branch, P.O. Box 85, Cambridge, MA 02139. It's \$90/year. —LJ



Sedition/cpf

Insulation, sí! Cellulose, NO!

The real fire problem, in my opinion, lies in the cellulosic insulations. To begin with, the cellulosic insulation is most generally a pulverized or finely chopped-up paper material, frequently waste paper. In this condition, it is highly flammable. Flame-retardant salts are then added to that paper by a dry mixing method. It has been reported that a few manufacturers are using some type of steam impregnation for adding salts. This may give better quality control, but the other problems remain. So, most salts do not become an integral part of the paper, but merely rest upon the surface. Originally borate and boric acid were used as flame retardants. Due to the cost or unavailability of boron-based materials, substitutes are being used, or the borates and boric acid are being used with extenders that dilute the effects. The substitute materials are, most generally, ammonium sulfate or aluminum sulfate. These accentuate the corrosion problem, since they are acid salts.

Even the best of these flame-retardant treated celluloses will begin to smolder when heated to approximately 450 degrees Fahrenheit. When smoldering once begins, it is most difficult to extinguish. It reacts like a smoldering cotton mattress. The ordinary application of water or other extinguishing agents is ineffective. The material must be carefully pulled apart in its entirety, and each parcel extinguished separately.

Ever since cellulose fiber insulation began to be promoted a couple of years ago as a low-cost "wonder drug" for building energy conservation, we've been expressing our concern over its potential combustibility and moisture problems. RAIN reader Paul Hewitt in Toronto wrote saying he shared our concern and would let us know if he found any documentation. It follows, below, excerpted from an article by John G. Degenkolb on fire safety concerns of energy conservation measures in buildings. It's from the May 1978 issue of Fire Journal published by the National Fire Protection Association, 470 Atlantic Ave., Boston, MA 02210.

In addition to detailing the fire hazards of cellulose insulation, Degenkolb's article gives the first overview I've seen of general fire hazards of well-insulated buildings (rapid fire spread from containment of heat, rapid smoke spread, etc.); electrical/fire hazards from insulation (overheating during electrical equipment operation, overheating from heat released from insulation while curing, chemical interaction of electrical and thermal insulation, and chemically induced corrosion); and other hazards (corrosive effect on structural members of sulfuric acid produced by flame retardant salts in cellulose insulation that has caused one and possibly more buildings to collapse). Good things to know about.

About an hour after Paul Hewitt's letter arrived, Laura Masin walked in the door at RAIN to let us know about a recently completed "Feasibility Study on Small-Scale Cellulose Insulation Manufacturing" by the Community Energy Network, 122 Anabel Taylor Hall, Cornell University, Ithaca, NY 14853. The study covers net energy analysis, moisture problems, market analysis, fire retardancy and research on alternative chemicals, economic analysis of small-scale production, etc. —TB

In January 1977, ERDA prepared a report entitled *Survey of Cellulosic Insulation Materials*. Nineteen off-the-shelf samples were obtained. They noted that "of the 19 samples received for analysis, 13 showed visible evidence that some of the fire-retardant chemical had separated from the cellulosic matrix; quantities of the additives were found at the bottoms of the containers." In other words, that paper from which the fire-retardant chemicals had dropped off was little more than waste paper in a highly flammable form.

As to moisture absorption, the weight gain should not exceed 15 percent if it is to meet the Standard. All 19 showed water solubles in excess of 15 percent. "The difference in moisture absorption increased with increasing time—some samples had moisture gains in the 75 percent range after 8-15 days of exposure. Also, in some samples the moisture gains reached a maximum and then decreased." After 15 days, nine of the samples exceeded 15 percent, with one as high as 70 percent, and two were in the 40 percent range when in a low-density packing configuration. Under different packing configurations, six of nine exceeded the 15 percent after 15 days. Since the flame retardants are water soluble, doesn't this indicate there is the definite possibility that those salts may well be leached out over a period of time? Because the problem has been recognized, some companies utilize permanently

treated rather than salt-treated paper for facings. We are not talking about this year or next, but about 30 years from now when the mortgage is to be paid off—that is, if the home has not burned in the meantime as the result of unsafe methods of energy conserving insulation. When moisture is added to an insulating material, the insulating qualities become weakened and the public is shortchanged.

Underwriters Laboratories brought to my attention that the *Building Materials Directory* states: "The loose fill materials, consisting of cellulosic fiber or shredded wood chemically treated to reduce combustibility, incorporate treatments consisting of water-soluble salts which may be affected by repeated exposure to water or conditions that may result in the condensation of water."

In the ERDA conclusions, it was stated that "Six of the 19 samples exceeded the moisture-absorption criteria of the standard specification when tested in a low-density configuration" as found in attic installations.

Where corrosion was involved, 11 of the 19 samples used in the ERDA investigation showed corrosion rates greater than allowed under the ASTM Standard. Some showed extensive subsurface corrosion, particularly on aluminum. The sulfates appear to be the most critical where corrosion is concerned.

ERDA also reported on fungal growth. Six of the 19 samples supported such growth. Samples containing boric acid were resistant, whereas those containing primarily sulfates supported fungal growth.

Thermal conductivity values for two of the eight samples tested exceeded the values reported by the manufacturers; the range of deviations was 11 to 63 percent. The standard specifications allow only a 5 percent deviation.

It is interesting to note that ASTM C739-73 provides for three classes of "Cellulosic Fiber Loose Fill Thermal Insulation," i.e., Type I has a flamespread of 0-25; Type II has 26-75; Type III has 76-200. To establish three classes appears to me to be the height of assinineity. For three classes of readily or highly combustible material to be placed in concealed spaces where it may be subjected to accidental ignition is inexcusable!

Unless something is done about it, and immediately, we are building for a rash of fire deaths in the foreseeable future. Reports on the cellulosic insulating materials have been received from as far north as Edmonton, Alberta, and from as far south as Florida. Concern has been expressed about the covering over of electrical fixture boxes. Oklahoma City placed a moratorium on the installation of recessed electrical fixtures, so tests were conducted. "Insulation was blown in to the suggested "R" value. After one hour and 45 minutes a heat rise of 650 degrees Fahrenheit was recorded, joists were charred from heat being conducted through fixture hangers and metal flex cables, wiring insulation was melted with bare wire exposed, all paint was burned off of recessed fixtures, and plastic connectors were melted in the UL-listed connector box. The only method of clearance that maintained safe temperatures was the metal enclosure over recessed incandescent fixtures." In Oregon, the cellulose insulation identified as to its fire-resistant qualities came into contact with a bathroom

heat lamp, and fire resulted. Another Oregon community passed a local ordinance in the late '60s prohibiting the use of cellulosic insulation "due to the lack of adequate uniform fire-resistive treatment." But fires are still occurring due to the quantities installed prior to that prohibition. Phoenix reported that insulation fires generally increased 30 percent between 1975 and 1976. Michigan has reported numerous fires. So have Texas, Alabama, Colorado and other states.

Reprinted from *Fire Journal*, National Fire Protection Association, 470 Atlantic Ave., Boston, MA 02210, May 1978.

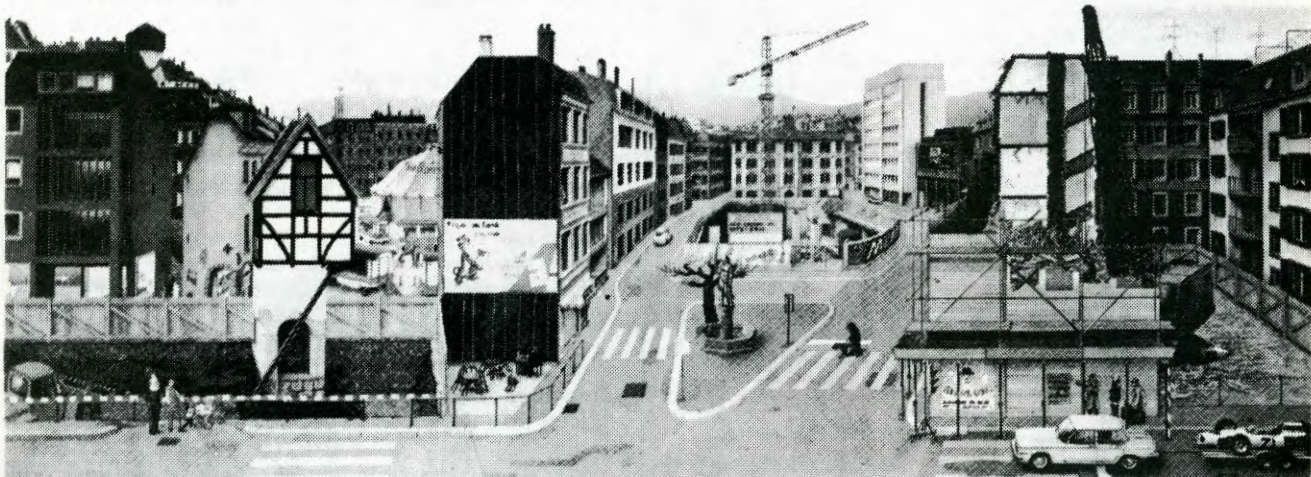
Cellulose Fiber. Cellulose fiber insulation is like expanded perlite and expanded vermiculite in that it is a loose material. It is either poured or blown into the joist or stud space. It is unlike the mineral insulating materials in that it is combustible. Cellulose fiber insulation is produced by shredding wood or paper, pulverizing it in hammer mills, then blending the material with a dry chemical to achieve some degree of fire-retardance. The chemicals used for the fire-retardant treatment may be one or a mixture of the following: borax, boric acid, mono- or diammonium phosphate, and ammonium sulphate. Other fire-retardant chemicals may also be used. These chemicals are water soluble and may be adversely affected by repeated exposure to moisture or extreme changes in humidity. There is some question about whether such changes would result in migration of the chemical deeper into the fibers or lower in the bed of insulation. Insulating material treated with sulfates may cause corrosion of metal-sheathed cable or metal fixtures, especially under humid conditions.

