Photo by John Cressey

New Alchemy

Photos by Alan L. Pearlman and John Cressey

Photo by John Cressey

It was a summer of sunflowers, marigolds and cabbages, tilapia and midges, weeding and picking, video, film and the press, intense women's caucuses in the kitchen, and swimming, feasting and music by sun or firelight.

Clear spring days of planting were followed by a warm June. Then, came an overcast, wet July with wheat unripened on the stalk and sullen green tomatoes on the vine. August was hot and sunny and people, plants and fish bloomed. Then, as perfection never lasts, the summer people drifted away, the children were herded back into schools, it became a little cool to swim and summer slowly became fall, gently, as it does on the Cape, with a gradual transition from green to rust and copper, and a quiet folding away of the summer's brightness.

— NJT

The Gardens

The work on last summer's garden really began in February when Hilde, armed with a variety of gardening manuals and innumerable seed catalogues, sat down to do the planning. To have some basic goal or guideline, we had agreed to plan a garden that would provide vegetables for twenty people for a year, preserving as much as possible. In addition there would be Saturday lunches and other less predictable feasts. Plotting all this was incredibly complicated. The previous year we had had Yedida and Rich Merrill from New Alchemy-West to guide us. Last spring Hilde and Earle had to find a way to estimate how to stagger planting times to avoid total inundation by all the green beans, for example, maturing at once. They had to learn what each crop required in terms of sun, shade and moisture, and which plants would be best near each other. We did experiment with planting several lines of pole beans and corn side by side with the idea that the beans could climb the corn stalks for support. This was definitely not successful. The corn was slow in germinating, and the beans uncooperatively took off without it.

The immediate outcome of all the reading and research was a giant chart that ran the length of one kitchen wall. With accompanying maps of the garden, it was designed so that anyone who wanted to help with the planting could check the chart under the appropriate date, find the list of seeds to be planted and locate on the map in which line, in which garden plot to plant them. The chart was a monument to clear thinking in two ways. Dealing as we do with large numbers of people who stop by and want to help, the chart made it possible for people to understand very quickly what they could do; even more gratifying were the beautiful gardens and the full harvest.

All the gardens were surrounded by what grew to be young hedges of marigolds. Judging by this summer's experience, the marigold, alleged to be a repellent, is at best a decoy or trap plant, attracting pests away from other crops. At times during July there seemed to be a Japanese beetle for every marigold blossom. We were almost completely free of aphids which had been a great nuisance the previous summer; still our motive in planting them in such abundance had been as much for their aesthetic as their utilitarian virtues, and there is no question as to the beauty and colour they brought to the garden.

In a productive, healthy garden where diversity is considered fundamental, there is the beginning of an agricultural ecosystem which can harbor, on some crops at least, a fair insect population. The garden was bountiful yet the insects got their fair share..... for example, it seemed the beans would be overwhelmed, first by the Japanese beetle and later by the bean bug, but they kept producing and we had

