VOLUME XXXI, NO. 3
JANUARY 18, 1978

THE HEALTH OF THE LAND

AFTER two or three readings of George Sibley's 20-page article in *Harper's* for last October, "The Desert Empire," on where the southwestern states of the U.S. get their water, how it is delivered, and how much of it there is, you begin to get a feeling for what the writer is attempting to say. There are a lot of figures in the article, which help some, but for the most part figures give only a specious sense of reality: you are impressed but you can't remember them. The main point of Mr. Sibley's colorful unpreachy sermon is that because of the way we have set things up, the people in this part of the world are going to run out of water sooner or later, and there doesn't seem to be anything that can possibly change this unpleasant fate. Trying to understand how all this works is likely to make the reader feel like a small boy struggling with school assignments far over his head: we haven't even begun to know how the planet is meant to live and survive, especially in a vast desert area. We need elementary education for quite a while, just to get a grip on the facts.

The situation is something like the one described by Lini de Vries in *Please, God, Take Care of the Mule.* This teacher of nursing and public health went to Mexico in 1949, first working as health educator in the mountain villages in Oaxaca. She started out with basics: You have to know something about how your body works in order to take care of it and use it properly. In this charming and instructive book (its title is based on the hazardous mountain trails connecting the villages where she taught, reached on the back of a sure-footed mule), Lini de Vries describes first lesson for the children in a little school—with the villagers listening and watching "six deep at the wall."

> Since water had recently been piped up to community taps in their village, the children knew what a pipe was, as well as a pump. These objects I could use as analogies for the circulatory system. Trying to capture their interest at once, I asked: "Do you have pipes in your bodies like the water pipes the village now has?" They looked at me as if I were mad. As they shook their heads, I continued: "But you do have a piping system and a pump that pumps a river carrying many things to all parts of your body." Drawing a pipe on the blackboard, I gave it three layers, explaining that the middle one was of elastic tissue. "Now let's prove it. Each of you place your three middle fingers, not too hard, on your wrist just below your thumb. Press gently. What do you feel?" . . .
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> "Now, Juan, count your pulse. Now you, Julia, and you, Maria. Feel it pulse, feel the elastic in your piping system."
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> Great excitement reigned as they felt their pulses, while I, who could hardly draw, was sketching a pump, the heart, on the blackboard. . . .
>
> "Where does the liquid in your pipes go?" I asked, "Does the mouthful of tortilla you bit off and ate—does it go as such to your big toe? . . . What is happening? What is the liquid? What is blood?"
>
> Drawing a big yellow river, I made it change color by adding red cells, red with oxygen and iron. . . . On the blackboard we listed all that one of the boys, then one of the girls, had eaten that day. We checked the river to see if what was needed for growth had been fed to their bodies. Had they supplied the river in each of them with the needed materials for their proper destinations? The pupils were learning a lesson in nutrition and the circulatory system, as well as parts of the digestive system, without being overwhelmed by frightening pictures and words.

There is enough parallel between what Lini de Vries was doing in Oaxaca and the instruction about rivers and water supply attempted by George Sibley to make the comparison worth thinking about. Mr. Sibley wants his readers (pupils) to feel the pulse of the Colorado River, where most of Southern California's water comes from. If you visit Hoover Dam, the guide of the conducted tour deluges you with facts and figures:

> But Hoover Dam had its subtle ways of coming in around the edges of the guided tour, the fountain of statistics—as when I was down on the powerhouse deck, outside by the big step-up transformers, and the guide was rattling on about generators, transformers, and turbines big enough to mangle 500 cats a minute . . . but while he was talking, something was going *gronk,* an unhuman, omnidirectional *gronk;* the water between the wings of the powerhouse—a space big enough to hold the *Queen Mary*—was boiling and welling as if some prehistoric creature were about to surface; the very air seemed to hum in empathy with the huge wires taking the leaping power almost straight up out of the canyon. . . .
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> The bureau's facts and figures—the irrelevant ones issued in situ, at any rate—merely insulate a person . . . the important thing in such an inquiry is not to go in with a shovel to dig up the dirt, but to go in with a kind of Sherlockian "diffidence of scrutiny," to look not so much at the facts and figures as at the spaces and spacing between them, the arrangement, the *religion* of them.