Not all cellulose fiber insulations are listed by testing laboratories. Those that are listed generally have flame spread ratings ranging from 15 to 60. Under favorable conditions, cellulose fiber insulation will smolder or glow, especially if a source of ignition penetrates deep into the bed of material. With a sizable, sustained ignition source present, the chemicals will eventually break down and the insulating material will burn.

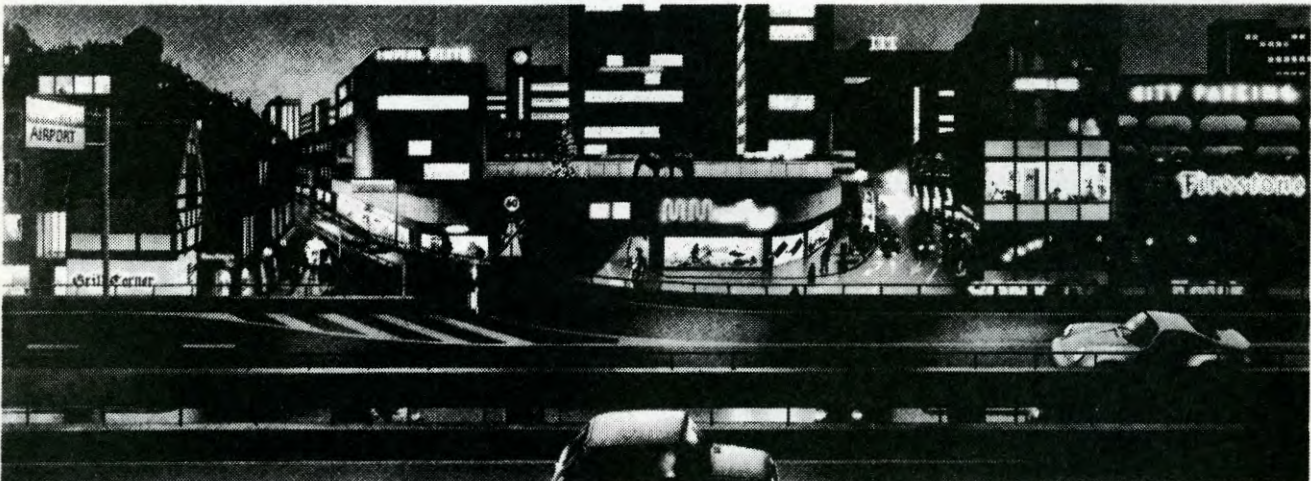




Wednesday, May 6, 1953



Sunday, April 17, 1966



Wednesday, January 7, 1976

Pictures from "The Changing City" by Jörg Müller (A Margaret K. McElderry Book). Copyright © 1976 by Sauerländer A. G., Aarau/Switzerland. English text Copyright © 1977 by Atheneum Publishers. Used by permission of Atheneum Publishers.

The Changing City, Jörg Müller, a Margaret K. McElderry Book, 1976, Verlag Sauerländer AG, \$9.95 from:
Atheneum Publishers
122 E. 42nd St.
New York, NY 10017

RAIN subscriber Sue Tideman of Los Angeles recently brought Jörg Müller's amazing portfolio, *The Changing City*, to our attention. A collection of eight separate fold-out color illustrations, Müller's wordless narrative chronicles the decline of a composite Swiss/German city over two decades, where neighborhoods, plazas, cafes and trolleys—signs of local economies and human energy—give way to autobahns, tower

blocks, boutiques and parking structures. It's the exploitation process of centralized economies that afflicts industrialized nations everywhere, and which even has a foothold in the Third World. Each frame of Müller's bittersweet time-lapsed exposure (three of which are shown here) offers a wealth of artistic detail you can pour over for hours, observing the various incarnations of a degenerating building or noticing the changes in patterns of socialization and styles. We'd sure like to see Jörg move into the realm of the possible with his talents; until then, if you find this too awful to contemplate, do as Sue suggests and read up rather than down. —SA

TRANSPORT

—We see the world not as a place for pillage and plunder,
but as a sanctuary in which we must temporarily dwell,
and of which we must take the utmost care;

—We see man and woman not as acquirers and conquistadores,
but as guardians and stewards;

—We see knowledge not as an instrument for the domination
of nature,
but ultimately as techniques for the refinement of the soul;

—We see values not in pecuniary equivalents,
but in intrinsic terms as a vehicle which contributes
to a deeper understanding of people by people,
and a deeper cohesion between people and the rest of creation;

—And we see all these above-mentioned elements
as part of the new tactics for living.

Henryk Skolimowski,
"Ecological Humanism"
Resurgence, Sept.-Oct. 1974

GOOD THINGS

Trees, Andreas Feininger, 1978, \$9.95
from:

Penguin Books
625 Madison Ave.
New York, NY 10022

This softcover re-issue of nature photographer Andreas Feininger's *Trees* has the kind of integrative approach to a subject that will excite your sense of wonder. In a remarkable blend of botanical information and schematic illustrations, rich prose and exceptional photography, *Trees* transcends the realm of both text-book and photo essay. It is an exercise in awareness. In one volume you can find discussions on how trees function within the hydrologic cycle, how they have contributed to our evolution as a species and our spirituality, and where to go to find the largest specimens of 40 varieties common to North America. Feininger's personal narratives add another dimension: he documents his encounter with the High Sierras' Bristlecone Pine, the *oldest living thing* on earth, and devotes a chapter to his favorite tree, the Southeast's Live Oak. His photographs visually highlight texture, size, color and configuration, and the commentaries are as revealing as the photographs they accompany. *Trees* is a book you will come back to—again and again. —SA

How Old Is Your House? by Joan Webber, 1978, \$3.95 from:

Pequot Press
Old Chester Road
Chester, CT 06412

One part of getting back to our roots and developing a sense of place is to discover the history of the house you live in. This little book is full of clues as to configurations of various types of houses (mostly New England) and how to tell if and when additions have been made. It then goes on to tell how to trace deeds, research tax records and dig through genealogies and wills. It is written by someone who painstakingly pieced together the story of her own house. —LdeM

Pacific Northwest Review of Books, monthly, individuals \$7.50/yr, institutions \$9/yr from:

P.O. Box 21566
Seattle, WA 98111

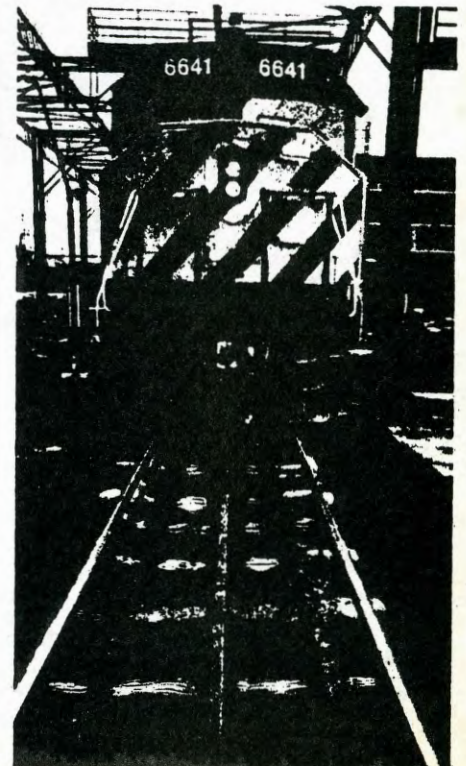
Part of the move towards independence and self-confidence of different regions of the country is the weaning away from the cultural dictates of New York City and the East Coast. After two issues this magazine is well on its way towards providing a good regional forum for literature. It covers largely Northwest authors and publishers with features on Ursula LeGuin, for instance, and the Lane County (Oregon) Bookmobile (who says people out in the country don't read?) I enjoyed the second issue more than the first and that bodes well for the third as they gain experience. Well worth supporting. —LdeM

"Becaks, Bemos, and Productive Pandemonium," Alan K. Meier, *Seriatim*, Spring 1978, \$2.50 from:
Seriatim
122 Carmel
El Cerrito, CA 94530
(reprinted from *Technology Review*, Jan. 1977). An excellent account, in story and pictures, of intermediate technology transportation vehicles in Asia. Bicycles, tricycles, pedicabs, motor pedicabs, three-wheel motorcycle trucks—you name it—designed, redesigned, and chewing-gum repaired for hundreds of specific applications. —TB

"Hopping Freights," Steve Adler, *The Colorado Express*, Volume XII, single volumes \$5, \$16/2 yrs. from:

Box 18214
Capitol Hill Station
Denver, CO 80218

The Colorado Express is a beautiful magazine published semi-annually with articles that range from in-depth features on trout to soapmaking and stargazing. The most recent issue contains the most delightful, thorough information I've ever seen on hopping freights (outside the yard, that is). Steve Adler explains not only the why, where and how but also the terminology, whistle codes, elements of a yard, and how hopping is viewed by the law. There is a map of train lines in the U.S. and suggestions for additional reading and viewing. What a way to go! —JM



from *The Colorado Express*

Roll on, Columbia

Woody Guthrie (1941)

*(Yes) Roll on, Columbia, roll on,
Roll on, Columbia, roll on.
Your power is turning the darkness to dawn.
Roll on, Columbia, roll on.*

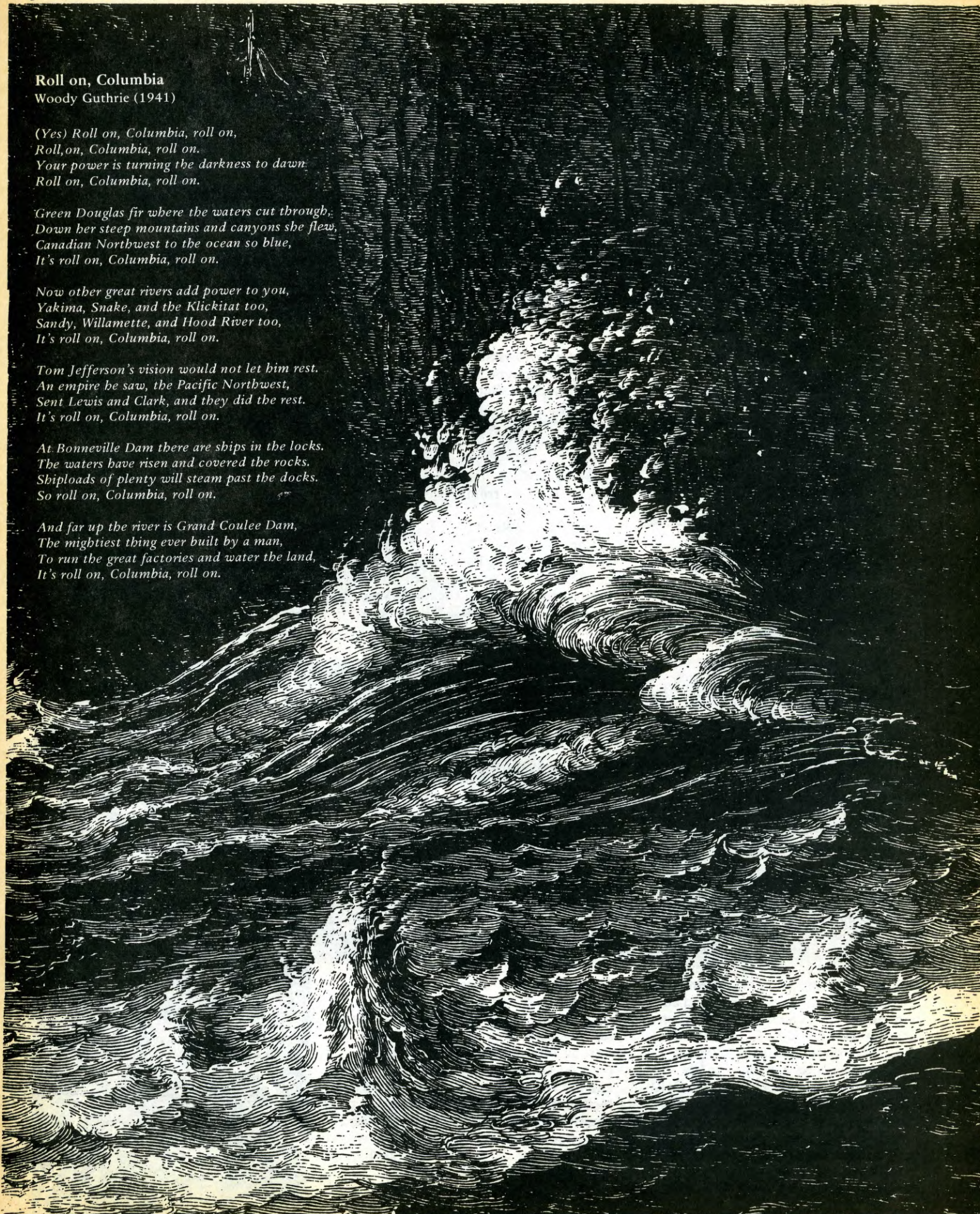
*Green Douglas fir where the waters cut through,
Down her steep mountains and canyons she flew,
Canadian Northwest to the ocean so blue,
It's roll on, Columbia, roll on.*

*Now other great rivers add power to you,
Yakima, Snake, and the Klickitat too,
Sandy, Willamette, and Hood River too,
It's roll on, Columbia, roll on.*

*Tom Jefferson's vision would not let him rest.
An empire he saw, the Pacific Northwest,
Sent Lewis and Clark, and they did the rest.
It's roll on, Columbia, roll on.*

*At Bonneville Dam there are ships in the locks.
The waters have risen and covered the rocks.
Shiploads of plenty will steam past the docks.
So roll on, Columbia, roll on.*

*And far up the river is Grand Coulee Dam,
The mightiest thing ever built by a man,
To run the great factories and water the land,
It's roll on, Columbia, roll on.*



Roll on, Columbia

—Lee Johnson

Cynical environmentalists may not want to read this, for by its end it will be clear that the Bonneville Power Administration can no longer be viewed as the local federal "bad guy" totally unresponsive to new regional energy goals, however much this characterization was deserved under the previous administrator. Though it still has a long way to go toward implementing a sensible, citizen-oriented, all-renewable energy system based on conservation and the Columbia River, even the most rabid and paranoid eco-freak should applaud and support BPA's first steps in that direction. Let's examine why this is so.

The New Administrator

Sterling Munro seems to be either an incongruously sensitive politician or a humane administrator who is open to and listening for all Northwesterners' suggestions on energy policy, rather than those of only the aluminum companies or nuclear power advocates. Either way he is spreading his attention much more widely than the last BPA chief, having little to lose and much to gain in doing so.

Certainly none of his public remarks (or the private ones we've heard about) have wallowed in the divisive attacks indulged in by the former administrator, with his politically stupid anti-environmentalist scare tactics. Even before he left BPA it was painfully obvious that Don Hodel's infamous "Nay to the Slow Energy Growth Doomsayers" speech was simply a futile last gasp meant to buck up the besieged electric utilities who could not yet see great profits in the dark and unknown tunnel of energy conservation and formerly "exotic" solar energy sources, including wind energy and bioconversion. Now even utilities, if they are financially rational, see the dollar benefits of staving off the need for costly new power plant construction if money can be made through weatherization.

And, after SUN Day, solar power in the region has become too obviously popular to long ignore by "studying it to death." Think about it. Have you ever before heard of nation-wide demonstrations by 20 to 30 million Americans in favor of the greatly increased use of a *specific energy technology*? All this, on top of the growing disenchantment with and escalating costs of nuclear power, the nation's *least-liked* energy technology, has led to important political shifts both in Congress with its growing "Solar Coalition" and in our Northwest state legislatures . . . all of which BPA and its new leader are adjusting to.

BPA: The Renewable Energy Agency

Recent speeches and newsletters by Munro have struck poetically deep into the myth, lore and practical wisdom of our bio-region. He has given us a chance to heal the wounds left by Hodel's inconsiderate slashing of our mutual social fabric and that trust of good will it builds on. The new man at BPA has appropriately reminded us of our greatest shared solar energy resource . . . the Columbia River.

If I were to talk about the virtues of the Columbia River system in the poetic style of Indian treaties, I would say: "So long as the sun shines and the winds blow, so long as the rains fall and the mountains soar, so long as the snows melt and the waters run to the sea, the Pacific Northwest will always enjoy a special bounty from nature."

That bounty, the Columbia River and its tributaries, blesses our region with an abundant source of clean, safe, cheap and inexhaustible energy. I think of that poetic style for describing this bounty because it deserves nothing

less. I think, too, of that part of the Indian heritage which tells us to show love and reverence for the land and its resources—and how all of us share a responsibility to manage our river system with great care, with fairness, and with respect for history and tradition.¹

Beyond this evocation of native American Indian consciousness, the administrator also lays out the importance of the River to the practical operation of wind and solar energy.

Today, as we search for answers to truly monumental energy problems, we think of many solutions—but perhaps not enough of the Columbia River as a major solution. Just looking at what the Columbia River has done for our region to this point, it is easy to say as I have many times that the Columbia is our region's greatest asset. But do you realize how much more the Columbia can do for our region as we and the nation move into new alternate energy sources that emphasize renewable resources such as the sun and wind and tides?

The main reason is that the Columbia River Power System has enormous flexibility, permitting it to be operated as needed to fill the gaps in the intermittent power flow from new sources. The sun doesn't always shine and the wind doesn't always blow, but the Columbia has those big storage dams to act as a giant storage battery. When the new methods are producing electricity, water can be held back in the reservoirs of the Columbia and its tributaries, then later released to meet demands when the new sources are not producing.