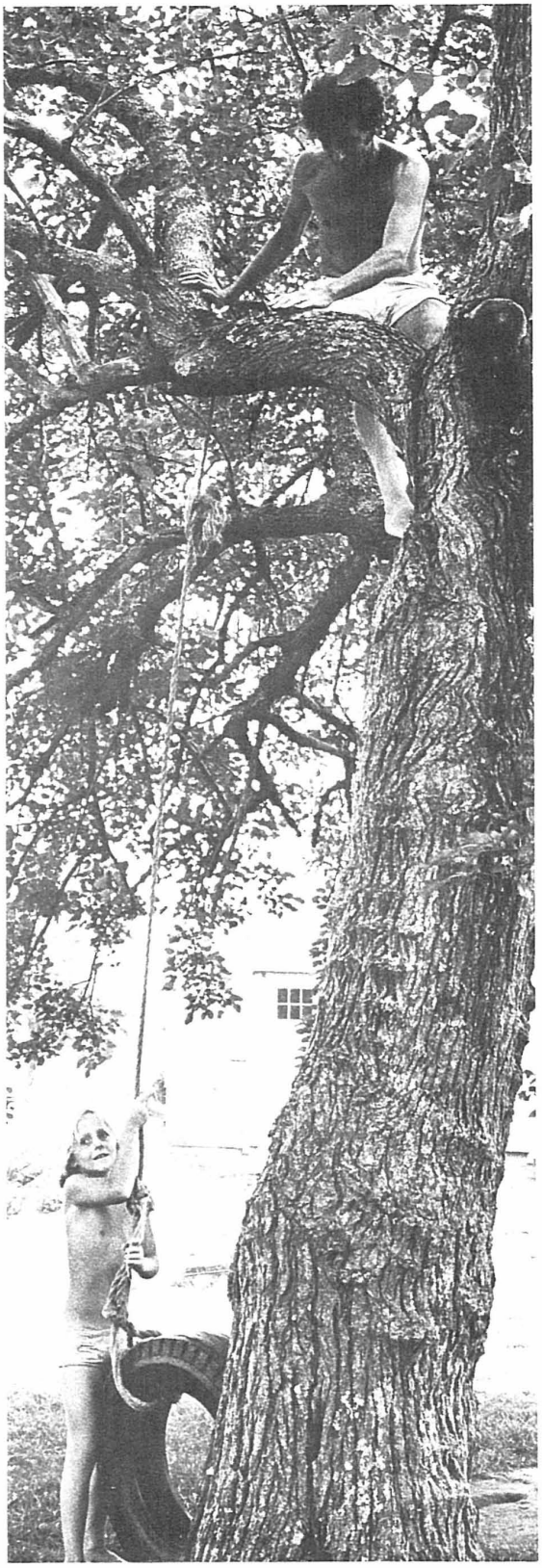


Photo by John Cressey

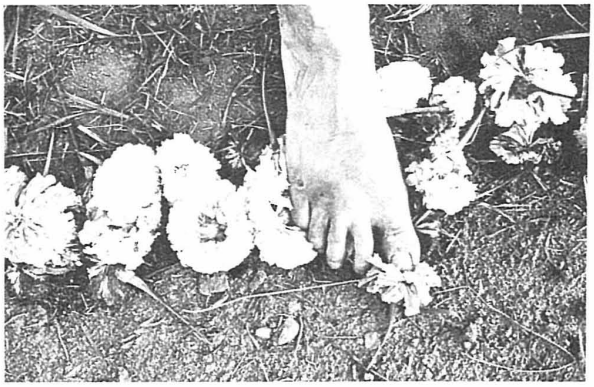


Photo by John Cressey

more than our wildest expectations. This was true of a number of crops. In our diversified garden no single crop was significantly reduced by pests, not even by the Japanese beetle. We did routinely pick the beetles from the grapes and young trees where damage seemed greatest. Perhaps it's a kind of tithing. Or perhaps to quote Gary Snyder again with this kind of sharing, "how can the Harvest fail?"

We tried one method of insect control which should perhaps be mentioned, although it would only be of use to groups with large populations of children. We tried paying the kids a 'penny a pest' for every creature they destroyed. The kids killed hoards of insects and were making fortunes until Bob Angevine ventured that he felt that the project was based on faulty economics, and that we couldn't afford it.

The other major garden experiment last summer in a season of happy experiments was in the use of fish pond water as a fertilizer. It worked. This is discussed by Bill McLarney in *Land and Its Use.*

In addition to the basic food garden which included a good many vegetables and herbs I have not mentioned, we undertook growing, in a largely experimental way, several other crops. Along the perimeters of the vegetable garden, we planted strawberries, blueberries and grapes. The grapes were planted to see whether there would be varieties of wine grapes particularly suited to the Cape. Next to the fence between the garden and the woods we planted rosa rugosa, but many of them did not survive Similarly, the sweet peas we had hoped would swarm over the fences failed to do much, and we have decided it was a good lesson in listening to your land and letting it guide you. It seems that marigolds belong with us here whereas sweet peas do not, at least until our land is more fertile.

We grew a magnificent field of sunflowers that stretched to 14 feet in height. From the windy spring day when the Shanti school helped us plant them, they puttered along slowly. One June Saturday, it was difficult, when weeding, to distinguish sunflowers from weeds. Then suddenly, in beanstalk fashion, they shot up. By August there was a jungle where one could lose oneself, green and shaded, on the sunniest day. Then Earle with his machete decapitated them one by one and our forest was gone. The seeds will feed rabbits, chickens and people. We also had a very successful soy bean crop. They will be used as a supplementary protein for the tilapia, as well as food for ourselves.

Again, largely as an experiment, we decided to try growing wheat, although the day when one can think of merely experimenting with a crop may be drawing to an end. The wheat was nothing if not an adventure. It is said that wheat had not been grown on the Cape for a hundred years. Nothing daunted, we decided to try. Getting the seed was the first obstacle, costing Bob Angevine endless phone calls, letters and arguments, and thoroughly trying his equable disposition. We did eventually acquire the seed and it was planted in late May. During succeeding weeks the wheat grew well, although the weeds offered some competition, and held its own until a flood, due to heavy rains, just as it was heading stalled it and there it sat, water logged, so that in late July, we had a fine field of a little waving wheat, somewhat dominated by the waving weeds. We chose to be pleased and consider it not a bad effort for the first time. But then, having grown it, we were faced with a problem we had not until then considered. What were we to do with it? Obviously it had to be harvested. We certainly couldn't waste it. We settled after much pondering on the plan of waiting for Saturday when there would be lots of people and - - - picking it.

The first hour was great fun, sitting or standing in the field, gathering tottering armloads and staggering to the edge with the enormous sheaves. There was considerable theorizing as to whether it was more efficient to pick one or several stalks at a time, avoiding taking weeds or to pluck great handfuls and then separate wheat and weed. Rival schools sprang up, each determinedly advocating its own method. By the second hour, one was beginning to wonder why the picked area had grown so little in relation to the vast amount that surrounded it. By the third, conversations began to lag and

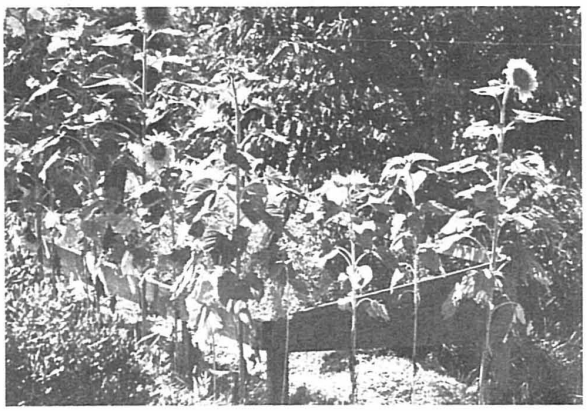


Photo by Alan L. Pearlman

the crowd had thinned perceptibly as we began to remember other equally urgent jobs. By the end of the day, we had picked a ragged little pocket handkerchief in the great expanse and were definitely discouraged.

The next day, being Sunday, we devoted to other things and by Monday morning Bob had somehow unearthed an ancient cutter that moved through the field chopping weeds and wheat indisciminately, but doing so quickly and easily. Once cut, the field was raked, and then the task of separating the wheat and weeds was finally accomplished by putting everything through a shredder/grinder which had had its bottom plates replaced by bars.

