

A CHANGE OF HEART

THERE are various ways of estimating the obstacles that stand in the way of changing people's hearts, but the most clarifying and conclusive is probably to inspect what is said in a book of quotations, under "Heart," "Opinion," and "Majority." Our preferred source is *Stevenson's Book of Quotations*, perhaps because it is the largest, and an almost infallible source of the graded confusion that makes for a healthy state of mind.

What has this oracle to reveal on the subject of Heart? By alphabetical privilege Ambrose Bierce provides the first entry, from his *Devil's Dictionary*:

In each human heart are a tiger, a pig, an ass, and a nightingale. Diversity of character is due to their unequal activity.

Second comes Lord Chesterfield, who at least adds a yesteryear respectability:

The heart has such an influence over the understanding that it is worth while to engage it in our interest. It is the whole of women, who are guided by nothing else; and it has so much to say, even with men, and the ablest men too, that it commonly triumphs in every struggle with the understanding.

Skipping around, we find Thomas Gray, inspecting the graves in a country church yard, musing on some buried heart "once pregnant with celestial fire," and Cervantes confessing, "My heart is wax to be moulded as she pleases but enduring as marble to retain." Hume declared that "The heart of man is made to reconcile contradictions," while Matthew Arnold declaimed:

The brave impetuous heart yields everywhere
To the subtle contriving head.

There is Pascal's "The heart has its reasons, which reason does not know," against which may be set a "Night Thought" of Young: "If wrong our hearts, our heads are right in vain."

Then, under Majority, Eugene Debs said at his trial in 1918: "When great changes occur in history, when great principles are involved, the majority are wrong." Freedom, then, we must conclude, includes the right to be wrong. Emerson asked, "Shall we judge a country by the majority, or by the minority?" answering, "By the minority, surely." In his first Inaugural Address, Lincoln said:

If by the mere force of numbers a majority should deprive a minority of any clearly written minority right, it might, in a moral point of view, justify revolution—certainly would if such a right were a vital one.

Under Opinion we go from Milton's "Opinion in good men is but knowledge in the making," to Montaigne's: "It seems to me that the nursing mother of most false opinions, both public and private, is the too high opinion which man has of himself." Here, best of all is perhaps the view of Wendell Phillips: "Truth is one forever absolute, but opinion is truth filtered through the moods, the blood, the disposition of the spectator."

If the goal is "a change of heart," this will involve a change in feeling concerning what is right and good. For change in individuals and how it is accomplished, biography is the best source. But biography, for the most part, informs us of the radical decisions made by distinguished individuals, and there seems little or no common denominator as to the causes affecting the change. The blinding and uplifting light encountered by Paul on the road to Damascus might serve as a universal metaphor, since it can hardly be reduced to a formula. Jane Addams began her self-sacrificing career after seeing a bullfight in Madrid; Henry George was inspired by sight of the poverty and want in an American city on a bitterly cold winter's day; Tom Paine spoke of thoughts that "bolt into the mind of their own

accord," adding that "from them I have acquired all the knowledge that I have."

Paine, indeed, will serve in the transition from individual to collective changes of heart, since no one man did as much for the American colonists, arousing them to the tasks of the Revolution, as Paine accomplished with his extraordinary ability as a writer. In *Fundamental Testaments of the American Revolution* (Library of Congress, 1973), Bernard Bailyn begins his essay:

Common Sense is the most brilliant pamphlet written during the American Revolution, and one of the most brilliant pamphlets ever written in the English language. How it could have been produced by the bankrupt Quaker corsetmaker, the sometime teacher, preacher, and grocer, and twice-dismissed excise officer who happened to capture Ben Franklin's attention in England and who arrived in America only 14 months before *Common Sense* was published is nothing one can explain without explaining genius itself. For it is a work of genius—slapdash as it is, rambling as it is, crude as it is. It "burst from the press," Benjamin Rush wrote, "with an effect which has rarely been produced by types and papers in any age or country." Its effect, Franklin said, was "prodigious." It touched some extraordinarily sensitive nerve in American political awareness in the confusing period in which it appeared.

It was written by an Englishman, not an American. Paine had only the barest acquaintance with American affairs when with Rush's encouragement, he turned an invitation by Franklin to write a history of the Anglo-American controversy into the occasion for composing a passionate tract for American independence. Yet not only does *Common Sense* voice some of the deepest aspirations of the American people on the eve of the Revolution but it also invokes, with superb vigor and with perfect intonation, longing and aspirations that have remained part of American culture to this day.