The inquiry Mr. Sibley speaks of here is to find out whether all this construction—transforming the Lower Colorado from a great natural watercourse into a precisely controlled waterworks—was worth doing, or not. We built it, of course, because of what Mr. Sibley calls our "religion." If religion is what binds and holds things together, then faith in technology is our religion, and the Dam is a fine example of how we have put things together, illustrating how we intend the ingredients of our world to work.

Well, to make a long story short, we're going to run out of water. The economists' projections of future need are not matched by the engineers' projections of future supply. Even without the present drought, we wouldn't have enough water in years to come. The drought only brings the emergency nearer:

> This means that either we had better head into a wet cycle damn soon, or we will be approaching the day when there is nothing left in Lakes Powell and Mead but a gurgle. California learned this year that all the reservoir capacity in the world is worthless if you empty it one year and not enough comes in for the next year; and it seems at this point that it is only a matter of time until the desert empire of the Lower Colorado River learns the same lesson. And even now, with the real demand substantially under the theoretical supply, the quality of the water is seriously diminished by overuse what will this problem look like when use is 120 per cent of dependable replenishment? . . . aside from the testimony of John Wesley Powell, there isn't much evidence in the entire history of the Anglo-American settlement of the Colorado River to indicate that anyone ever seriously considered that the Colorado might not have enough water to make seven states (California, Arizona, Nevada, Wyoming, Utah, Colorado, and New Mexico) bloom like the Emerald Isle.

Why didn't we listen to John Wesley Powell, and why did we assume that we'd always have enough water to keep the desert green and an expanding population fed? The threat of water shortage is not a temporary affair, due to a drought that will come to an end. Long ago we figured the river would continue to supply at least 15 million acre-feet, and we committed that much for the states (and a share for Mexico), but now the annual average is only 13.9 million acre-feet. While the flow may of course increase some, this hope consoles Mr. Sibley hardly at all:

> But the truth is, we would eventually have come up against this problem, even if the river ran an average of 20 million acre-feet, due to the nature of our religion—which we of course denied as being a "religion" at all, and thereby never examined for flaws of faith. But our faith in technology, science, and rationalized economy has a profane and tragic flaw: we have assumed an infinity of supply, capable of fulfilling an infinity of demand, if we can come up with the technology of production.
>
> Where we came up with such a notion, God only knows; everyone else in the world is not so deluded.

What will happen if, at long last, we decide that the time has come to cooperate with the inevitable—and use less water, or at least not any more? Well, we'll live in the depressing shadows of unfulfilled expectations:

> Now, if we become such slaves to good sense in the next decade as to refuse to permit any augmentation, the whole design is going to look a little silly—the Lower Colorado River will be comparable to the cathedral at Chartres, where ambition o'erleaped capability, and the money ran out

> with one tower undone, leaving the magnificent thing with an unfinished look, a little out of balance, looking a little funny even . . . but it won't be all that *funny* down in the desert empire. Billion-gallon, billion-dollar aqueducts consigned to running half-empty; reservoirs with their tub rings from the early-Seventies high 200 feet above the diminishing water level; fields turning a dazzling white as the sun carries the overworked water off to the heavens, leaving behind the cruel burden of salt; desalination plants gulping great quantities of power to eke out a thin stream of marginal water . . . and the cities. Oh, the cities, not cities of the desert but the desert negated: dry pools popping up out of the ground, the bleaching unusable deck chairs on the brown grass under the leafless orange tree, the tedious count of gallons to see whether one more shower this month will cost 4 cents or go over the limit for $4 . . . the pleasant climate will not be so pleasant when water can't be taken for granted: it will be a great deal like—well, like living in the desert.

The folly of our "great expectations" has various facets. In Arizona, where the water table keeps going down, big developers have sold thousands of lots which won't have water until the year 2035, according to present calculations. If the state decides to hurry things up for the would-be homeowners, farm lands will have to be "retired" to give them water. Mr. Sibley wonders: "If we ask them nicely will the farmers just go away?"