Having come so far there yet remained the winnowing of the wheat from the chaff. Earle, who rarely fails to rise to a challenge, pondered various means. One method involved a vacuum cleaner connected to a large tube. The vacuum forced air upward through the tube where Earle at the other end was dropping in the wheat. The chaff was at once blown off while the wheat hovered in the upsurge of air until the vacuum was turned off and it could be collected. It was not an unpleasant job and it was certainly an interesting-looking apparatus, but as the wheat could be processed only a cup at a time, Earle rejected the method as too slow and technology and ingenuity notwithstanding, settled on traditional winnowing, tossing the wheat in the air and relying on wind power for the rest.

If the project did cost a great deal of time, it was valuable in that it gave us the confidence that wheat could be grown, if necessary, in what would generally be considered an inhospitable area and that the problems of harvesting and processing could be solved without recourse to either expensive equipment or herculean physical labour. Bob, who is in charge of the field crops, is going to try wheat again as he feels our problems may be eliminated by planting a couple of weeks earlier, giving the wheat a better jump on the weeds.

Photo by Alan L. Pearlman

Squash Flowers

Each forest
is proud of its trees but places its trust
in underbrush. The sleek, striped animals
run for cover.

Here are the tall men
and here the heavy women. The bees assault
the men, hum-humming
then back awkwardly out on sweet knees.
The women wait
twisting their kerchiefs tight.
Their short necks stiffen.

But the gold cups of the men incline
their gold thrones teeter
generous to the wind, the bees, the final requests.
By dawn they've even given
their weight in gold to the ground.

The covered animals listen.
Down among trunks
the kerchiefs bright as brass locks
slide open and in them drop
the favors of the dead.

Each cradle in the forest
rocks with gold.
Each hidden animal
receives a coin
from its mother's practical hand.

– Meredith Fuller-Luyten

October Squash

1.
The vines that shot off
like startled snakes
that curved down
like snakes from trees
that tightened
like hunting snakes
that grew as green
as garden snakes
and made fruit
pale as the snake's belly
lie as stiff and thin
as snakes on a spring day.

2.
The Epeira climbs
the wasting plants.
Her web breathes.
Her flies are tucked away
as softly as her eggs.
Her black body
her jointed legs
her gold-leafed back
center themselves in cold air.

– Meredith Fuller-Luyten

PRESERVATION OF FOOD; PRESERVATION OF SELF

Another major aspect of the summer's work was the preserving of food, an activity that one appreciates all the more with rising food prices and hard frozen ground. We did try either to freeze or to can as much of the summer's vegetables as we possibly could. There was some spoilage when we lacked either the time or the courage to tackle the vegetables soon enough, but between feeding the rabbits and composting anything that had gotten past its prime, very little was actually wasted. Mary Lou Macilvane, who spent the summer with us, was vital throughout this process. Not only was she ready to tackle any pickling, canning or jam-making that had to be done, but she was cheerful about it.

The food-processing, and predictably the housekeeping, are the areas where the difficulties of sex roles are most readily apparent, and equally predictably, it is the women who are least pleased with their lot. More than one visitor to the farm has commented that our roles with some exceptions are, in the main, still structured along traditional lines. The reasons for this are obvious. If, as a group, we have agreed on certain goals and projects we feel to be important, then it seems efficient for all of us to do what we do best. For example, I don't know how to make a windmill. It would take me some time to learn, as mechanics is not a field in which I shine. Granted, I could probably eventually master it, but while I am off apprenticing to Earle or Marc, my share of the garden work would not be done, vegetables would be stock-piling in the kitchen and correspondence lying unanswered in my box. Although all of us, as women, do not wish to emerge from our domestic cocoons and stretch our wings only to turn to housekeeping and cooking for a larger crowd than before, there are not many jobs that we could hold "out there" in the system as it exists in which we would not feel in some way compromised. Our idealistic and political selves are happy with the group. Obviously we are in a fine double bind.

There is no simple answer. The solution so far in our case and in many others I think must be to work with men whose consciousness has been sufficiently raised to understand how thoroughly sexist has been all of our backgrounds. If we are to work in groups with both sexes, I do see a transition, perhaps on the slow side for our taste, coming about in which the jobs, particularly those that we as women find most psychically oppressive, are being shared on an equal basis. It is certainly starting to happen with us. Several of the men cook. A gratifying number crowd the kitchen after Saturday lunch to do the dishes; yet I still have a memory of a hot afternoon, a sticky kitchen, stacks of vegetables threatening to molder and an all-female and very resentful crew. Dave Engstrom said once that transitions are always hard, and so they are..... as long as they keep happening, I guess.

The Media

Well, no man is an island, of course, and we have always wanted to share our ideas as broadly as possible. At the same time we are well aware that one of the fastest ways to be co-opted in this culture is to become, in any way, a darling of the media. So our attitude, when approached, is always distinctly schizophrenic. Bill McLarney can be relied upon to growl at almost any overtures. With the rest of us, our response tends to vary depending on how closely the views of the person or publication interested in us tally with our own.

Early press coverage posed no problem. Only like-minded magazines contacted us and we were glad to cooperate with ORGANIC GARDENING AND FARMING, MOTHER EARTH and LIFESTYLE and with a number of small underground or independent publications which shared many of our ideas and ways of viewing the world. The same applied to Stephanie Mills when she came to interview us for CLEAR CREEK. We wrote an article for THE CAPE COD NATURALIST because we felt it might explain our ideas to people in our own region and indicate a common bond in the area we both loved.

