



DEAR CALLERS  
 NEW ALCHEMY IS  
 CLOSED NOVEMBER THROUGH  
 MAY 1.  
 MANY OF OUR PEOPLE ARE  
 WORKING IN OTHER LANDS  
 + MOST OF THE SYSTEMS  
 HERE ARE NOT OPERATIONAL  
 IN WINTER - SOME BEING  
 REDESIGNED + REBUILT.  
 LITERATURE, INCLUDING  
 JOURNALS ARE AVAILABLE  
 IF SOMEONE IS IN THE  
 OFFICE.  
 YOU ARE WELCOME  
 TO WALK AROUND...  
 See you in a spring  
 or summer SATURDAY



Several years ago when New Alchemy was just beginning or, at least, starting to assume a more substantial form than a small filing cabinet containing a few proposals and some correspondence, there was little in our activities that was predictable from one day to the next. What has emerged gradually, with the passing of time, is a familiar, even rather comfortable, rhythm flowing from day to day and from season to season. We have been occupied with gardens and fish and windmills for long enough to have a feeling for the scope and demands of the work so that, while the unexpected still frequently occurs, the pattern of work and meetings, visitors and Saturdays is within the realm of the known.

It is the same with the seasons. For those of us who stay at home there is the intense bright summer tapering toward the slower, rather mild, gray-brown Cape winter. For the rest of us, the New Alchemy summer is juxtaposed against other countries and cultures and our work there, related but different to that on the Cape.

But, with lengthening days and thawing ground, planting and spring rain, everyone returns and we find ourselves at the edge of another summer.

—NJT

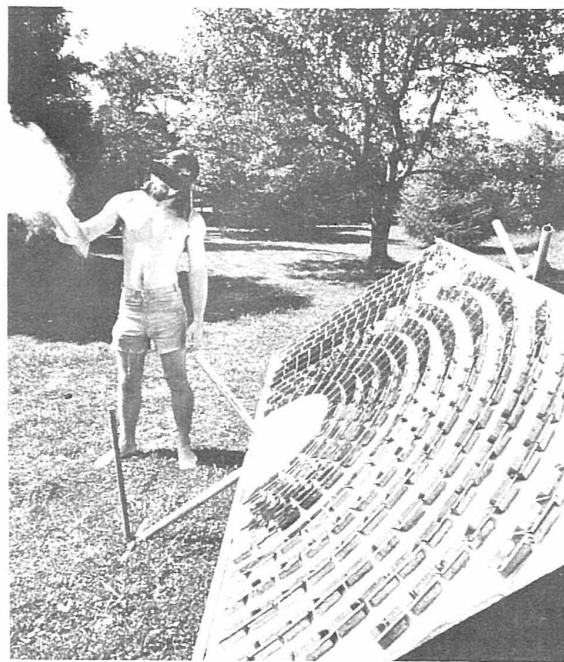
# Looking Back



In looking back over a period which is lengthening into years, enough time has passed and enough seasons changed to find oneself a bit vague as to what it was that distinguished one particular spring or summer from those that came before or after. Yet, there are always differences. The children have grown taller, the garden plots have been rotated, the sunflowers grew in a long soldierly line one year, another in a riotous field, and the apple tree did or did not bear fruit, although the mulberry always does.

The landscape, too, has changed. During our first summer, only the domes covering the fish ponds dotted the ridge that rims the gardens. By the next year, three windmills of varying sizes and shapes had taken up their positions. By the following summer, the mini-ark had been added, consisting of three shingled wedge-shaped structures, solar heater and the most elegant windmill yet, with red, wind-like sails that follow the wing. There was also a new fish pond, uncovered this time, for experimenting with white amur and Israeli carp, species of fish adapted to colder climates than the tropical tilapia can withstand. To pump water for this pond, the old oil-drum Savonius rotor was replaced by an updated, more streamlined version of itself. On the lawn behind the house, Earle's solar furnace provided another innovation. After several days of cutting tiny mirrors and mounting them on the wooden surface of the reflector, he had created, in addition to a

furnace, a wonderfully psychedelic toy. Peering into it when it lay flat beneath the apple tree gave one a dizzying feeling of hanging suspended in the air, surrounded by leaves and fragmented bits of sky.