How was Paine able to do this? As Bailyn points out *Common Sense* appeared at "what was perhaps the per feet moment to have a maximum effect." The war had begun, the Redcoats were here, and Paine wrote to give "heart" to the rebelling colonists. But in their minds and feelings they were not yet ready for the momentous step of declaring themselves free and independent of

Britain. It is fair to say that Paine's work made them so. It was, in Victor Hugo's later words, the "thing stronger than all the armies in the world; and that is an idea whose time had come." It was this that Paine made his readers realize—that the time for independence, with all that this implied, had arrived. Prof. Bailyn tells how Paine used this opportunity:

The great intellectual force of *Common Sense* lay not in its close argumentations on specific points but in its reversal of the presumptions that underlay the arguments, a reversal that forced thoughtful readers to consider, not so much a point here and a conclusion there, but a wholly new way of looking at the entire range of problems involved. For beneath all of the explicit arguments and conclusions against independence, there were underlying, unspoken, even unconceptualized presuppositions, attitudes, and habits of thought that made it extremely difficult for the colonists to break with England and find in the prospect of an independent future the security and freedom they sought. The special intellectual quality of *Common Sense*, which goes a long way toward explaining its impact on contemporary readers, derives from its reversal of these underlying presumptions and its shifting of the established perspectives to the point where the whole received paradigm within which the Anglo-American controversy had until then proceeded came into question.

In short, Paine, through his magnificent rhetoric, freed the colonists of their feeling of allegiance to the king of England, replacing it with self-realization of their capacity and right to govern themselves. He did this by mockery of kingly ways and contempt for royal presumptions and privileges, contrasting the loyalties of immature childhood with the manly self-reliance the colonists had already achieved on the frontier. Finally,

The verbal surface of the pamphlet is heated, and it burned into the consciousness of contemporaries because below it was the flaming conviction, not simply that England was corrupt and that America should declare its independence, but that the whole of organized society and government was stupid and cruel and that it survived only because the atrocities it systematically imposed on humanity had been papered over with a veneer of mythology

and superstition that numbed the mind and kept people from rising against the evils that oppressed them.

Paine's vision, one could say, went far beyond/ the capacity of his countrymen in America to comprehend and adopt, yet their aspirations, upon maturity, looked in the same direction as his vision, and the provocations from history—stupid and insensitive rule from afar, taxation without representation—pointed toward the way-station that was finally realized in the Declaration of Independence and, a little later, the Constitution of the United States. This was indeed a change of heart.

What of today? What shall we say is the needed change of heart? Answers are not lacking. We could start by naming the answers given by Gandhi in *Hind Swaraj*, published in the first decade of this century. Coming to the present, two other books are animated by a similar quality of vision—Schumacher's *Small Is Beautiful* and Wendell Berry's *The Unsettling of America*. In between came books by Joseph Wood Krutch and Lewis Mumford, and more lately work by John and Nancy Todd, Wes Jackson, and John Jeavons. How shall we describe the common burden of such writings? They seek a mutually fruitful balance between man and nature, and a commonly reinforcing harmony between man and man.

Paine and the Founding Fathers had an assist from history. The Redcoats and later the Hessians were on the scene. The meaning of their presence was intolerable and the colonists, after some stalling and days of half-heartedness, got rid of them. Then we had a time of political splendor, with men for president like Washington, Jefferson, Madison, Adams, and Lincoln at the time of the Civil War. This was America's golden age, during which men of character were not unwelcome in office. What will it take to make them welcome once again? We hardly know.

Today it is almost written in the stars that political success means characterological default. Think of what the winners have to do—the money

they must raise, the promises they must make—and break—and the compromises which are the inevitable trade-offs of political life. No wonder men and women of good character have instead busied themselves with planting gardens and trees. To what issues or problems would a Paine of today address himself? In what sort of awakening in how extensive an audience would he place his faith? It is very difficult to say. There may be clues in the fact that a comparatively obscure writer like Rachel Carson could write a book about what was happening to the natural environment and find that its advance sale, before publication date in 1962, could reach 40,000 copies.

Where, she asked, have all the birds gone? As Frank Graham, Jr., says in *Since Silent Spring*:

What was this book which created such an uproar? *Silent Spring* is, essentially, an ecological book. Almost everything that had been said about chemical pesticides before this time had been phrased in *economic* terms. . . . Rachel Carson approached the subject from a different direction—from the breadth of her experience in the biological sciences and the depth of her sympathy for all living things.

After *Silent Spring* was published she told an audience:

We have already gone very far in our abuse of this planet. Some awareness of this problem has been in the air but the ideas had to be crystallized, the facts had to be brought together in *one piece*. If I had not written the book, I am sure the ideas would have found another outlet. But knowing the facts as I did, I could not rest until I have brought them to public attention.