When Peter Jones from the B. B. C. arrived a year ago, we were somewhat surprised to be approached by the major leagues, but felt so supportive of his ideas that we agreed to work with him. The resulting film, *Science is Dead, Long Live Science,* caused a great stir in England we were told. Although a visiting English friend assured us that 'the movement liked it', most of the scientific establishment emphatically did not and while we were aware of the hornets' nest it had stirred up, it happened so far away, none of us have seen the film and so it has had little reality for us.

The past spring and summer the scenario (you see how even the vocabulary infiltrates) shifted when we faced the Great NEW YORK TIMES Tilapia Challenge and The National Film Board of Canada.

* * * * *

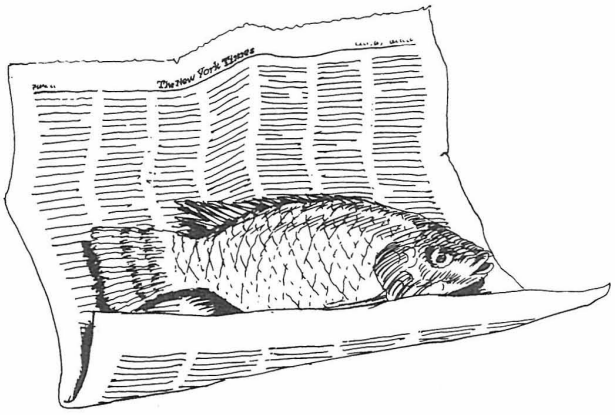
John Hess, who is the Food Editor of THE NEW YORK TIMES, had advised us of his arrival one August Saturday. We knew from his writing that he was sympathetic with ideas of ecology and soft technology. What we didn't know and were delighted to discover was the depth and range of the knowledge that he and Karen, his wife, had of food. Not only were they familiar with the most cultivated French cooking, both Hesses had a profound interest in poor peoples' food. Mrs. Hess, who knew more about food than anyone I have ever known, knew innumerable ways of using every scrap and bone of meat or fish, how to make palatable tough, over-age vegetables and an amazing variety of ways of coping with beans. She said memorably "we have forgotten how to be poor." The Hesses are working together on a collection of recipes, traditional to a variety of peoples, that make use of inexpensive, nutritious foods. This type of contribution would rank, I think, with a book like *Diet for a Small Planet* as enormously useful to all those who for ecological, economic or political reasons have rejected the refined, prepared and packaged foods that are regrettably still the norm.

The Hesses talked to a variety of people, toured the farm, worked with us in the garden and in the kitchen and altogether were part of a very pleasant farm Saturday. Then, just before he rose to go, John Hess flung down his gauntlet. "Granted, growing inexpensive, high-quality protein is useful, even necessary. But how do your tilapia taste?" We were taken aback. People don't very often ask that. Bill McLarney, who has eaten tilapia frequently, wasn't there for the moment, so after a slight hesitation I leapt into the pause and declared with forced heartiness that they were delicious, definitely delicious. I remembered that various people had had them in Costa Rica and pronounced them excellent, but I had sampled them rather uncritically which had left me with an unclear memory. And growing conditions on Cape Cod are not, after all, identical to those in Costa Rica.

John Hess went on to say that he would very much like to try one for himself, and if Karen would consent to do the cooking, could they come back and taste the tilapia? We had planned a feast for the following week, and although we should have preferred to check out the tilapia in a less exposed way, we rose to the challenge. The next Tuesday, nets and fishing lines in hand, Bill, Earle and most of the kids went fishing for tilapia. To our enormous delight, a largely neglected pond netted fourteen fish, some of which had grown to over half a pound in ten weeks. So far so good. The taste was still an unknown, but we certainly could grow 'em. Mrs. Hess instructed Bill, who with an enthusiastic, if unskilled staff of small boys, was in charge of the cleaning, that the heads were to be left on. Then, the cleaning done, Mrs. Hess took over. We had decided, after much debate, not to use any of the more exotic recipes that people had sent us, but to cook them simply to evaluate, critically, the taste of the tilapia *per se.* Mrs. Hess chose to fry some, dipping them first in flour, seasoning them only with salt and pepper. The others were baked in tin foil in the oven, again seasoned with salt and pepper, with parsley and lemon added just before serving. Mrs. Hess worked with breathtaking speed, chopping, oiling, frying, while I hovered about ostensibly being helpful.

Then, after a suitably suspenseful lull came the triumphal bearing of the platters of tilapia to the picnic table. Anxious moments..... cautious, tasting sounds, and then in tones ranging from surprise to relief and en-

thusiasm, "It's good, it really *is* good!" And McLarney was heard to mutter, "I told you so."



As for the Hesses, both of them said that the tilapia had far exceeded their expectations and were unquestionably superior to any hatchery-raised fish they had tried. But the best moment of all came one morning a week or so later when we opened THE NEW YORK TIMES and came upon the article describing the affair under a headline that read "Farm-Raised Fish: A Triumph for the Sensualist and the Ecologist."

* * * * *

Our other major media experience was with The National Film Board of Canada. Perhaps because the Canadian Government has lavished less of its resources in the recent past in making the world safe for democracy, while not, of course, denying some of its citizens the basic freedom to make a handsome profit in arms manufacture, it has had the money to provide for a number of useful organizations, among them, The National Film Board. The Film Board has released many beautiful, informative and useful films. When we were contacted by them, we were doubly susceptible, in the first place because of our respect for the Film Board's work, and secondly, because the producer of the proposed film was to be John Todd's sister, Dorothy Todd Hénaut. Her plan was to make a film that would be interesting to a number of specific audiences "ranging from small farmers to middeclass back-to-the-land freaks, to government people at federal, provincial and municipal levels, to schools both in terms of the old agricultural departments and the new departments of the environment, and to frustrated housewives and bankers looking for ways of reducing their alienation and getting some kind of concrete grip on their lives."