*Photos by Hilde Aterna Maingay*



*Wizened magic-man  
Catches Sadness in gnarled hands,  
Crumbles it to a fine frozen powder  
And, tossing it into a dark sky,  
Makes stars.*

— Don Esty  
*Died August 23, 1975.*

There were other changes beyond the physical ones. Far more visitors have been coming to the farm over the past year than ever before and there have been more different kinds of people. In the main, in previous years, most of our visitors could have been loosely described as counter-culture, usually youngish, longish hair, faded jeans, etc. Recently it has become impossible to categorize, for, besides the more predictable types there are families; some with small children, some with teenagers, and some with grandparents. Gardening clubs of older people stop by. Classes of school kids, sometimes entire small schools, come. And there are homesteaders and architecture and every other kind of student, would-be dropouts from business or academe, tinkers who just like windmills, and fellow travellers in search of a less mechanized approach to life than society at present usually affords. On several Saturdays often seventy or more people have gathered. Certainly in numerical terms that would seem scarcely worth exclaiming over, but within our frame of reference of a few friends and friends of friends getting together to work and to have lunch it seemed like a lot. It certainly meant that the work dynamic could not remain if we were to give people the information and time to which we considered they were entitled. Previously it had seemed adequate to answer questions and explain our ideas in the gardens or at lunch. But there simply weren't enough of us to make this workable any longer. And so we adopted the tactic of 'the tour.' It started rather informally and spontaneously by a group gathering around one or another of us to hear some explanation, but it quickly expanded and became mobile until it was quite literally a tour, with one or several of us describing the background and details of the biological systems and the gardens, and visitors including kids tramping around gamely and asking questions. Now 'the tour' has become an institution, as invariable a part of Saturday as the work that precedes it or the feast that follows.

The gardens are different each year, of course. I doubt that a garden is ever exactly the same twice. Hilde discusses this in much more detail in her article. Not only have we experienced changes in the numbers and varieties of people who visit the garden. The same applies to the insects. The cabbage butterfly, such a persistent resident in the previous years, chose largely to by-pass us last summer. Not so the squash borer who had not before been a 'regular.' As a result, we had the novel and sad experience of too few zucchini. The scourge of the garden, however, what Zorba called the 'full catastrophe', was the Mexican bean beetle. We spent days and days hand-picking the creatures off the bean plants and yet they came, like the barbarian invasions, in wave after wave. They decimated the

lima beans, made pathetic, derelict stumps of the kidney beans, and, although we salvaged a few green beans, they were a mere handful in relation to the number of plants. To contemplate the cost of those beans in terms of work-hours would be unbearable. This year we are experimenting with a biological strategy for control.

This past summer saw a considerable stride forward with regard to composting. Ty Cashman, who was chief of this department, will describe his methods in more detail in his own article. This was the first year that we had someone specifically assigned to overseeing the compost pile, seeing to it that it was properly fed and brewing at all times, and the results have become markedly visible. Several of us, when giving the tour of the gardens, have adopted the tactic of gesturing toward a pile of dirt, consisting largely of sand that has been dug up for the Ark, and pointing out that this was what the soil of the entire garden had been like prior to composting. Although the technique is faintly reminiscent of television commercials, one can then draw attention to the earth in the gardens, which, if not rich black loam, has become fine, dark brown soil. People, if not already converts, are generally favourably impressed with the merits of composting.

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Apart from the usual run of activities that take place on the farm, there are a number of other, usually individual, preoccupations. They may be as various and as esoteric as fly-tying and ballet, batik, compulsive all-night fishing (see the Trash Fish Cook Book) and opera. Each of them affects the common life of all of us to a greater or lesser degree. The fish catch is the main protein base for most of us for the summer. Marsha's voice floating across the grass from the house or gardens as she practises adds immensely to the enjoyment of a day. The same would have to be said of the most recent activity introduced to us by Susan Ervin, the vegetable dyeing and weaving of yarn. Susan arrived in early May and once she had settled in and the summer had begun, she could often be seen in the fields, trailed by one or more of the children, gathering plants and wild flowers for her dyes. Then there would be great steaming pots on the fire near the apple tree as Susan stirred her brew and drew dripping strands of coloured yarn from the kettle. She was working one day with a friend as a storm threatened. As it drew closer, they hovered over their pots, silhouetted with wind-whipped skirts and hair against a menacing sky, racing to finish before the rain could put out their fire. A stranger arriving at that time may well have put a more literal interpretation on our use of alchemy.