The Columbia will give us an advantage no other region possesses when it comes to making maximum use of the alternate energy sources of tomorrow—solar, wind, geothermal, tidal, biomass, co-generation, whatever.²

As to specifics, Munro's first newsletter stated,

Preliminary analysis shows that in seven areas of Oregon, Washington and Nevada, plus potential demonstration sites near The Dalles and Goldendale, at least 2,100 megawatts of wind-generated energy could be installed and generate approximately 5.7 billion kilowatt hours of electrical energy annually.³

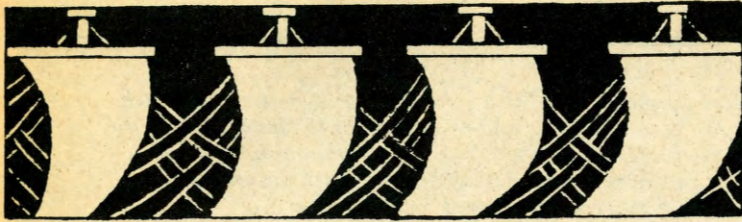
These ideas are clearly in line with the regional energy goals expressed by our three states, all of which stress the transition to diverse, inexhaustible energy sources as rapidly as possible. What we must now do is simply hold BPA's administrator to the tantalizing glimpses he has given us of a safer, less expensive, more environmentally benign, renewable energy future integrated with the astute BPA management of the river's power for energy storage.

Wind Power Use Slows Electric Rate Increases

Recently the nation's wind power researchers have found a new topic for conversation that may seem a rather obvious

continued +

1. "Principles for a Regional Power Plan," speech by Sterling Munro before Wenatchee (Wash.) Chamber of Commerce, May 15, 1978.
2. "Yes, Virginia, There Is an Energy Policy," speech by Sterling Munro before students at Central Wash. Univ., May 12, 1978.
3. BPA Administrator's Newsletter, March 1978, p. 6, available from Public Information Office, BPA, Portland.



discovery: wind power puts a cap on rising electricity prices. Unfortunately, with all the vital hullabaloo about nuclear power, the supposed energy vs. environment trade-off, and the rising consumer tide against utility rate hikes and construction work-in-progress, this very important fact has been lost in the fray. The logic is as follows.

Nuclear plants cost more to build than utilities ever admit during hearings for site applications; later overruns doubling or even tripling those capital costs are now commonplace in the utility industry; the plants are historically less efficient (i.e. actually available to produce power less of the time) than the utilities and the federal government ever admit; decommissioning and hazardous radioactive waste storage costs are complete guesses since neither has yet been done successfully (i.e. without leakage into the environment as occurred at Hanford); and the cost of uranium and the nuclear fuel made from it continues to increase rapidly under the influence of a uranium cartel similar to OPEC. At the same time, the cost of electricity from large wind generators located at the many good wind sites already found in the Pacific Northwest has been shown to be lower than the cost of nuclear electricity; the capital costs of large wind turbines are dropping rapidly as non-federally funded (and non cost-overrun prone) innovators like Charles Schachle of Wind Power Products (WPP) Co. of Seattle get into the act; wind generators are mass-producible and hence very likely to drop, or at least hold steady, in price, unlike nuclear plants which are still one-of-a-kind custom jobs even after more than 30 years of \$15 billion in *known* government subsidies for which a utility actually receives a "learner's permit" allowing unsupervised "on-the-job-training" in how to do "applied scientific research" in power production; and wind energy systems have no fuel costs. Once installed, wind electricity costs are essentially constant.

Put all this together and one finds that BPA and the Northwest's utilities should be economically installing wind turbines now, just as Southern California Edison Co. (SCE) is doing in San Geronio Pass, where it has signed a contract with WPP to have a 3-megawatt, \$1 million wind machine (i.e. \$333/kilowatt) installed by January 1979 and sending power to its customers by April 1979.

Long-Range Forecasts: Who Needs 'Em?

Ever since the energy debate heated up after the 1973 oil embargo, citizens and politicians have paid increasing attention to the often arcane and certainly confusing forecasts of future energy needs. The farther out into the future the utility, state government and local intervenor forecasts range, the greater the vociferous disagreement and name-calling debates. All of this seemingly useful activity is but an effect of the supposed need to know when to start building a nuclear plant which takes 10 to 12 years of lead-time to complete and bring on-line to provide power.

With wind energy this could all be avoided and we could retread the long-range forecasters into very accurate, short-range forecasters! For even large windpower plants not yet mass-produced take only 12 to 16 months to install. The famous pre-WWII 1.25 megawatt Smith-Putnam of Rutland,

Vermont, took only two years drawing board to grid operation; the 200-kw NASA-DOE Clayton, N.M. machine did it in 19 months, and now SCE Co. has contracted to have a 3-mw wind turbine 12 months after signing the purchase agreement.

Such short lead times mean that electrical generating capacity can be added almost simultaneously with actual increases in demand. In a sense, the size of wind turbines makes them very close to "load-following" and hence reduces the costs to the utility and its customers of under- or over-building power plants. This is another way that wind power keeps consumer costs lower than can nuclear or other power plants whose much longer construction lead times create a spurious need for impossible knowledge of the future. This underdeveloped potential for smaller megawatt increments versus lead time to unit operation is vital to economic power production and should now be included in BPA, state energy office and utility demand forecasting.

Snowpack, Streamflow & Windspeed

To bring into being the integration of wind power and the Federal Columbia River Power System will require that BPA pay as much attention, or more, to getting comprehensive wind speed data from thousands of anemometers across the region, just as it now automatically gets snow pack and streamflow information to guide the management of hydroelectric power. Fortunately, BPA has made an excellent start toward such an expanded wind data effort due to previous work by the Oregon State University Wind Power Group. BPA now funds Hewson, Baker & Wade of OSU to continue their work installing wind speed measuring instruments at Northwest sites now numbering over 40 and analyzing the data received.

Enter Senator Hatfield

Thanks to Prof. Hewson's pioneering wind energy education efforts in Washington, D.C., Northwest citizens wanting to see wind power put to use more rapidly have a savvy friend in the U.S. Congress who has already done much for us. Sen. Hatfield, with other Pacific Northwest legislators, worked to get the U.S. Army Corps of Engineers, Walla Walla District Office, to include wind energy in a study of future pumped storage sites. He also helped to increase substantially the nation's wind energy budget for fiscal year 1979.

If you like windpower and have the time, you might ask Senator Hatfield to work on 3 more items of direct benefit to his constituents:

- Expand the BPA-OSU wind data network by 200 new stations between now and December 1979 (i.e. 1 new installation every 2 days).
- Direct BPA Power Management section to give immediate high priority to all studies, analyses and data acquisition relating to the regional integration of wind-hydro energy systems.
- Direct BPA Contracts & Procurement office to acquire, by competitive bidding for immediate installation at already known excellent windpower sites, large wind turbines built within the region (Wind Power Products Co., Boeing).

As Long as the Wind Blows

We've come a long way from Woody's song about our big river. From bio-region consciousness to utility rates and BPA policy priorities, this has been a meditation on our water and our wind working together. In such a practical vision the staff of the world's largest renewable energy agency has a most important role. Let's do what we can to help them bring it about for all of us. ■

WIND

Gemini Synchronous Inverter Systems, by Windworks, Inc., 1978, 12 pp., photos, diagrams, graphs, tables, free from:

Windworks, Inc.
Rt. 3, Box 44A
Mukwonago, WI
414/363-4088

All you ever wanted to know about converting DC to AC power and feeding it back into your utilities' electric grid! This beautifully illustrated brochure covers how this is done using wind turbines, solar cells, solar thermal electric systems and small hydro-dams, with info on installation, safety, performance, power quality, utility interface, and load management. Extremely valuable in persuading a utility engineer since it includes a technical explanation of the electronic-electrical theories used and has such a professional look. Highly recommended for all public utility commissions, state energy officers and wind-power enthusiasts and users. —LJ

The Energy Adventures of Ernie an' Bud: Build a Wind Generator, by Loren Schultz, 1978, 6 pp., 25¢ from:

AERO
435 Stapleton Bldg.
Billings, MT 59101

Fantastic! You can't imagine how deep and how long I chuckled after reading along to the end of Bud an' Ernie's comic strip, finding that I could then actually color and scissor together a paper model of a wind-powered home-stead. Outrageous. Very highly recommended for all overly serious wind energy fanatics (like myself), for elementary school teaching, and for electric utility executives (see the batteries? see the Gemini DC-AC inverter?) Thanks, Loren. I needed that. What's next? —LJ

Pacific Northwest Regional Wind Energy Study, CRT-39, by James Peterson and E. Wendell Hewson, March 1978, 212 pp., 44 references, 57 figures, 49 tables, free while they last from:

District Engineer
Walla Walla District
Corps of Engineers
Bldg. 602, City-County Airport
Walla Walla, WA 99362