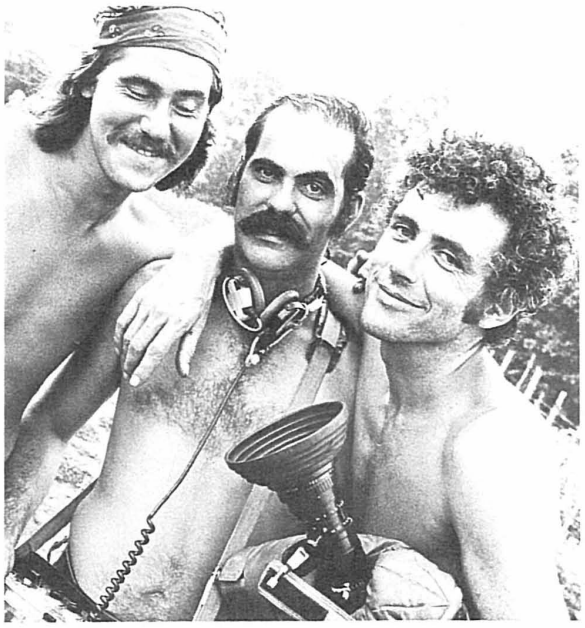


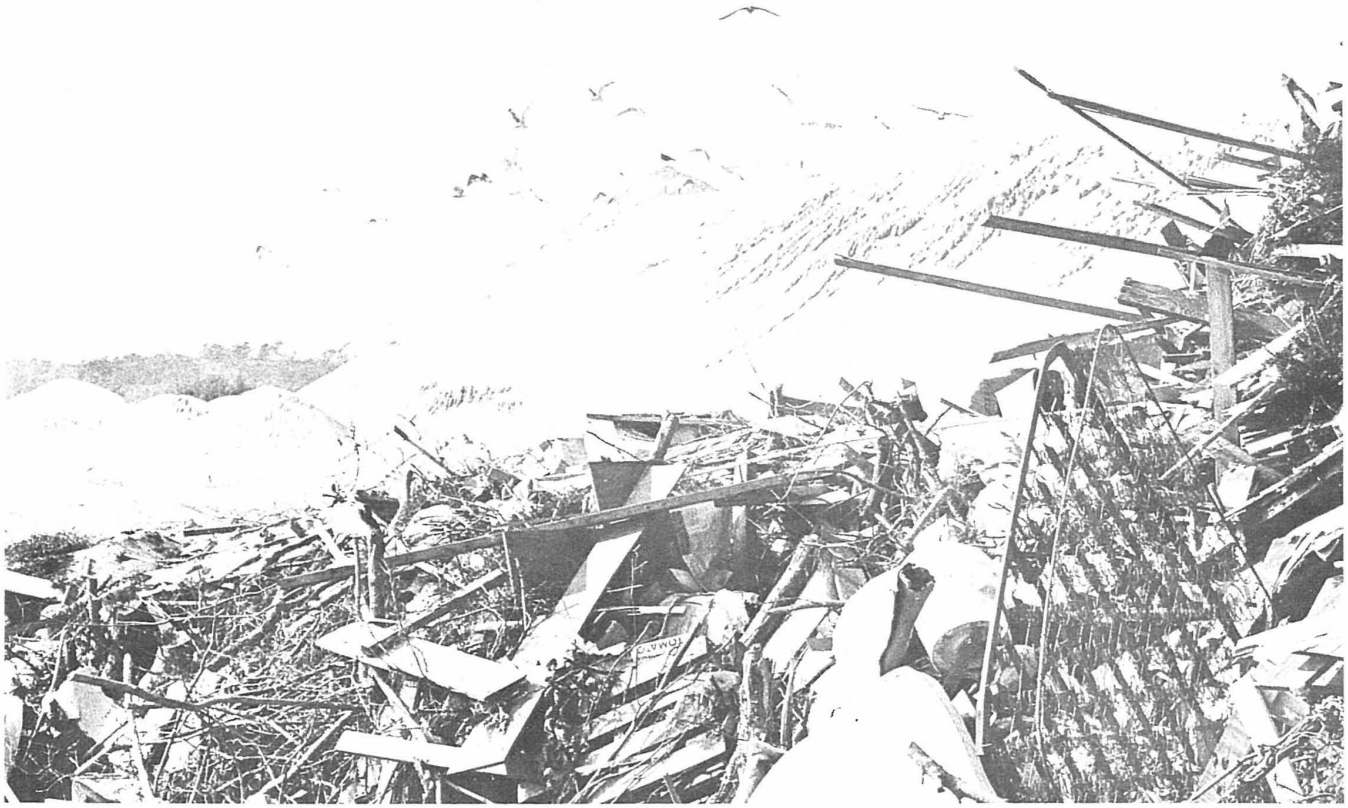
Photo by John Cressey

National Film Board films are distributed to public libraries across Canada, where they are available to any citizen or group. Outside Canada, the Film Board has offices in many foreign countries. The ready availability of the film and its complete dissociation from anything that smacked of commercialism convinced us that beyond our own publishing program, this might be another vehicle for the dissemination of our ideas, particularly as the main film, which had to be somewhat general and descriptive, was to be backed up by satellites on the windmills or fish ponds, giving considerable technical detail.