Frank Graham's book is useful as the story of the heroic struggle of a woman scientist to reach and affect public opinion. She succeeded because of her own thorough knowledge of living processes and their enemies, because of her effective prose and her refusal to be silenced, and, finally, because of the support of scientists who could not be bought off by the chemical pesticide interests. But the book is equally valuable as a study of the determined resistance to change on the part of powerful industries whose profits

depend upon continuing their established practice. Indeed, the economic structure of our country is largely made up of and controlled by manufacturing and commercial interests whose operations, encouraged by free enterprise in its sloganized meaning, and sanctioned by hired technicians who claim sole authority as to their beneficial or harmless effects, have only lately been challenged by any form of public opinion.

It is this questioning of industrial practice by a handful of scientists and, increasingly, by a few independent journalists, that is opening the way for the formation of ideas and attitudes that should eventually become strong influences for a change of heart. This time the assist is not from history but from nature, an outraged and mutilated nature, and also from nature as distorted and coerced by the techniques of aggressive technology. An example of this awakening was given recently by Ed Marston, the publisher of *High Country News*. Reviewing a *Wall Street Journal* article on the gullibility of reporters who at first accepted the explanations by nuclear industry spokesmen and A.E.C. officials for the catastrophe at Three Mile Island—only to find that they had been tricked and lied to, with the result that they wrote stories which were not true—Marston raised the question: How can America survive "in an age that is both centralized and technological if those in charge of the power centers cannot be trusted"? He concluded:

Those are the questions we face. They go far beyond being for or against nuclear energy. TMI has helped us to see that nuclear energy is a technological Watergate, raising fundamental social and political questions about the society in which we live.

One way of exploring fundamental social questions is to regard the state of mind of the mass population of the United States and the means of reaching it. A reading of Neil Postman's *The Disappearance of Childhood* would be helpful here. By his title Postman means the merging of childhood and adulthood through the influence of the medium of television. Television, he says, "Las Vegasizes" our culture. There is no

serious exposition on TV, only pictures and conversation. "What," he asks, "is the effect on grownups of a culture dominated by pictures and stories?"

What is the effect of a medium that must abjure conceptual complexity and highlight personality? What is the effect of a medium that always asks for an immediate, emotional response?

If the medium is as pervasive as television is, then we may answer in this way: Just as phonetic literacy altered the predispositions of the mind in Athens in the fifth century B.C., just as the disappearance of social literacy in the fifth century A.D. helped to create the medieval mind, just as typography enhanced the complexity of thought—indeed, changed the content of the mind—in the sixteenth century, then so does television make it unnecessary for us to distinguish between the child and the adult. For it is in its nature to homogenize mentalities. The often missed irony in the remark that television programs are designed for a twelve-year-mentality is that there can be no other mentality for which they may be designed. Television is a medium consisting of very little but "pictures and stories." . . . In saying all of this, and in spite of how it may seem, I am not "criticizing" television but merely describing its limitations.

While television may homogenize by technological necessity (see Jerry Mander's *Four Arguments for the Elimination of Television* for confirmation of this view), the dissolving of cultural distinctions began much earlier in the popular magazines. In *Against the American Grain* (1962) Dwight Macdonald provided the classic example:

Life is a typical homogenized magazine, appearing on the mahogany library table of the rich, the glass cocktail tables of the middle class, and the oilcloth kitchen tables of the poor. Its contents are as thoroughly homogenized as its circulation. The same issue will present a serious exposition of atomic energy followed by a disquisition on Rita Hayworth's love life; . . . an editorial hailing Bertrand Russell's eightieth birthday (A GREAT MIND IS STILL ANNOYING AND ADORNING OUR AGE) across from a full-page photo of a matron arguing with a baseball umpire (MOM GETS THUMB); nine color pages of Renoir paintings followed by a picture of a rollerskating horse. . . . Somehow these scramblings

together seem to work all one way, degrading the serious rather than elevating the frivolous. Defenders of our Masscult society like Professor Shils of the University of Chicago—he is, of course, a sociologist see phenomena like *Life* as inspiriting attempts at popular education—just think, nine pages of Renoirs! But that roller-skating horse comes along, and the final impression is that both Renoir and the horse were talented.