The greatest thing since sliced bread for the Pacific Northwest! Or at least until 1) the BPA-OSU report on wind turbine farms integrated with the energy storage capability of the Columbia River hydroelectric dams, and 2) the GAO report on regional energy management come out. Although this study focuses on various combinations of windpower and pumped storage in Bonneville Power Administration territory, the interpretation of data make it a model for other wind regions to emulate. Of particular interest are the first equations I've seen that allow the calculation of the number of large wind generators that a given hydro-storage capacity, in dams or pumped storage, can accommodate in order to smooth (i.e. load-level) their variable output. Also, PNW wind data is analyzed to show the interaction of a number of wind farms working together to produce power, an area which is explored in greater detail in the BPA-OSU Windpower Network Study. —LJ

WOOD

Biomass Energy Success Stories: A Portfolio Illustrating Current Economic Uses of Renewable Biomass Energy, HCP/TO285-01, March 1978, 51 pp., free while supplies last from:

Biomass Branch
Office of the Ass't Sec'y for
Energy Technology
Dept. of Energy
Washington, DC 20545

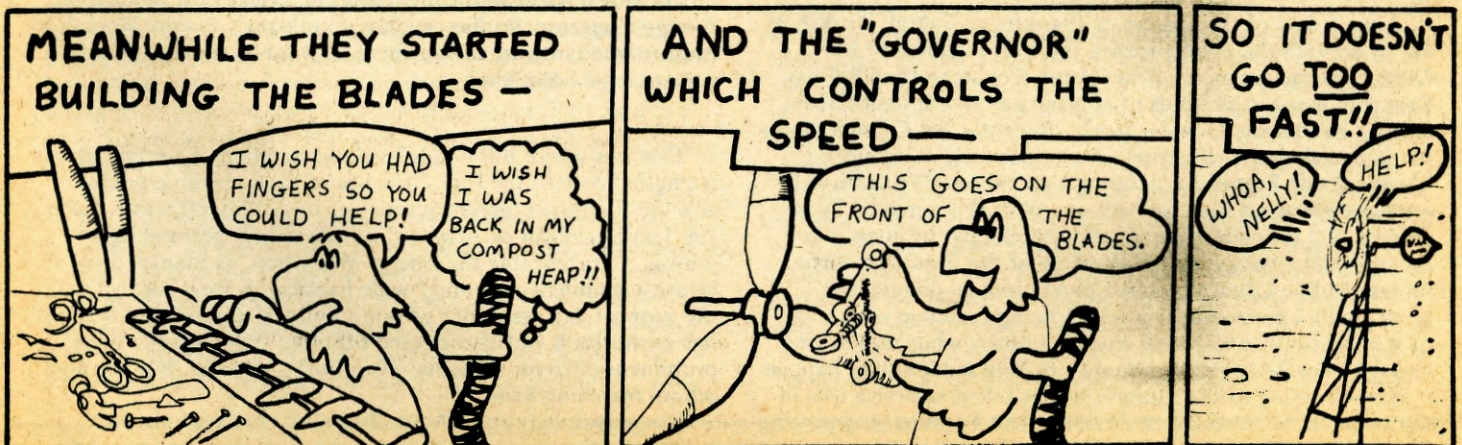
Biomass can provide direct process heat, or steam for process heat or electricity. This booklet is a very well-illustrated, semi-technical summary which covers project location, historical background, energy recovery, economics and evaluation. Applications in many states and Canada, and in the sugar, pulp and paper, manufacturing, electric utilities and, of course, wood products industries are included. Although an excellent series of appendices are used to give the reader a feel for the future potential of bioconversion, an expanded version should include more examples at both the smaller and larger ends of the end-use scale: from homes, small businesses, commercial establishments to large-scale wood-powered utility power plants now in use in Vermont. —LJ (Report courtesy Dick Durham, DOE-Richland)

Barnacle Parp's Chain Saw Guide, by Walter Hall, 1977 from:

Rodale Press
33 E. Minor
Emmaus, PA 18049

One of the most difficult accomplishments that could be attempted is writing a book on a specific subject that is useful to both neophytes and experienced old-timers. This book has done an excellent job at that, explaining how to buy, use and maintain, as well as sharing innumerable safety tips and chainsaw hints, all of which will save you dollars and consternation. Quality diagrams and numerous illustrations make this an excellent reference, and a real must for present chainsaw users or prospective buyers. (Bill Day)

(more Wood entries on page 21)

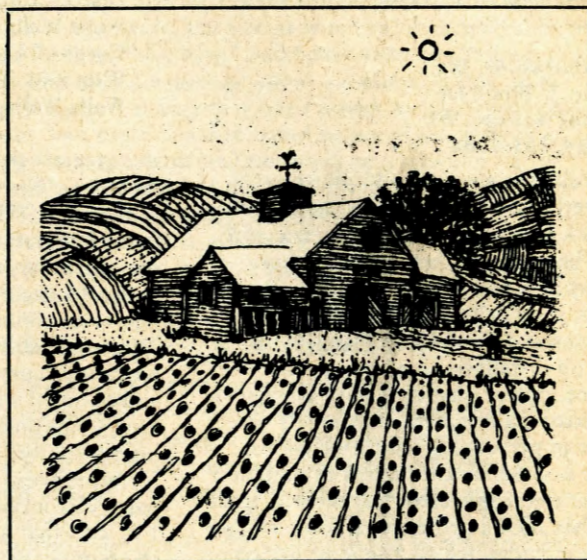


from *The Energy Adventures of Ernie an' Bud*

In more skeptical moments, I sometimes wonder how all the well-intentioned workshops focusing on new technologies and futures would stack up if measured for the net energy they produce. That is to say—whether kilocalories or consciousness—if the energy expended to pull a workshop off doesn't sometimes cost more than the energy produced by bringing people and ideas together. Some of the "fatter affairs," with their large budgets and over-ambitious agendas, are surely net energy losers. Then there are those modest gatherings that work with the resources available and manage to turn people on and catalyze action. The recent Energy Workshop in Frankfort, Indiana, had that air about it. What happened there was ample evidence that fertile ground exists in conservative, small-town America, where—with a little poking and prodding—people are increasingly willing to lend an ear to the ideas of renewable energy, appropriate technologies and beyond. No doubt, Frankfort was a net energy gain. —SA

NET ENERGY IN THE HEARTLAND

—Steven Ames



Frankfort is a small, midwestern town of about 16,000 people, situated 45 miles north and west of Indianapolis in the heart of Indiana's corn and hog country. A good reflection of many rural American cities, it is prosperous, white, middle-class and largely Republican.

On May 6 and 7 this year, something new happened in Frankfort that might just change its future: its first Energy Workshop, co-sponsored by the Frankfort Community Public Library and the Frankfort Community Public Schools. That sounds like a pretty mundane event, but for the people of Central Indiana, the guest speakers that came, and the cause of energy self-reliance in general, the Energy Workshop was something special. In one fell swoop, workshop participants experienced a rather intensive seminar with some of the best authorities available talking about energy-efficient homes, passive solar design, integrated bioshelters and wind energy potential. They were able to see actual solar and wind installations, buy the latest materials available and ask questions about how all this could change their own situations. More important is how this eye-opening experience was mobilized far from any metropolitan or university setting, and how a small community came to rally around this workshop with considerable support.

A great deal of the success of Frankfort's Energy Workshop has to do with the good energies and thoroughness of Bill Caddell, prime organizer of the event. For some time Bill has been interested in all kinds of appropriate technologies, from antique hand tools to wood stoves. Recently the Caddell family has undertaken the construction of a passively solar heated house outside Frankfort, utilizing a greenhouse/Tromb  wall system with wood heat for back-up. With this personal background, Bill is firmly committed to spreading the good word on renewable energy, and as Director of the Frankfort Community Public Library he's in a good place to do just that. In all, Bill's a great combination of being someone with a lot of the right values for these changing times, while also having enough leverage in the community to help make things happen.

Since coming to the Library, he has taken an active role in the community, working with various local groups, and putting information into the right hands when it can influence impor-

tant decisions. In the last couple of years the library has sponsored successful small workshops on solar and wood heating that were attended by people from all over Central Indiana. Eventually, Bill found that they had used up all the local talent in these fields, with no decrease in the demand for information. So the time seemed ripe to reach out for expertise from other places. Says Bill: "While snowbound last December, I saw Alex Wade discussing his book, *30 Energy-Efficient Houses You Can Build*, on an Indianapolis television program. I decided to try to get Alex, and other authors or editors of energy-related magazines, to come to Frankfort."

Last January he started contacting potential speakers for an energy workshop, writing letters and following up with phone calls. Steve Baer of Zomeworks in New Mexico showed an initially strong interest in this post-Sun Day event, saying that he would pass up an opportunity to speak in New York for a small-town setting. The publisher of Malcolm Wells' new book, *How to Buy Solar Heating Without Getting Burnt*, arranged for the "underground" architect to come to Frankfort. Other speakers became interested in converging in middle America, to learn from each other and to see what the local people were doing. Alex Wade. John Todd of New Alchemy Institute. Michael Evans of *Wind Power Digest*. Don and Abby Marier of *Alternative Sources of Energy* magazine. Rather quickly, Frankfort's Energy Workshop mushroomed into an all-star show, and it was the community's turn to respond in kind.

This was where Bill Caddell's understanding of a small town's strengths came to the fore. "His use of local resource people and the Frankfort infrastructure was incredibly effective," says Jim Laukes, editor of *Acorn*, the midwest a.t. networking journal. In promoting the Energy Workshop, he managed to create a genuine community-wide happening, weaving together the support and assistance of not only local appropriate technology enthusiasts, but also elected officials, civic organizations, prominent citizens, students—everybody, it seems, but the high school marching band.