Dorothy arrived in early May to do a pilot video film. The video was a marvellous toy for us. We would work for the morning, and then at lunch play the morning back. It does extraordinary things to one's concept of time. It is also useful as a communications tool, forcing one to define and clarify ideas to oneself and others.

Dorothy left with her completed tape, acquired permission in Ottawa to do the film, and returned in late August with a crew of inspired clowns who were, at the same time, first-rate film-makers. Then, for the benefit of the cameras, as they say, we explained ourselves endlessly and tried to look spontaneous as we repeated a conversation for the third time or carried the same load of garbage to the compost heap, pretending that we hadn't just done it.

There are now coiled in boxes on the floor of a film editor's office in Montreal ten hours of film on The New Alchemy Farm. Most of it will eventually be cut and a film lasting from half an hour to an hour will emerge. We are discussing the possibilities of wider American distribution with Film Board people, feeling it may be a timely tool - Dorothy likes to think of it as a sort of celluloid earth gypsy – hopefully providing something of a catalyst in people's lives, by suggesting the possibility of alternatives in technology, food, and energy production open to them.



The Dump: *as Resource and Allegory*

High on our list as a supplier of resources is the Falmouth Dump. The announcement of a dump run is usually greeted with clamouring cheers from the children and general scrambling for position on the truck. Earle even has for such an occasion a dump hat in the style of latter day Sergeant Pepper. The dump, luckily for us, is "conveniently located" and a short drive takes one to an area which has been cleared of its scrub oak and pine to expose gravelly mounds and hills reminiscent of parts of Southern California. There one can scavenge among objects declared obsolete by society and emerge with clothes and toys in fine condition. Earle found one of Susannah's favorite dolls and her most princessly dress there. In a more prosaic line it has provided a major source of lumber, electrical cable, motors and other parts for machinery. We have found fish barrels, which make excellent containers or planters, and an ice cream freezer, vacuum cleaners, carpeting and innumerable containers of all kinds, not to mention discarded leaves that we brought back for composting.

Photos by John Cressey

Most of us probably have our own horror stories of the waste and extravagance that are our civilization's legacy to its children. Earle was a part of one this fall. In need of lumber for some new rabbit hutches, Earle drove to the dump to discover an unexpected windfall of newly abandoned wood. With lumber prices soaring and many other projects planned, he decided to load the truck as full as possible and then come back again for the rest of it. At the exit he was stopped. "NO", the man said, "it's illegal to take anything from the dump. I can't let you do it." Earle, having defied the law in this way countless times before, explained and argued. The man was quite nice about it, but firm, in a resigned way. He was, he explained, acting on a Higher Authority than his own. Even in his anger, Earle knew that this man could not be held accountable for such absurdity, that new trees would be cut and that people would be forced to pay higher prices for lumber that might well be no better than that that was being scrapped. Bound by a law that defies all common sense, yet somehow provides a neat metaphor of our present economic system, he put the truck in reverse, turned it around and replaced the lumber to see it buried under several tons of gravel.

What, I wonder, will future archeologists speculate happened.

The New Truck

or *howwekeptontrucking*

We have been, in the main, uncannily lucky, not only in having people help us, but frequently in having them do so in the most appropriate way at the most timely moment.

Our old truck had been doing a valiant job, but it was at the expense of an inordinate amount of time and attention from Bob, Earle and Marcus, all of whom were feeling that their energy could be more creatively used elsewhere. As it became increasingly obvious that the old truck was due for imminent retirement, Nancy Willis, who works with us in the summer, ventured that she had a friend who might be willing to donate a truck. The only trouble was that the would-be donor and his truck were in Colorado. The distance between Colorado and Cape Cod might normally loom as prohibitive, but again providence was with us. Bob Angevine was about to fly to California to visit New Alchemy-West and was perfectly willing, on his return, to fly as far as Colorado, meet Frank Bacon, Nancy's friend, pick up the truck and drive it back to the Cape. He did. Now, thanks to Frank and Nancy, to whom we are extremely grateful, not to mention Bob, we have the truck that is indispensible to us for compost and dump runs, construction work and the innumerable errands that we do.

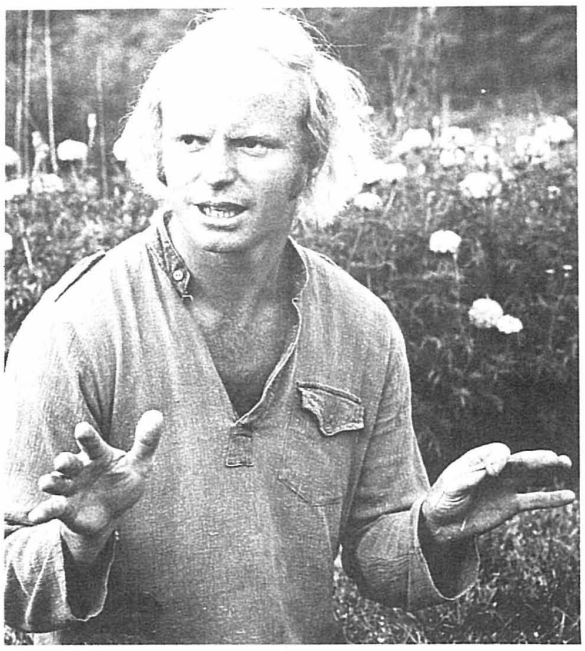


Photo by John Cressey

Foundation Support

It is extremely difficult for a small research and education institute not affiliated with universities or government to survive economically. We live on a fiscal razor's edge. The Stern Family Fund and the Point Foundation have provided us with the support to pay salaries, maintain the center and carry out the research. In short, our survival has depended upon their assistance and we thank them for it.