How can we defend ourselves against the hypnotic glare of the media, whose sole objective is to produce uniform responses from everybody? How can we ward off the advent of what Eric Seidenberg called the age of Post-Historic Man, in which we are all reduced to mechanized action determined by the requirements of the System, which will then embody all that we need to stay alive—when humans will make no more decisions for themselves, thus putting an end to the events that are the landmarks of history? How deeply buried, now, is "that mighty heart" that Wordsworth felt beating beneath the sleeping city? By what means will it awake?

What will be the face of the benign conspiracy of forces of nature that can arouse the decencies and hopes of mankind from their drugged somnolence? Not very many years ago, Roger Fry spoke of our condition:

It seems to me that nearly the whole Anglo-Saxon race, especially of course in America, have lost the power to be individuals. They have become social insects like bees and ants.

It is a question of the hold of orthodoxy, of "mainstream" ideas and habits and responses, of the grip of what Ortega called "binding observances" which persist without advocacy as the very standards by which we live. "What acts," he said, "is simply their mechanical pressure on all individuals, their soulless coercion." A change of heart will mean, first of all, the restoration of decision to the individual in human life.

We have these terms—status quo, Establishment, collective will, prevailing opinion—to identify the ways of life which are in a sense dead, in the same way that the trunk of a

tree is dead, no longer growing, yet which holds everything in place. Without the trunk, there would be no tree—its function is irreplaceable—yet an established structure can be made nonetheless hospitable to growth where growth is needed, and even to submit to change if gradual enough, in the structure of the tree. Humans may not be wise enough to be full-time creators, to remake everything as they would have it. They do not really know how they would have it, and would almost certainly make terrible mistakes. But they are able to be *recreators*, to alter, in terms of vision, the ways that are susceptible to change, to foster growing tips within the interstices of a brittle and failing society. Such are the activities of present-day pioneers, already among us, existing practitioners of a change of heart.

REVIEW

FAR AND NEAR

THE dissolution of things into their opposites, and then their recreation in more eternal forms—this seems a way of thinking of the work of William Bronk, a poet who wrote the essays titled *Vectors and Smoothable Curves* (North Point Press, 1983, \$20.00). He was born in the state of New York sixty-five years ago, but he inhabits the ranges of an exploring mind. Something of the mood of the book is found in its closing pages, in a quotation from Herman Melville's *Pierre*. Mr. Bronk says:

The heart of the ambiguity in Melville's life is seen in a paragraph in which Pierre reflects on his present and past conditions after he has been disowned by his mother and deprived in other ways of all the happiness and beauty which life had promised him. How different is Melville's attitude here from that earlier one in *Redburn*, when he considered that evil sailor, Jackson, whose hate and fury, to Melville's astonishment and disgust, had been turned on the robust and good-humored, the strong, the fine, and the handsome. Pierre resolves all his mother's love to pride, and doubts she would ever have loved him had he been, for example, a cripple. "Me she loved with pride's love," Pierre exclaims, in the archaic diction which fills the book to its detriment but fails to destroy its import. "In me she thinks she seeth her own curled and haughty beauty; before my glass she stands,—pride's priestess—and to her mirrored image, not to me, she offers up her offerings of kisses. Oh, small thanks I owe thee, Favorable Goddess, that didst clothe this form with all the beauty of a man, that so thou mightest hide from me all the truth of a man. Now I see that in his beauty a man is snared, and made stone-blind, as the worm within his silk. Welcome then be Ugliness and Poverty and Infamy and all ye other crafty ministers of Truth, that beneath the hoods and rags of beggars hide yet the belts and crowns of kings. . . . Oh, now methinks I a little see why of old the men of Truth went barefoot, girded with a rope, and ever moving under mournfulness as underneath a canopy.

The first fifty pages of the book are a musing on ancient sites in Peru and Central America; nearly all the rest given over to companionship with Thoreau, Whitman, and Melville; yet the subject of Bronk's wonderings hardly changes.

The reader goes to these places with him, listens to inner dialogues with the Transcendentalists, but is really enjoying the hospitality of a spacious mind. Where did he visit? He went to Machu Picchu, the mountain eyrie of the Incas that the Spanish never discovered, were unable to desecrate, which was finally found in 1911 by an expedition led by Hiram Bingham, who later wrote about this tiny city, built as though engraved on the tip of a mountain obolisk. Coming upon this city again in Mr. Bronk's book will be like meeting an old friend for those who have read Mr. Bingham and pored in wonder over the photographs of this place in old issues of the *National Geographic*; and have perhaps listened in awe to the reports of friends fortunate enough to visit there. Mr. Bronk deepens and vivifies such memories for the reader.

There is a wall at Machu Picchu that Bingham called "the most beautiful wall in America." The author agrees.