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One aspect to daily life at New Alchemy which, although heightened in summer is ongoing throughout most of the rest of the year, is the observation and recording of data and phenomena. Every system, biological or technical, is carefully monitored in order that we may have an accurate understanding of the efficacy of our experiments and so that we can obtain some idea as to the conditions under which various ideas may be transplanted to other environments. This puts us in a position to advise people as to the suitability of trying to raise tilapia, for example, in their area, and whether or not they would need an enclosed system to extend their growing season.

Bob Angevine keeps records of the weather, including the amount of rainfall we receive at the farm. Objective accounts of weather seem useful as it is a subject on which almost everyone is strongly opinionated and yet almost never agrees. I have heard an Englishman and a Californian issue absolutely contradictory statements about the state of the day within minutes of each other. Bob collects the data by which our readers and correspondents can judge whether what was a dry summer for us would also be considered as such for them. Actually, he tends to keep a quiet watch on all the systems, particularly with regard to their physical components, often making suggestions that dovetail simplicity of design with availability of materials. Earle watches the internal climates within our biological systems. He records and compares data from the mini-ark and the dome, checking air and water temperatures, humidity, and the turbidity of the water. The information is used for data on energy budgets and provides a basis for extrapolation of our work elsewhere. Being closely involved in the design and construction of the energy systems, he keeps an eye on the windmills, noting such things as pumping rates in relation to wind speed, and generally evaluating performance. He also has to have a realistic idea of the solar heater's capacity which involves measurements of input and output temperatures and flow. The recording and calculations, often painstaking, involved in Bill's experiments with fertile fish pond water and midge production are evident from reading his papers. His aquaculture work also involves a good deal of careful study. He has given a lot of thought to the feeding of fish, observing their preferences, the conversion ratio of various foods to growth, and the resulting yields. He is ingenious and

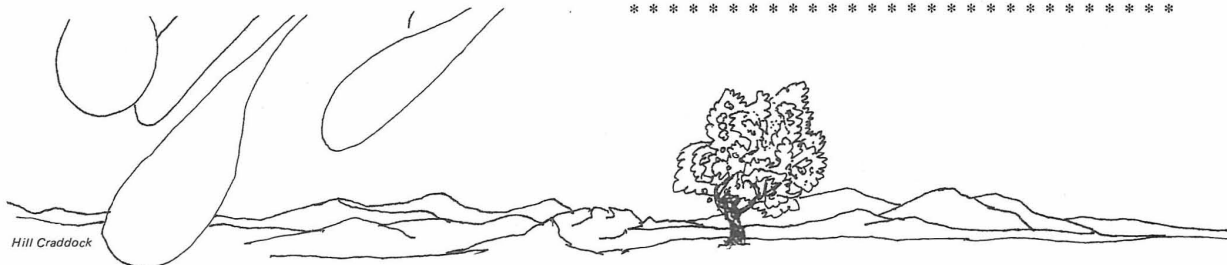
thorough in his quest for plants that, while not commonly considered part of a fishy diet, are acceptable and nutritious to the fish — hence our marigold nibbling tilapia — supplementing, we like to think, their vitamin A requirements. Marcus has long been Bill's deputy in the midge department and gathers productivity information on the midges in the larger systems, particularly with regard to various methods of fertilization and rate of water flow in the ponds.

Knowledge of the biochemistry of the aquaculture systems is vital. John makes regular tests of their chemistry including oxygen, nitrogen, carbon and phosphorus cycles, so that any imbalance in the systems may be detected and corrected. He watches algae production and studies the systems with regard to their ability to purify and regenerate the water in the fish culture ponds. This work enables us to incorporate both microscopic and flowering plants for water purification as well as for food for the fishes, both of which are essential in intensive aquaculture. The invertebrates being cultured are watched for productivity and food needs. He is also experimenting with the ability of the algae to absorb and retain the sun's heat, with the idea of their potentialities as living solar heaters.