A Further Note to Associates

Perhaps many Associates don't realize just how instrumental are their contributions to the running of the institute. I have been reading recently of the Findhorn Community in Northern Scotland and how their needs (which are carefully distinguished from desires) are almost always provided for in some unforeseen way.

For us, it is frequently our Associates who are fairy godmothers, sending in a flurry of memberships just as a project seems to be in danger of faltering. We are as grateful for their good faith and optimism as for their generosity.

We mentioned in Journal 1 that we planned to publish a list of the names and addresses of our Associates. We have since reconsidered because we are afraid that, with our wider circulation, the mailing list could be picked up by advertisers, and our Associates would be subjected to the same annoying paper pollution via the mail by which we are plagued.

We would offer instead to Associates interested in the possibility of locating fellow travelers in their area that you write to us and we shall gladly check our files and let you know of others within a useful communicating distance.

Mail - and the Journal

As it has become fashionable, if not downright satisfying, to blame one's problems on the energy crisis, perhaps we could say that, due to the energy crisis, we have had a quantum jump in our mail: Incoming, that is. The reason we can choose to trace this leap back to the energy crisis is that it is probably the reason that a variety of magazines, most of which we've never seen, have dropped our name, usually in connection with alternative energy programs. As a result, we are subject to a flood of letters referring to articles we hadn't known existed. Marc Sherman responded on one such occasion, on the eve of his departure for India, with his windmill bibliography which guides people to most of the available sources on wind power. Using a printed bibliography rather than writing the hundreds of letters that would have been required otherwise did save considerable time, but still took a fair effort. Even this did little better than make a dint in the mail. So, in order to make our information available as widely as possible, we have decided to make the Journal our major organ of communication. Though less personal than answering letters, we shall try to be as sensitive as possible to the bulk of questions directed at us and to plan issues around them. We hope, in this way, to be more useful in that we will make more information available to more people and to do so in greater detail than would be possible through individual letters.

— Nancy Todd

Photo by John Cressey

Last *But Not Least*

Please note the change of address for New Alchemy West:

New Alchemy Institute West
Box 376
Pescadero, California 94060

Photo by Alan L. Pearlman

Book Reviews

Rudolf P. Hommel, *China at Work,* MIT Press, 1969 — $3.95 (first edition, 1937).

Hans E. Wulff, *The Traditional Crafts of Persia,* MIT Press, 1969 — $7.95.

Peter van Dresser, *A Landscape for Humans,* 1972, Biotechnic Press, P. O. Box 26081, Albuquerque, New Mexico 87125 - $3.00)

These are valuable books for people wanting to get back to the land and live simply and self-sufficiently. Modern Americans having been brought up, as they have, with everything treated as commodities and prepackaged for them, lack knowledge and skills for producing basic necessities of shelter, clothing and food. These two books help fill this awesome gap with necessary information describing techniques that have been used by the Chinese and the Persians for thousands of years.

Rudolf Hommel spent eight years in China in the 1920's doing research for *China at Work*; the result is a careful recording, illustrated with hundreds of fine photographs, of the hand tools and simple machinery used for centuries by Chinese peasants in their daily tasks. The text explains the methods for using these tools and gives clear directions for such techniques and crafts as pise de terre (rammed earth) walls; house heating with limited fuel supply; cart, sled, and boat building; hand spinning, weaving, potting, and metalwork; carpentry, brick and tile making and much more.

Of special interest is the chapter on farming. For people who want to produce their own rice and other grains on a small scale by hand, this chapter provides basic information on plowing, planting, irrigation techniques, fertilization, harrowing, tilling, threshing, winnowing, hulling and grinding. Also there are detailed descriptions and pictures of tools and processes for making soybean curd (to-fu); vegetable oil pressing; brewing and distilling, salt mining, fishing and more.

China at Work is part of a growing literature on the traditional ingenuity of the Chinese. Such books as F. H. King, *Farmers of Forty Centuries,* J. Needham, *Science and Civilization in China,* and Li Chi'iao Ping, *The Chemical Arts of Old China* have amply demonstrated the ingenuity of the Chinese in producing, for thousands of years, the necessities of a good life from the simplest of tools and materials.

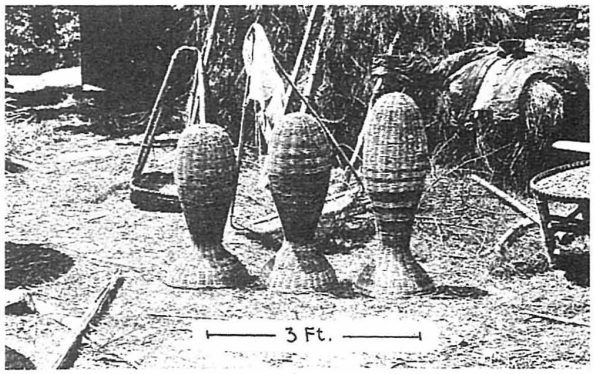
Hans Wulff began research for *The Traditional Crafts of Persia* in 1937 when as principal of The Technical College at Shiraz he was asked by the then Shah of Iran to incorporate "the great tradition of Persian craftsmanship" into the curriculum of the College. The result of his work is a comprehensive source book on traditional crafts which have survived in Persia since ancient times. The book is divided into sections on metalworking, woodworking, building and ceramics, textile and leather, agriculture and food treatment. It is amply illustrated with photographs and diagrams. The text never loses sight of the historical antecedents of present-day Persian crafts. In one volume Wulff combines the excellent qualities of both Hommel's and Needham's books on China. For instance, after discussing contemporary blacksmithing, he lists the ancient classifications of steel made by the philosopher-scientist Al-Kindi in the 12th Century. He introduces the woodworking section by listing about 200 species of trees with their Persian, Latin and English names and most important properties.