Not surprisingly, the library Board of Trustees lent their backing to the project, sponsoring the Workshop and extending

a \$1,000 guarantee from their Gift Fund. The School Board did the same; it had recently formed a citizen's energy conservation task force, which would perhaps find answers to their specific questions at the Workshop. They also generously offered the Workshop free use of the High School and its facilities.

With this initial momentum, the involvement of the rest of the community in the project was extraordinarily successful. Or maybe it's just a matter of what a town like Frankfort can accomplish when its sights are set on something positive. Locally prominent community members were found to be host homes for the guest speakers. Members of high school clubs volunteered to park cars, usher and work in the kitchen. The Frankfort Historical Society, 4-H and Boy's Club were recruited to prepare meals, and even the school and library trustees volunteered to help out during the day of the workshop.

The library staff handled publicity for the workshop, taking good advantage of the early commitments of well-known speakers. A thorough promotional campaign was mounted covering national energy-related magazines, commercial and public broadcast media in Indiana and surrounding states, as well as libraries, college newspapers and schools of architecture, engineering and agriculture throughout the Midwest. The regional television and radio stations responded with good coverage; the financial page of the *Indianapolis Sunday Star* previewed the workshop two weeks early by interviewing Malcolm Wells.

An effort was also made to attract local, state and national political leaders to the workshop. "We even invited President Carter, or a representative from the Department of Energy," says Bill. "What we got was Jimmy's Sun Day proclamation—two days late." Appropriately, Frankfort's Congressman, John Myers, and Mayor Mary Jane McMahon did accept the invitation.

By the time May 6 rolled around, all this advance work and community preparation had paid off. A tremendous number of early registrations had come in, and the local community was primed and ready. On the eve of the workshop over a hundred people welcomed the guest speakers with a country-style reception at the home of the Library Board President. "It was a great opportunity for everyone to rub elbows, and for community leaders to see that these advocates of engaging new ideas were real folks," recalls Jim Laukes. "In the process, they were able to learn that people of average means could take advantage of uncommon opportunities to do exceptional things." There was a real connection in all this for the practical people of a small Midwestern town.

The next day 1,000 people crowded Frankfort High for a full day's activities, representing a healthy mix of backgrounds and politics. There were farmers, homeowners, back-to-the-land folks and people into alternative lifestyles. These were groups that don't normally mix well. But each had paid the \$10 registration fee—more than admittance to the State Fair or a concert—and they were coming to seek answers to very similar questions. The day's schedule was a blend of speeches, slide shows and question and answer sessions. There was free time to buttonhole speakers or view a.t. exhibits and information tables set up by non-profit groups. Tours of local earth-bermed and solar homes, wind and water power sites, were also pre-arranged by the workshop staff.

But the emphasis was on more than energy self-reliance. A lot of attention was focused on Why Do All This? This was good background for the Frankfort audience. Speakers examined what attitudes had taken us in hopeless directions, and what the impetus was for changing. Somehow, on the home turf, these dead serious insights took on a compelling directness. "Our science and technology is addressing itself to cosmetics," said

John Todd, "cleaning up a little bit, but not tampering with the system that is based on the limitless consumption of materials. . . . Any society that builds itself on an unforgiving technology, whose waste products are leaking into the environment daily, is simply committing itself to a long-term folly." As Todd spoke, one of the Indiana Alliance groups leafleted outside against the construction of Public Service Indiana's Marble Hill nuclear reactor.

These critical realities were balanced by the presentation of the disarmingly logical alternative: that wind, water, sun and wastes can be integrated into our lifestyles, to do the jobs that need doing while enhancing our quality of life and survival on the planet. Malcolm Wells showed how the destruction of the land's topsoil and vegetation could be reversed by building underground homes and offices—even airports. Steve Baer discussed his 7,700 sq. ft. passive solar warehouse/office building in Pecos, New Mexico, which last winter had a \$30 heating bill. Alex Wade emphasized the tremendous potential in recycling used lumber, bricks and glass in construction as a form of energy conservation in itself. Mike Evans outlined how mass production and rising costs of conventional energy sources are quickly making small wind generators economically competitive and a hedge against future inflation. A whole realm of possibilities was opened up to workshop participants.

Like conferences and discussion occurring all over the country, the Frankfort event was not only an introduction to new technologies, but also a probe into the changing values and economics that underlie them. A lot of this is new territory for small town folks. Yet in the process of seeking out new tools, our attitudes about how and why we are using them start to change. And so there were glimmers at Frankfort of the need not only to change the way we do things, but to change our expectations and our understanding of what the "good life" really is.



At day's end quite a lot of information had been laid out—so much so that one can't help but wonder if there wasn't a little overload on the part of newcomers. It was also true that enough small group encounters did not happen within the heavy schedule—during which the participants themselves could swap ideas, make contacts and plan future activities. With a little guidance, these tactics could take future workshops beyond individual information-seeking into more community-oriented endeavors and local political arenas. At this point, however, people were urged to return to their home towns and work through local institutions to make more information on renewable energy and appropriate technologies available to the public. Special classes and materials acquisitions, especially through local libraries, were highly recommended. After all, that's how all this had started in Frankfort. Each pragmatic step forms the basis for other possibilities.

In Frankfort small changes are already starting to occur: The *Times* of Frankfort did a series of articles on the workshop

which have been syndicated for several major Indiana newspapers. Local radio stations broadcast interviews with several of the guest speakers daily for weeks on end. The contact that locally prominent people had with the speakers that stayed in their homes has gone a long way in changing local attitudes about about the practicality of a.t. Several people have indicated that they are re-evaluating their pro-nuclear attitudes. In addition, the Frankfort Schools and Library are making plans to remodel their buildings with energy conservation techniques, and possibly solar retrofits. Feedback is also coming in from all over Indiana about plans for underground houses, solar heated libraries and apartment buildings and other energy-efficient structures whose builders attended the workshop.

In the last several decades, small town people have faced the same onslaught of Big Energy, Big Money pressures as everyone else. Rural electrification, bigger farm equipment, land speculation and too much television from too far away have had a strong effect on rural America. The once strong ethic of self-reliance is in sad shape. Bill Caddell admits that it will take a lot of effort to change complacent attitudes—like the blind faith

in electricity as some kind of energy cure-all. But he's also begun to see change happen. And then, like his old friend, the township trustee who never saw fit to get rid of his wind-powered pump in the first place, there still exists a strong connection between these folks and self-reliance that can be built upon. Some of it has to do with dollars and sense. Some of it has to do with knowing how to work with neighbors. There is a certain kind of realism in small towns about problems and their solutions. It makes them very appropriate places to jump into action in trying to build a future we can live with.

Bill Caddell and his hard-working staff at the Frankfort Library have learned a lot about small town conferences. For those of you interested in more details on Frankfort's Energy Workshop, feel free to contact him at the Frankfort Community Public Library, 208 West Clinton St., Frankfort, Indiana 46041. Be sure to enclose a self-addressed, stamped envelope.

(Thanks to Malcolm Wells, Jim Laukes and especially Bill Caddell.) —SA

SOLAR

Solar/Conservation Remodel Candidates for Seattle City Light, November 1977, 110 pp., available for \$8 from:

**Ecotope Group
2332 East Madison
Seattle, WA 98112**

In an urban area with established housing stock, a program of solar heating, conservation and energy efficiency must focus on the existing structures with a "retrofit" or remodel approach. In Seattle, half the electricity used is in the residential sector. Consequently, the reduction of energy used for home heating, domestic hot water and other low grade heat energy applications is of prime importance—and such uses are the most obvious candidates for solar energy in the Northwest climate.

A large portion of the projected energy growth used to justify an investment in nuclear power is the conversion from oil/gas to electricity for home heating. *Solar/Conservation Remodels . . . for Seattle City Light* is a proposal for a conservation/passive solar heating remodel program for existing urban housing to work as a substitute for new central station thermal power plants. Such a solar/conservation project can serve as a basis for a "conservation" utility. The report develops the rationale for this and presents the potential for solar energy and super-conservation in a remodel context. To do this, Ecotope analyzed 19 Seattle homes and documents here five preliminary designs, with cost information on these designs. An attendant economic analysis is also presented. (Courtesy David Baylon)

The Solar Energy Timetable, Denis Hayes, Worldwatch Paper 19, \$2 from: Worldwatch Institute 1776 Massachusetts Ave., N.W. Washington, DC 20036

From the prime organizer of Sun Day and author of *Rays of Hope* comes this latest update on the solar transition worldwide. Hayes proposes a timetable for this conversion based on a 75 percent increase in world population by 2025, when twice as much energy would be used at twice the current efficiency. Five-sixths of this energy, says Hayes, can be provided by renewable sources, particularly direct solar heat, biomass fuels and renewable forms of electricity.