It may be meaningless to insist on his superlative, but there is no reason to quarrel with it. Even if we know that these builders had no iron or steel tools we feel no need, when we look at this wall, to make an allowance for primitive techniques. No tools or knowledge we know could have made it finer. One might think, a world away, of the Shakers who in their work with wood achieved a similar plain perfection. These stone surfaces have been worked and smoothed to a degree just this side of that line where texture would be lost. . . . Since no mortar was used it was necessary for each stone to match perfectly all other stones that it touched and these are not like brick or building block that are regular, interchangeable units. Probably no stone was cut quite like another. In many cases they are roughly rectangular, but each one has its variations in size and shape. An inner angle of one is perfectly reflected by an outer angle of the one adjoining, and even after all the intervening time, there is no space at all between. This correspondence, moreover, was not merely of the surface but extended as deep as the stone. What periods of patient effort each one must have required to give us now the great satisfaction of harmonious order, of the pieces for once put together even if the pieces in this instance are only stone.

A further comment has greater importance:

It is customary—and of course justified—to speak of the engineering skill of these builders and to admire their techniques, or the results rather, of their techniques since we have not discovered really how they worked. And yet, to modern eyes, the deep impression of the city as a whole is not one of technical skills. Admirable as these may be, we have nevertheless surpassed them long ago in tools and methods. But nothing we have been able to do in this medium surpasses Machu Picchu in beauty. It is something more than an engineer's or stonemason's city. Over and over again one stands in admiration before the imaginative concept of a wall or a building or a prospect to the realization of which the proficient skills were only a tool, however necessary. It is in this sense that Machu Picchu is an important place, and in this sense also we have not advanced, that time since then has wavered backwards and forwards as we have tried with the encumbrance of our far more numerous and varied skills to achieve a degree of perfection which was reached so simply here so long ago. We are not likely to do better.

However small, he says, Machu Picchu is essentially a city, "a complete and perfect abstract of a city." The houses are real and we want to live in them. Even we of modern times feel that we can belong there "because these builders were human in the strongest and best way we can imagine though they used other words and grammar in their language, and their tools and materials were different from ours." A final thought:

How satisfying it is that the Indians that Gheerbrant found on his expedition to the jungles of the upper Amazon, were moved and delighted by Mozart's music. It appears that there may be such a reality as man, and that our tradition is not entirely one of accidentals and eccentricities. Machu Picchu is entirely outside our tradition, so remote from us in time and space as to be untouched by it. It confirms and corroborates us. We find here our own image reflected, and it is as though we were to find an algebra among cats, or a Christianity among the people of Mars.

Mr. Bronk is no complainer or excoriator. Yet he is certainly not content with the way things are. Least of all is he deluded by the myth of modern progress. He would be quite happy with the conveniences available in the time of Thoreau,

and would probably go anywhere, anytime, to enjoy the society of Thoreau. But this is not quite right, since his book does much to generate the society of Thoreau. Thoreau, for all his walks in the woods, lived in his mind, and so, we think, does the writer of these essays. Thoreau's utopia was not a far-off dream but part of his everyday life. It is this reality that Mr. Bronk tries to get across to us, and in some measure succeeds. Thoreau had already found his utopia by learning for himself the nature of utopian practice. He knew how to make himself free, and had done it, and continuously marveled that other men did not do the same.

As Mr. Bronk says: "He believed that it was possible to live nobly and that it was his business to do so,—to make life as a whole less petty purely by the main force of his own living."

Thoreau moved away into a larger view of life and did so for the reason that life looked so large to him that he saw no way to live it profitably on a pettier scale. Moving away like this is moving closer. He came to look at things more directly, getting the full brilliance of them, and so never lost his larger view of the world, keeping it always in mind in his actions,—dreaming himself, as it were, into life.

If there is anything the modern world needs, it is a better understanding of and appreciation of Thoreau. He was a man who knew how to find the ideal in ordinary circumstances, who could look behind the appearances as they seemed to other men and to recognize the ideal, celebrate it, and even, in a way, to define it. He showed that it is the human being, not the world, who has all these riches, although the world is needed as a mirror for them to be displayed. He knew that utopia is not a place where no one has to try, any more; it is a place where challenges are understood and welcomed, and therefore almost entirely of our own construction. What can we do for the coming generation? we ask ourselves. Saturate it with Henry David Thoreau is the best answer we know.