Like *China at Work,* this book is extremely useful for us today: there are pictures, diagrams and descriptions, for example of simple spinning wheels and recipes for natural dyes, a portable wood-turning lathe used by wandering gypsy craftsmen (to turn out, among other things, the parts of spinning wheels); Persian house domes and roof-vaulting systems; metal-working techniques, glassmaking, and many more.

The hand working farm methods of the Persians, strikingly similar to those of the Chinese, are clearly described. Especially important for people living in dry climates such as the American Southwest is the information on dry land farming and ancient Persian methods for conserving and distributing water.

China at Work and *The Traditional Crafts of Persia* are two inspiring books, invaluable sources of information, that one may turn to again and again in the effort to learn survival without "benefit" of modern technology. We are fortunate to have them available.

The current "energy crisis" with resulting shortages of basic commodities is making clearer to growing



Eel Cages or Baskets to Keep Alive Captured Eels.
— from *China at Work*

numbers of people the deep-rooted weaknesses of our highly-centralized, capital intensive, urban-industrial economic system. In the United States and other Western nations, this system is proving itself quite incapable of providing any assurance of the necessities of a good life, but seems rather to be leading us to economic and ecological break-down. The major existing alternative to the capitalistic system, state-controlled socialism, is experiencing, with industrialization, similar socio-ecological problems.

However, early in this century in India the failings of both economic systems were clearly foreseen, and a truly viable alternative proposed in the "social ecology" of Radhakamal Mukerjee (*The Foundation of Indian Economics,* 1916, and *Regional Sociology,* 1926) and in the "villagism" of Bharatan Kumarappa (*Capitalism, Socialism, or Villagism?,* 1946), among others. This alternative was put into practice to some extent by the Gandhi movement. In the West little has been done, the main exception in America being the Decentralist movement of the 1930's, which has been pretty well forgotten, in spite of the potential ecological crisis of the present day. Peter van Dresser took an active part in the Decentralist movement. In *A Landscape for Humans* (1972) he presents clear proposals for small-scale ecologically sound economic development founded upon a harmonious balance of local resource potential and human needs within the specific region.

Like Mukerjee, van Dresser realizes that essential to an economic development that is human-based yet ecological is the concept of regional self-sufficiency. Only when economics are based solely upon the natural resources and human needs of a particular region can a healthy, self-sufficient, and ecologically sound way of life develop. Our current system treats a region, its natural resources and inhabitants, as a one-way commodity, to be used until no longer profitable. The present ecology and energy crises result from the practice of mindlessly consuming the resources of region after region. Should a labor-intensive and resource-conserving economic system be allowed to develop, it would still be possible to live a fulfilling and harmonious life in this day of crises and shortages. Peter van Dresser shows the way in a region that he knows well.

A Landscape for Humans is an in-depth study of the northern New Mexico uplands. Van Dresser begins with a detailed description of the region: its geography; the history of Spanish, Indian and Anglo settlement; traditional practices; present means of livelihood; population figures; and natural resources. He then discusses the current trend toward resource depletion and rural depopulation. He shows clearly that this is in no way "inevitable", as its proponents maintain, but is rather based upon the dictates of our economic system. By the criteria of this system the northern New Mexico uplands are "uneconomic" because their resources are not conducive to profitable or large-scale exploitation. The only value of the region, from this point of view, is the potential human labor which can best be utilized as an urban labor pool, resulting in rural depopulation and the growth of increasingly parasitic urban groups. This need not happen. Van Dresser points to the history of the region. The Spanish settlers, mostly small farmers, were for hundreds of years virtually self-sufficient, producing almost all necessities of life locally. With careful resource management this region could again provide the basic needs of its inhabitants and, in fact, support a larger population.

Van Dresser discusses four areas or "potentials" for productive socio-ecological development: I) "A full complement of region-supplying primary industries" developed upon the basis of traditional skills and local resource availability. This would foster a truly regionally-centered industrial development providing employment and basic commodities for local use without destroying the environment; II) "Land- and skill-intensive agriculture and husbandry." The land in northern New Mexico is "uneconomic" in agri-business terms due to small holdings and limited water resources, but it is more than ample for providing food - vegetables, fruit, meat and dairy products - for the whole region; III) "Deep functional involvement of the community in soil and biotic conservation." This is the key to long-term regional self-sufficiency. The local people themselves must learn to conserve such natural resources as water, timber and soil, which are the true sources of a healthy productive life for generations to come; IV) "Enriched village-community economic, social and cultural life." The strengthening of local organizations is necessary for community control of resources and for guidance in planning and development within the region. Further, such organizations can provide, as they did traditionally, local social and cultural centers to counterbalance the lure of the "big city.".

These four "potentials" for socio-ecological development, and the possibilities and means of their implementation, are explored in great depth by van Dresser. The result is a study of immense value to northern New Mexico, and, with modification, provides guidelines for sensible small-scale development in any region. The problems of northern New Mexico are world-wide and the time has come for people to stay home and develop a new regionally centered and self-sufficient economy and way of life. We can no longer depend upon distant, potentially unstable, sources for our basic needs as most Americans do at present, leaving themselves extremely vulnerable to the effects of scarcity. *A Landscape for Humans* indicates a path from vulnerability to self-sufficiency, from weakness to strength. It is to be hoped that concerned people everywhere will read this book and put what they learn from it into action, in the task of developing strong and independent communities throughout the country.

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