Fossil fuels would provide the remaining one-sixth, mainly as back-up, while nuclear electricity would be phased out. This timetable assumes a four-fold increase in energy supplies for Third World countries, and would require massive production of solar technologies, along with significant increases in hydroelectric and use of the world's forests for wood energy crops. The point is that we don't have to prove the technologies, nor the obvious benefits in making this transition; rather we need to begin training people, building equipment and establishing the infrastructure to get things rolling. —SA

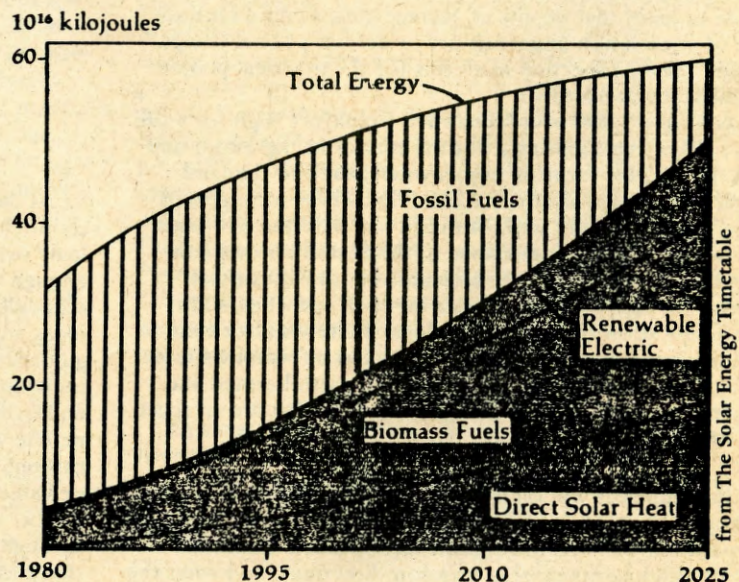


Figure 1: Proposed World Energy Production Timetable, 1980-2025*

*Energy sources supplying less than 1 percent of total are omitted.

National Sun Systems
 2065 Sperry Avenue
 Ventura, CA 93003

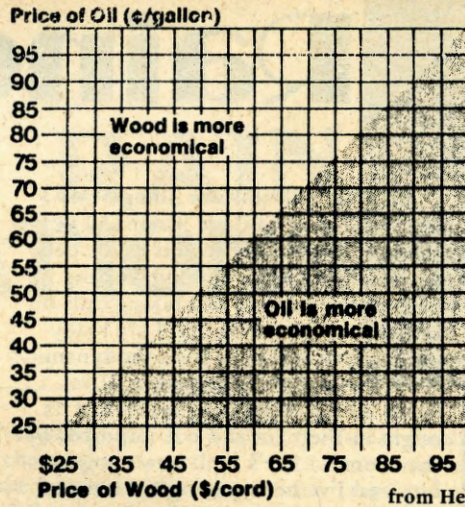
Yes, friends, solar energy has arrived, and can now provide us with all the amenities of modern life. Have your own solar-powered dancing styrofoam hamburger or gumball popper. Gain inspiration from a solar powered religious display on your desk singing "Jesus Loves Me." Become energy self-sufficient with your own desk-top solar powered windmill. No batteries needed. The sun is our strength and salvation. Don't take life too seriously. If it's solar toys, these folks got it. —TB

SUNRAE

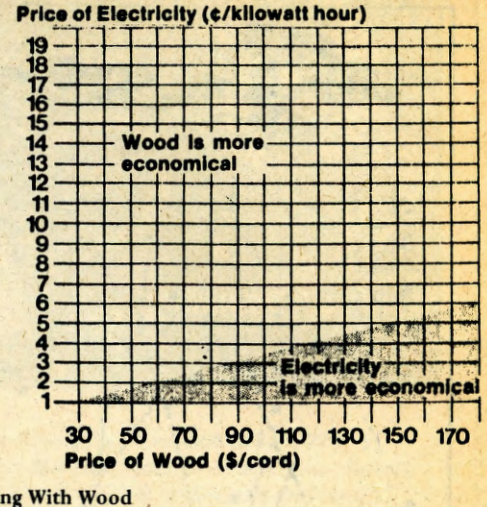
1107 9th St., Rm. 420
 Sacramento, CA 95814
 916/448-1198

As solar starts to come on strong, California may well be the bellwether for the rest of the nation. SUNRAE is California's grass roots solar lobbying organization that helps citizens to stay abreast of all the developments that are coming right and left. They now have six offices across the state, including a full-time lobbyist in Sacramento. SUNRAE is the author of SB-1731, the California Solar Housing Assistance Retrofit Program (CAL SHARP) designed to provide solar energy for state financed public housing projects. They are also publishing a newsletter, helping folks keep tabs on the whole wave of solar bills before the legislature, utility entry into the solar arena and other economic issues. Other offices are located in LA, San Jose, the Bay Area, San Diego and Goleta. —SA

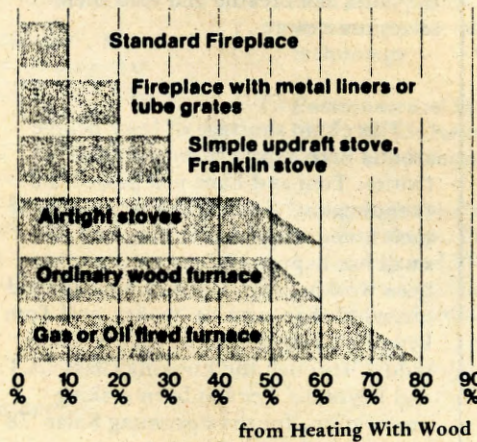
Wood vs. Oil: Economic Comparison



Wood vs. Electricity: Economic Comparison



Comparative Optimum Efficiency



The Woodstove Annual, \$2.95 from:

Society for Protection of New Hampshire Forests
 5 South State Street
 Concord, NH 03301

Two-thirds (80 pp.) of this year's annual is a wealth of information on fuel wood — chain saw safety, legal problems of allowing someone to cut firewood from your woodlot, seasoning, transportation, etc. Rest contains the usuals on installation, fire safety, etc., plus what would be an interesting chapter on metal chimneys except that a typographic error has combined the section on air-cooled and insulated chimneys and thereby omitted discussion of the creosote hazards of the former. —TB

WOOD

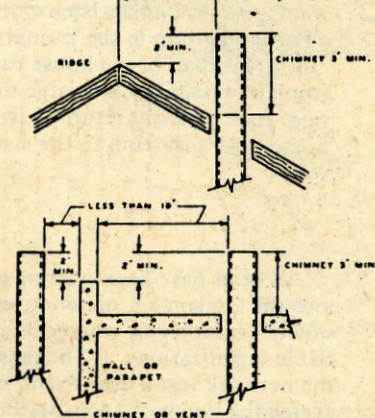
Heating With Wood, \$2 from:

Institute of Man and Resources
 P.O. Box 2008
 Charlottetown, PE1
 C1A 1A4 CANADA

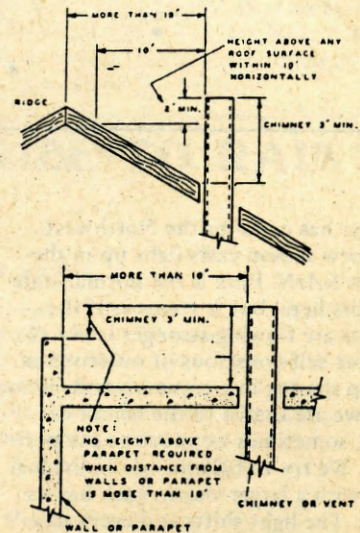
This is the first thing I would hand to anyone asking about heating with wood. Beautiful, clear graphic presentation of information, dealing with all the questions a person will probably ask or should ask about wood heat. Obtaining firewood, how much to get, economics of wood vs. other heat, how to choose a wood heater or furnace, how to improve efficiency of a fireplace, location and installation, safety and insurance questions are dealt with simply and clearly. Well done! —TB

Chimney Clearances and Terminations

Termination of Chimneys and Vents for Residential Type and Low-Heat Type Appliances.



Termination less than 10 feet from ridge, wall or parapet.

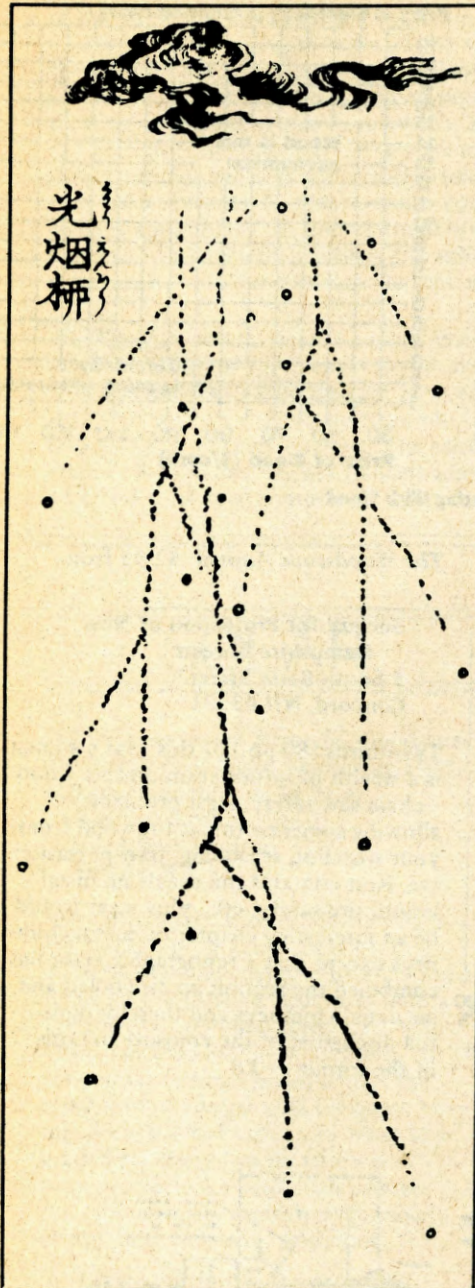


Termination more than 10 feet from ridge, wall or parapet.