As countless photographs will attest, Hilde spends considerable time gathering data on her cabbages. Arduous as it may seem every worm must be counted, its damage assessed and the health of the individual plant taken into account. Under her surveillance, too, is the state of the garden in general. She must know the chemistry of the soil, in the testing of which she gets some help from Bob, and evaluate companion planting arrangements, seasonal influences and changes, and the value of mulching and composting. With a grant from the Barnstable County Conservation Committee, Susan has launched a study of the feasibility of using *Gambusia* or mosquito fish in mosquito control and must record the findings of this work. There is, in addition, extramural, as it were, data being collected on our behalf. Ross McLain, one of our Associates, is working on a computer model of the dome as a solar trapping structure. Merrill Hall and Vince Dempsey are doing warm-ups for their new electricity-generating windmill by designing and testing smaller prototypes.

So, as data must be collected, pondered, and eventually applied, the prerequisite measuring, recording, testing and weighing are woven into our daily rounds.

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Hill Craddock



Photo by John Cressey

There remains one more change to be related, one which evolved almost imperceptibly. In *Journal Two*, under the heading 'Preservation of Food, Preservation of Self', I described some of the difficulties we were having in distributing the domestic work which seems unhappily inevitable to almost any kind of undertaking, more equitably between the sexes. I said at that time that resentment was high among the women, largely because of the tacit assumption that housekeeping and its attendant chores should be their responsibility. I think that this is often the key to much of the problem of shifting from traditional roles for both sexes. It is less the dreariness of the work in question than the acceptance, often unconscious, on the part of the male that, whatever mess ensues in the wake of his activities, it will sooner or later be dealt with by someone other than himself. And the odds are pretty high that that someone will be female.

It is really very nice to be able to say that this is not much of a problem for us any more. There were virtually no confrontations. What began to turn the tide was our (the women) realizing the necessity for articulating our frustration. The general male reaction was not outraged indignation, but the equivalent of McLarney's "I can dig it." And so they did, for now, although our housekeeping could not be called above reproach, it is done under the rotating leadership of a housekeeper of the week, and it is up to the individual as to

whether he chooses to toil alone, or in company, as long as the work is done. It hardly seems necessary to add that most of us prefer the latter.

The goal of balanced sex roles is, however, an elusive one, sometimes laden with unexpected and, for that matter, ill-fated pitfalls. The day is not won when the housework is divided. I mentioned earlier that we have adopted the practice of giving a tour on Saturdays as the best way of offering the maximum amount of information to our visitors. It somehow settled on its own time of right before lunch. This was probably because it seemed that people were ready for a break after working for the morning and that anyone planning on coming that day would have arrived by then. So a few of us would remain in the garden and start talking while the rest of us scurried up to the kitchen to start lunch. One day, as the lunch-preparing bustle was in full swing, one of us, I think it was Nancy Willis, looked around and said "Has anybody noticed-----?" We raised our eyes from our work — and there we were again — all women. By process of elimination the tour was being conducted by ----- not by us. The women's caucus gathered in the kitchen once again. That we, too, should give the tour was self-evident. In the course of the discussion, we discovered that there were some details of the biological systems and the windmill mechanics about which we felt a bit shaky. Fortunately we had among us a post-doctorate student in biology, Susan

Atlas, who was spending Saturdays with us. She would have no trouble with questions along that line. For the rest, we felt that we understood the basics and could manage one way or another. We emerged from the caucus having decided that we would monitor the tour the next week and conduct it ourselves the following one. We announced our intention to the men, who were entirely affable about it. The next Saturday we spent taking note of what was asked and making sure that we would omit none of the standard features.

And so our day came. As luck would have it, the same day brought an influx of visitors that was a galaxy of braininess, complete with a Nobel Prize and countless PhDs., most of them, ironically, biologists. It was not without qualms that we launched into a summary of our view of the world situation and the bearing of New Alchemy's work within the parameters of such a complex picture. Between us we answered most of the questions and managed to give our first tour without either disgracing ourselves or exasperating our guests. What we most need is the practice and the fine public manner that is hard to develop when addressing oneself to a stove or to a small child. Still, if a bit haltingly, another hurdle has been cleared.