Besides Machu Picchu Mr. Bronk visited Tikal in Guatemala, which "may well be the oldest

of the Mayan cities." The Mayans had a way of counting time, different from ours, but as serviceable. The Mayan era, he says, began "somewhere near 3000 B.C. in our chronology." This seems a good thing to know about Guatemala, a place with an ancient cultural history much longer than ours, and of which most people have never heard. We know nothing, these days, about Guatemala except the political problems the people have; they—and we—have a long way to go to the practice of politics as Thoreau would have it: silently, attracting no more attention to it than we give to our digestion, since it has so little to do with the real business of life.

Mr. Bronk also visited Palenque in Mexico, where the Mayan ruins are better preserved, yet abandoned centuries before the Spanish conquest—no one is sure why. Another Mayan city he went to is Copan in Honduras, where the latest date recorded on monuments is 800 A.D. Who were the people who built this place, and where have they gone? Yet a visitor, Bronk says, may feel comfortable there "because, however remote or alien its terminology, we sense through all our ignorance that time and history have been here once."

The essay on Walt Whitman is enjoyable both for the numerous quotations from *Leaves of Grass* and for the writer's understanding of what Whitman was attempting to do.

COMMENTARY
A MODERN PARADOX

PEOPLE who think of themselves as living in bioregions (as described by Kirkpatrick Sale in this week's *Frontiers*) are likely to be practicing the sort of agriculture that goes on at the New Alchemy Institute (see "Children"). They are gradually adopting another way of thinking about the material foundations of their lives. No wonder it takes time!

So great a change in attitude and custom has a parallel in the change that Tom Paine sought to bring about in the thinking of the American colonists. He explored their unquestioned assumptions—their moral allegiance to the King of England, their habit of relying on existing arrangements as though they were the laws of nature and enjoyed the endorsement of Deity—things no one is expected to question or argue about. But Paine questioned them in a way that revealed their weakness and contradictions. He was confident that the time had come for a change, and he was right. It has taken two centuries almost for us to feel grateful to him. That seems to be the fate of those who are ahead of their time.

The ecologists, the bioregionalists, the teachers of ways of life in harmony with nature are also ahead of their time, yet their efforts are now reinforced by a noticeable change in the times—the voice of Nature herself has been added to the warnings of the ecologists. She speaks in numerous vernaculars which are becoming hard to ignore or misunderstand. The facts of shortages, of pollutions, of fertile fields becoming barren wastelands need no translation for an increasing number of people. Conceivably, gratitude may come to the Paines of our time before they die.

Yet there is value in understanding why such changes sometimes seem so slow to take hold. It isn't the surface of our lives that needs changing, but the roots. The fixtures on which we have depended for generations require replacement.

The things we have believed in since the time of Hobbes and Adam Smith have not only lost their stability; they are conducting our thinking into box canyons of impossibility. Usually, the more "intellectual" we are, the less we are able to see of the natural demands of change. The change is required of and by life, while those who live in intellectual structures have lost touch with life. Yet there are now "intellectuals" who are pointing this out—one of the paradoxes of being human.

CHILDREN ... and Ourselves TOURING ON CAPE COD

WHAT sort of education goes on at the New Alchemy Institute? Founded by John Todd and William McLarney about fourteen years ago, the Institute is devoted to teaching stewardship of the land. Their most notable achievement is the Ark—a solar-heated, wind-powered, subsistence residence with greenhouse and garden, fish pond and fish-food manufactory, and room for a family to live. The Ark is the core, but all around are various projects and experiments going on, to find out the most sensible way to live on the land, in New England and a lot of other places. There is now a good-sized staff, and they've even taken to having titles, which makes it something of an institution. The program, however, has depth and vitality. The quarterly journal, *New Alchemy*, for last summer has a story on their guided tours (\$3 a person), with plenty of interchange between the visitors and the guide. One guide, Merryl Alber, tells about the tours, at the beginning of which, usually with the gardens, she tells about three things learned from the forest:

1. *When you look down in the forest, what do you see? You see pine needles, leaves, and other organic matter that makes up the humus layer, but you don't actually see the soil.* The first lesson: Nature keeps the ground covered. In our garden, we keep a thick layer of organic matter, or mulch on the soil, which helps prevent erosion, acts as a sponge to absorb rainwater, and helps suppress weed growth.

2. *Who rakes up the leaves in the forest? No one? Then what happens to them?* The mulch breaks down, adding nutrients to the soil, in keeping with one tenet of organic gardening: you give back more than you take out. Lesson two: Nature recycles. This is the first of my references to integrated cycles.

3. *There is diversity in nature, which is also mimicked in our garden.*

After seeing and talking about the gardens the tour inspects the rest of the farm, which takes an hour or two. What are the gardens like? We

remember one experiment of some years ago: A planting to find out which variety of cabbage was most resistant to pests in an unsprayed plot. This becomes quite important to organic gardeners.