(Diagram taken from NFPA Standard 211, "Chimneys, Fireplaces and Vents, 1972")

from The Woodstove Annual

Raindrops



Summer has come to the Northwest, and a new season casts light upon the folks at *RAIN*. Flux is the normal state of affairs here, but it seems as if the currents are flowing stronger lately. We are more self-conscious of ourselves as a group sharing in a common task. Sometimes we are drawn to the center of things, sometimes we move to the periphery. We try to balance our individual paths with a larger vision; each has its power. The light shifts and every day has its shadows. Still, there is good work and good times to balance the mysteries of the season. And there is *RAIN* . . .

So what's all this *sun* doing here? I can swear they told me it rains all year 'round. "Well kept" secrets aside, people around here are shaving, cutting hair, wearing shorts and taking calls on the back steps. Linda and I are readying the tiny side yard for a biodynamic/French intensive style garden. (I've heard intensive planting really had its origin in Vietnam and was imported by the French.) She's built new compost bins and I've been mining old slabs of concrete from our partially abandoned driveway to make room for food. Joan says she sees the day when all those over-sized parking lots are torn up so the cities can breathe and feed themselves once more . . .

There's no shortage of busy people around here. Apart from the usual activities: Tom and Lane just passed the "topping out" stage in the rebuilding of their home at the coast. There was a small but happy celebration. Lane's been working with Gigi Coe on the final phases of their new a.t. reader, and Tom keynoted a recent conference in Colorado: "Through the Looking Glass—A.T. and Beyond." Lee has been making preparations for the upcoming Solar '78 conference for the Pacific Northwest, and has been planning exciting testimony for the re-convening of the Pebble Springs nuclear plant siting hearings. I was back in Ohio and Michigan a month ago and participated in the reunion/seminar of the Ann Arbor environmental Network; more on that in an upcoming issue. Linda's been working with a Portland group in the formation of an "integral urban"-type house to demonstrate its feasibility in a large urban setting. Joan recently returned from a homeward migration to the sunflower state.

All of us have been putting energy into the Oregon a.t. network, which is slowly beginning to emerge as an identifiable organization . . . The members of the network lost a dear friend with the accidental death of Lynn Mathews of Eugene. Although none of us at *RAIN* knew Lynn well, we often shared in her good spirit at meetings and gatherings. Lynn was co-ordinator for the city of

Eugene Community Garden, and had also been instrumental in the setting up of the University of Oregon's Urban Farm. In a particularly appropriate remembrance, nearly 100 of Lynn's friends and family participated in the planting of 25 fruit trees at the Farm.

A lot of the information *RAIN* focuses on has power behind it, and we'd really like to see that good energy used effectively. It's always been gratifying to see old issues get swapped and recycled. To help this whole process along, and to help strengthen our financial self-reliance, we are beginning to re-assess our circulation and subscriber-ship. This will entail doing some outreach work with individuals and networks whom we feel could get good mileage out of *RAIN*. We may also be working with someone who has done outreach for other new age publications. You can help this process along by suggesting *RAIN* to people who would find it to be of help in their endeavors, or perhaps to your local library, where it can get into even more hands. As always, we're interested in your reactions to the ways we go about changing. The thoughts of you believers in *RAIN* are very important to us.

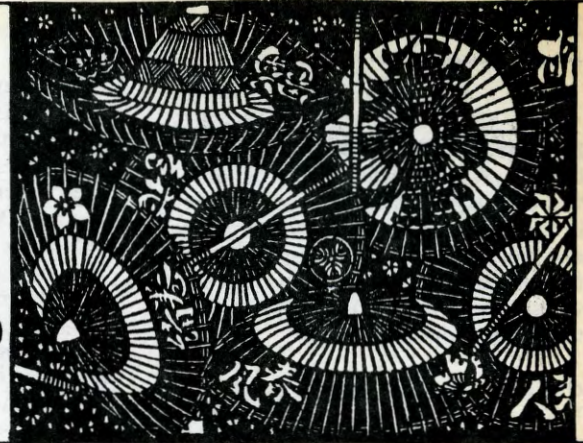
Our next issue will be the combined August/September issue, and it will be in the mail by the middle of August. We do this combined issue twice a year, which frees up six weeks, rather than four, before and after its printing. So we'll be in your mailbox a little later than usual—and having a little fun with the extra time!

We hope that these summer weeks find you well, and that you are able to renew your relationship to the earth and all living things. —SA

WHOOPS!

A little triangle of light obscured the access information to Wendell Berry's book excerpted in our June issue. The article was reprinted from *The Unsettling of America* (\$9.95) by Wendell Berry, by permission from Sierra Club Books, 530 Bush Street, San Francisco, CA 94108.

RAIN PUBLICATIONS



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

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

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



RAIN
2270 N.W. Irving
Portland, OR 97210

SUBSCRIBE TO RAIN!

SUBSCRIPTION RATES:

- Regular: \$10/year -- 10 issues \$ _____
- Living Lightly: \$5/year -- 10 issues (income less than \$5,000 ... ?) \$ _____
- Add \$2.80/year for Canada and Mexico (payable in U.S. Dollars). \$ _____
Inquire for other foreign rates

- Publications (listed above) \$ _____
- Donation \$ _____

- Add \$5 billing fee if payment is not enclosed \$ _____

TOTAL AMOUNT ENCLOSED \$ _____

_____ Zip _____

The Post Office won't deliver magazines without zip codes.

EVENTS

Heritage Tipi, Box 910, Station Main, Calgary, Alberta, will be offering one- and two-day workshops all summer long in tipi construction and living, and weekend workshops in wilderness living and foraging that are conducted out in the wilds. Write or call 403/265-8474 for times, locations and fees.

One of our favorite papers, Acres, U.S.A., will convene their fourth annual conference in Kansas City on July 26-28. This year's conference will open and close with individual and national economics as focal points. The rest of the sessions will focus on ecological agriculture, covering such topics as seed potential, scientific tillage and hydroponics. A special conference luncheon will feature as guest speaker Gene Poirot, author of Our Margin of Life, reviewed in this issue. For registration information call 816/737-0064 or write Acres, U.S.A. at 10227 E. 61st St., P.O. Box 9547, Raytown, MO 64133.

SITKA, a non-profit Center for Art and Ecology located at Cascade Head on the Oregon coast, offers an extensive summer program with courses and workshops in Book Arts, Fibers, Ceramics and a large selection in Ecology. Sample offerings run from "Natural History of the Forest Canopy" to "Bird Sculpture in Wood," with several courses accredited by the Center's co-sponsor, Linfield College. Films and concerts at modest prices are a regular summer feature of SITKA. For their summer calendar, write to them at Star Route, Box 76, Neskowin, OR 97149.

Community Service, one of the original organizations advocating small community, will host its annual summer conference this July 28-30 at the Glen Helen forest preserve in Yellow Springs, Ohio. The focus of this meeting will be *Building Community Where You Are*, and it will include five resource people who have participated in community building in varied settings throughout the Great Lakes area. Registration is \$37 per person, including accommodations and meals. For more information contact Community Service at Box 243, Yellow Springs, OH 45387, or call 513/767-1461.

Heathcote Center and the School of Living will sponsor their annual Shelter Conference, August 18-29 at Heathcote Center, Freeland, Maryland. This year's conference will focus on do-it-yourself refitting of existing structure for passive solar/wood burning combinations. Two days of lectures will be followed by six days of actual construction under the guidance of skilled craftspeople. The pre-registration fee is \$75.00, which includes sleeping facilities, vegetarian meals and entertainment. For more information contact the Heathcote Center, Rt. 1, Box 129, Freeland, Maryland 21053, or call 301/329-6041.

The New Alchemists, our friends in Woods Hole who've been working on a.t. for many years, could really use our financial support right now. Send contributions or memberships (\$10 and \$25) for which they'll receive matching funds to: Christina Rawley, Membership Chair, New Alchemy Institute, Box 432, Woods Hole, MA 02543.

The Small Farm Energy Project, a research and demonstration project in alternative energy and conservation for small farms, will conduct a Small Farm Energy Seminar at Hartington, Nebraska, August 25 and 26. Alternatives to high costs for energy and fertilizers will be featured during the two-day event, including solar collectors for farm buildings, wind electric generators and composting systems. The second day of the seminar will be in the field, touring various on-site installations at several farms in the Hartington area. Early registration deadline is August 10. For further information write the Small Farm Energy Project, P.O. Box 736, Hartington, NE 68739, or phone 402/254-6893.



RAIN
2270 N.W. Irving
Portland, OR 97210



Forwarding and Return Postage Guaranteed