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As it had been the previous year, harvesting the wheat was one of the high points of the summer. Although one could never become blasé about the satisfaction of gathering the vegetables one has grown, there is somehow a jubilant quality about the days when we harvest wheat that is hard to account for. It is almost always hot and dusty. The shredder-grinder which we adapt for cutting the heads of the wheat from the stalks makes a horrendous racket, subduing all but the most determined conversationalists. So it is very noisy and dirty and any of us

prone to allergies are driven to sniffing and coughing. Yet, for all that, there is an underlying joyous feeling that may be partly attributed to working in a ripe field and perhaps partly to the half unconscious knowledge that in harvesting and storing against the winter we are repeating a timeless act that links us to generations long before and, we hope, to those long after us.

## Financial Support

The continuing existence of New Alchemy over the past year has been made possible through the support of our Associates and through grants from a number of foundations. We now have over two thousand Associate Members scattered around the world and we are pleased and encouraged by their faith in us.

Among the foundations which have come to our aid with grants ranging from \$1,000 to \$50,000 are the Arca Foundation, the Haymarket Foundation, the Jessie Smith Noyes Foundation, the Laras Fund, the Rockefeller Brothers Fund, Septimus II, and the New Century Education Corporation. In Canada, New Alchemy has been assisted by the Federal Government of Canada and by the Provincial Government of Prince Edward Island.

We should not have been able to function as a viable organization without the help of the above and more particularly without the efforts of a few individuals who have been dedicated in interpreting our work and our perspective. Their efforts are very much appreciated.

New Alchemy at this time has no long-term financial commitments or endowments. Further, we have only a fraction of the support we need for the next year or two. If any of our readers or friends are able to help, or to bring us to the notice of potential contributors, we would be most grateful.

— Nancy Jack Todd

Photo by Hilde Atema Maingay







## Costa Rica Farm

After what seemed like an eternity of "shopping", New Alchemy is finally the owner of a farm in Costa Rica. Located in a remote and inaccessible area, far from roads, the sixteen acres include a small house, a small strip of Caribbean beach front, substantial quantities of coconut trees and platanos, a variety of other fruit trees, and a stand of virgin forest.

Bill McLarney and Susan Ervin were there this year to begin setting up a center. Top priority projects are the repair and remodeling of the existing house and/or construction of a new one, and planting of fruit trees and field crops. Second priority goes to a vegetable garden and perhaps construction of a brackish water fish pond.

It looks as though New Alchemy South will be a shoestring operation. There is presently no grant money available for use in Costa Rica. Initially, this may be an advantage of sorts, since we will be up against exactly the same problems as the local residents. At present the surrounding community is a stable one. However, the people are under the usual economic and social pressures to sell their land to prospective cattle ranchers, lumbermen, or tourist developers and to move to the city. There is also the problem of a typically unstable economy associated with a monoculture — in this case, of cacao. (Additional sources of income are coconuts and turtle hunting, but these are relatively minor and affect only the people along the beach.) The local economy is presently in good shape, owing to a succession of fair to good cacao years and high prices engendered by crop failures in West Africa. Should West African cacao make a comeback and/or the Costa Rican growers experience a poor year, the economy will slump. Of course, all the pressures on the community will be exacerbated if the area ever gets a road.

If we can help to provide some economically viable alternatives to cacao monoculture or increase regional self-sufficiency in food production, we may make a significant contribution to the preservation and stabilization of the local and regional communities.

— William O. McLarney

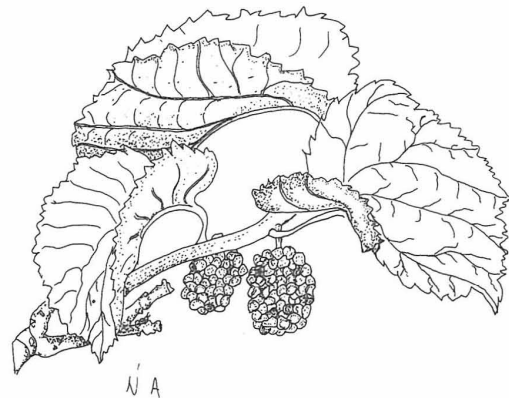
## The Film

I am hoping that it won't be misunderstood or sound immodest when I say that the film "The New Alchemists", which was made by Dorothy Todd Hénaut for the Challenge for Change section of the National Film Board of Canada, is an unqualified success. I base this statement not on my own reactions, or on New Alchemy's collective response, for it is next to impossible for any of us to be objective. We tend to cherish such lines as McLarney's "You're stepping on the parsley" or John Hess's rather sarcastic asides while overlooking statements that might be more meaningful. My information on the impact of the film is drawn from reports brought to us by Dorothy Rosenberg who is responsible for its distribution in Quebec. The report states that "Its major use has been as a tool for the stimulation of education or a catalyst for action."