What do the visitors say or ask? Merryl Alber gives the most common questions, and the answers:

Isn't the salt in the seaweed mulch harmful to plants?

At first, we kept the seaweed in piles for several weeks and rinsed it off before applying it to the gardens, because we were concerned about the salt level in the soil. However, Susan Ervin did several experiments where she planted identical plots and applied different kinds of mulch. Although salt levels were higher in the plots mulched with seaweed, after a single winter's leaching there was no measurable difference in salt levels between plots mulched with seaweed and plots without. Many crops, including tomatoes, peppers, beets and chard, have shown increased yields when mulched with seaweed. However, two plants that have responded badly are lettuce and strawberries.

What do you do with your food?

Some of the food goes to feed the staff. This year we'll continue to sell produce both to local restaurants and on Farm Saturday to visitors.

What do tilapia taste like? [Tilapia are food fish adapted to aquaculture.]

Tilapia are a mild white meat fish, comparable to perch. Although people sometimes complain about the bones, it just takes a little practice to work around them. I've had them baked, fried, steamed, smoked, pickled, broiled and curried. . . .

Parents want to know how cold it gets in the Ark, and learn that in January (remember, this is on Cape Cod) "daytime temperature ranges from the mid-70's on sunny days to low 60's on cloudy days." Night temperatures get down to the 40's. Parents also ask:

Isn't super-insulation expensive?

Paradoxically, no. Although you do pay for extra insulation, a vapor barrier, and an air-to-air heat exchanger, the added cost for a typical single-family new home is \$4,000. However, by super-insulating you've eliminated the need for a furnace

and chimney, which typically costs \$3,000. The extra \$1,000 is easily saved in heating bills (or lack thereof) over a two-year period. The steady fixed payback of a home improvement loan for super-insulation is cheaper in the long run than ever-changing rates on never paid-off oil bills.

Why isn't everyone using your methods?

We've come a long way since 1969. People are gardening organically and building passive solar greenhouses to a much greater extent than ever before. According to the April 1983 issue of Gardens for All net farm income in 1982 was \$20 billion, while the net value of home fruit and vegetable production just reached a new high of \$17 billion. "Given the current trends and future outlook for the big farms, the net production from our small gardens may soon surpass that of the entire farming industry." As the lagging economic system changes to reflect the true price of fossil fuels, the price of conventional agriculture and conventional heating has to increase and more and more people are turning toward alternative energy with renewed interest. We can only hope that interest grown

Who comes on the tours? The ages range from kindergarten children to graduate students, adult visitors from garden clubs to scientific institute people. Of the children, Miss Alber says:

Before I let kids into the Ark, the last stop on the tour, they have to answer the following: Which way is South? What do you think is in here? What are the plants for? What do we do with the weeds? How do we store heat? What do we do with the pond water? with the fish?

And in we go. Why is it warm in here? Upon entering the Ark last summer, one woman remarked: "This is nice, how do you turn it on?"

To help explain another reason for giving tours and for why we do the work that we do, I've started using the milk analogy.

I want you to close your eyes, and imagine you're on a space-ship. Now, what do you do if you run out of milk? No, you're out in the middle of space and you don't have any cows. Finally, someone will say, "Then I wouldn't eat cereal" or, "I'd drink something else." In other words, "I'd do without." OK, I say, now think of a picture of the Planet Earth taken from outer space. We're actually on a large spaceship, travelling around the sun at 60,000 miles per hour. We're not running out of milk, but what are

we running out of? By this point of the tour, even the youngest groups know that fossil fuels are a non-renewable resource.

At New Alchemy, we practice appropriate technology. That doesn't mean going backwards or forgetting scientific advancement since the time of the industrial revolution. Rather, it is exactly what it sounds like: using technology in an appropriate manner. After I've described the petroleum input into most food (in the form of fertilizer, pesticide, herbicide, farm machinery, packaging and transportation), many people are quick to point out the use of plastic for glazing material and fish ponds on the farm—a petroleum-based product.

Which is appropriate: using oil to produce glazing for a greenhouse which can then heat your home for many years or taking that same oil and burning it in your furnace to heat your home for several hours? Producing special glazing to test on the dome, or producing hamburger containers that you throw away? What we're doing at New Alchemy is looking for ways to produce food, energy, and shelter with a minimum reliance on fossil fuels.

Another writer for the Quarterly says of the work of the Institute:

By increasing the growing season on small parcels we are, in a small way, increasing the food security in our region. . . . The technology is relatively inexpensive; however, we need to continue research to prove their function as an integral component of the food system here in the Northeast.

FRONTIERS

Bioregionalism

[This article, by Kirkpatrick Sale, author of *Human Scale*, is reprinted from the Schumacher Society Fall 1983 Newsletter. Mr. Sale is interested in establishing a Decentralist Center to collect the papers and publish the works of E. F. Schumacher and other decentralist thinkers. His address is 113 West 11th Street, New York, N.Y. 10011.]

THE idea that America is to be understood as a land of regions is as old as the first 17th-century settlements, but it was not until the late 19th century that those regions were seen as having a physiographic—or as we would say, an ecological—character. And though historians and sociologists as well as geographers and biologists continued to examine and develop the importance of regionalism in American life, it was not until the 1960's that the idea of the "bioregion" was first advanced and not until the 1970's that it began to take hold.

Today, just a decade later, bioregionalism represents what seems to me to be at once the most interesting ecological as well as promising political movement in the U.S.

There are, by my loose count, something like twenty bioregional organizations now at work, not including, perhaps, another forty or fifty regional groups and countless individuals with similar local and environmental (if not explicitly bioregional) concerns. They are located from coast to coast, from the Slocan Valley in British Columbia to the Rio Grande in Texas-Mexico, from the Sonoran Desert in Arizona to Cape Cod on the Atlantic, and in between include groups of Northern and Southern California, the Rockies, the High Plains of Wyoming, the Kansas River Watershed, the Ozarks, the Appalachias, the Hudson Valley, and Southern New England.

But just what—after all—is bioregionalism?

It would be nice if I could provide a quick, simple answer to that. But the fact is that at this point it is more an attitude than a construct, more

a way of learning to think than an ideology. And the definitions, the precise terms of the vocabulary for the movement, have yet to be fully worked out—are, indeed, being discussed and pondered regularly.

But in rawest terms, it is agreed that a bioregion is a geographical area whose rough boundaries are set by Nature, not Humankind, distinguishable from other areas by characteristics of flora, fauna, water, climate, rocks and soils, landforms, and the human settlements and culture those characteristics have given rise to. A watershed—that is, the flows and valleys of a major river system—may be seen as a bioregion; or a desert, or a forest; or something larger but still coherent, such as the Rockies, say, or the Great Plains, or the Appalachias.

Bioregionalism, then, is the understanding of the ecological realities that surround us and the attempt to work out economic and political systems that recognize them. David Haenke, one of the prime movers of the Ozark Area Community Congress or OACC (named for the region's totem tree), puts it this way:

Bioregionalism deals with the bioregion as a whole system comprised of a set of diverse, integrated natural sub-systems (atmospheric, hydrologic, biologic, geologic) run by ecological laws with which humans (as one species among many) must work in cooperation if there is to be a substantial future.

These laws form the basis for the design of all long-term human systems, economic, technological, agricultural and political. Political ecology is the politics of bioregionalism.

As Haenke suggests, when we began thinking in bioregional terms, when we come to have a new appreciation for the importance of the ecology we live in, then many other perceptions follow.

We come to understand the forces Nature has laid down for us and learn to live—to farm to manufacture, to travel, to build—within them instead of in violation of them.

We begin to see where our water really comes from and our food and our energy and our products, and we can perceive in a new way how an ecosystem might be naturally, organically balanced—and the awful dangers posed by our various disruptions of that balance.

We come to understand the natural carrying capacity of the region—what it can produce and what its limits are—and develop the bounties that can be had within them.

We start to appreciate the real costs of our present reckless disregard for bioregional realities—the actual effects of soil erosion and water pollution, the social disruption of big utilities and suburban developments, the foolish waste and vassalage of our dependencies on imported foods and energy and other necessities.

And we finally comprehend that if there is to be salvation for this world, it will come through the development of these bioregions into fully empowered, politically autonomous, economically self-sufficient social units in which bioregional citizens understand, and control, the decisions that effect their lives.

Considering the enormities that imperil us now, the result of ignoring bioregional realities? it is hardly surprising that the bioregional movement has grown so far so fast. It may be, I have come to feel, our last chance.

KIRKPATRICK SALE

For the past ten years the Planet Drum Foundation, P.O. Box 31251, San Francisco, Calif. 94131, has been working to explain and spread the idea of Bioregions. Headed by Peter Berg, the Foundation issues pamphlets and books and publishes a paper, *Raise the Stakes*, three times a year. Reading this material informs about the strength, the diversity, and the comparatively rapid growth of this movement.