It has been shown to concerned citizens, educators, community organizers and environmentalists, to people in food co-ops, agriculture classes, women's groups, film festivals, ecology classes, Church groups, food and energy conferences, to back-to-the-landers, senior citizens, gardening groups and to native peoples. Some of the more concrete results have been:

- the plugging of elementary grade students into a local anti-pollution group
- added impetus to the roof and city gardening project of an urban community center
- the formation of an environmental group by a local community service
- increased public agitation by an urban anti-pollution association
- public discussion of nuclear energy, with regard to both the options to it and the disposal of radioactive wastes.

Although responses have varied, the overall reception to the film seems to have been very positive. Judith Farncomb, who distributed the film in Ontario, wrote " 'The New Alchemists' has a therapeutic effect on many individuals, particularly at this point in



time when everything looks rather dismal. It gives people a sense of optimism by offering them a tangible example of what can be accomplished through a cooperative effort without further endangering the environment. And the film provides a needed stimulus to those groups who have already started work in the area of alternatives." Ms. Farncomb also felt that the film had served as a "connecting link" between people who were interested in or doing research along lines similar to ours, but who previously had not been benefiting from each other's experience and knowledge. Among Dorothy Rosenberg's screenings in Quebec was one for agriculture students who had had considerable background in biology. Their feeling was that it was the first time that many of them had seen "a whole integrated complex functioning in harmony."

So, in spite of occasional criticisms such as there being insufficient biological and technical detail in the film or that it suggests that New Alchemy has a male-dominated structure, it would seem that the film has done exactly what we had hoped it would. Certainly, it has reached far more people than we could have on our own. If, as the Challenge for Change credo suggests, film can be a powerful catalyst for change, and if enough people are encouraged by it to think, in Judith Farncomb's words, that "people must become involved and responsible for their own destiny instead of apathetically relying on experts and government legislation to solve problems everyone is responsible for", then "The New Alchemists" has done its work well indeed.

## Intrigue in the Office

Several months ago we received in the office a listing, 27 pages long, of "Energy Related Literature" available by mail from John Roby of San Diego, California. On perusing it, we found what appeared to be references to nine different books and articles written by New Alchemists offered on this listing, No. E-200. Checking the offerings indicated that a person could send \$9.00, plus postage and handling fees, to John Roby and receive listing "No. 648. Sherman. SAILWING WINDMILL. High-capacity. Uses automobile crankshaft\*\*\* Journal article." Or, send \$7.00 plus postage and handling fee and receive "No. 658. TWENTY-FIVE FOOT SAIL WING WINDMILL\*\*\*".

In order to learn whether our copyrights on *Journals One* and *Two* were being infringed upon we asked "our agent" to place orders for Roby's No. 648 and No. 658 and sent the necessary \$16.00 plus "postage-handling." In due course New Alchemy received an order from Mr. Roby for our *Journals One* and *Two* which was followed shortly by the receipt of the two volumes by "our agent." We subsequently received payment of \$10.00 from Roby.

So far as we can ascertain, all of this, although questionable, is quite legal; our copyrighted publications apparently are not being copied for resale by John Roby — he is simply acting as a clearing house — and in this case, picking up a cool 60% over his costs. We have no real hostility toward John Roby or any others who may be engaged in similar enterprises but we are dismayed to think that people seeking the information which we make available through our publishing program may pay such exaggerated prices and, worse, that they may think New Alchemy is actively sponsoring such an activity as a distribution means. We are not! We cannot refuse to sell our material to such clearing house activities. We are flattered by Mr. Roby's estimate of our worth, but we can hope that everyone knows that we sell our *Journals One* and *Two* for \$4.00 and \$6.00, respectively. Our Windmill Bibliography is free (not \$5.00) but we ask for a stamped self-addressed envelope. Our Newsletter No. 3 "Methane Digestors" is \$3.00 postpaid (not \$6.00).

— Robert C. Angevine