In a musing conclusion, he says that if we continue to live by our religion, we'll "always need one more river." Soon enough, perhaps, people may begin to take seriously the plan of the North American Water and Power Alliance, which is "a $200 billion project to bring 160 million acre-feet of water a year from Alaska and northern Canada through canals 700 feet wide to reservoirs 500 miles long, to supplement the water supply of thirty-two states." This idea is in the same class of lunacy as satellite farms, and Mr. Sibley fears that we'll just keep on trying to make our religion work. Even though it works less and less with each passing year, we can still make plans and go on trying, figuring out what more water use and more other things will cost. We at least know how to do that, but what we *don't* know is "what it will cost us to stop—what will we *do* with ourselves?"

Well, Lini de Vries' way of involving children in the wonder of their own pulsing blood accomplished basic education they began to take an interest in how their bodies worked. George Sibley has taken on a much tougher job. How many people in the Southwest will continue to be uninterested in how they get their water, until the day comes when *nobody* has enough? People in cities like Phoenix have been slopping along for years, consuming 160 gallons a day, and how would they react to being told that in the semi-arid lands of Africa, the inhabitants manage on eight tenths of a gallon each—one two hundredth as much!

Mr. Sibley has done what he could. His article is intensely interesting, although he has no great proposals on what we ought to do—it's far too soon for that. And it seems obvious that only people who really inform themselves will have any idea at all of what to do. He has begun by spreading the information needed for making some kind of intelligent decision. Other writers and editors are doing similar things. *CoEvolution Quarterly* for the Winter of 1976-77 devoted go pages to watersheds and what they mean to our lives. People—all of us—need to soak in this knowledge for a while. The parallel with Lini de Vries' work is, after all, somewhat limited. The pulse of our blood is very close to us—inside us—but the pulse and flow of water, the element of which we are so largely made, has to be sought out in nature and understood in all its wonderful complexity. We *need* the water, of course, but up to now providing and managing it has been left to people who want to *sell* us things—first, of course, land, and after that all the things that big cities make it possible to sell to the people who live there.

We need, in short, a new religion. The one we have makes no demands on us and no longer works. The religion based on the infinite resources of an infinite planet has no need to

supply any knowledge except to its priest-magicians, the technologists. The true believers couldn't and had no need to study infinity. Nobody can.

But a finite world *has* to be understood. In our society knowing about the sources, flow, and limit of water will some day be almost as important as knowing how our bodies work, what the blood does, and what we need to do to keep the body going. Our instincts help some, of course, to keep our bodies in balance, but we don't seem to have any instinct at all for balanced water use. We have to use *intelligence* for this, and after you read Mr. Sibley it becomes indisputable that there's not much intelligence around concerning water use.

So it's a matter of making beginnings—beginnings that eventually will team intelligence with thirst and start doing what is still possible, whatever that happens to be at the time thirst and intelligence finally get together.

What *might* we have done in the past?

It may be retrospective utopian fantasy to go back to John Wesley Powell for an answer, but there might still be regions where his ideas can be applied. This Civil War veteran—an arm shot off at Shiloh—knew the Southwest at first hand, having been the first man to sail a boat down the Colorado (in 1869), and his study of the area has been called "the most beautiful environmental impact report ever written." Mr. Sibley summarizes:

> In his famous, if unimplemented, *Report on the Lands of the Arid Region of the United States*, submitted in 1877, Powell outlined a proposal for the settlement of the West by irrigation districts of "any nine or more persons" who would draw up their own plan for the irrigation of the area they wished to settle, and be granted title to the land upon completion of their project. The most important aspect of it was that the right to water would inhere in the title of the land. The farmers would be land-and-water owners.
>
> In 1890 Powell amplified on his larger picture for the settlement of arid regions, suggesting "that the entire arid region be organized into natural hydrographic districts, each one to be a commonwealth within itself." And who was to build the dams, dig the canals? Even though he was a government scientist, working on government surveys, Powell was a Jeffersonian to the core here: "I say to the Government: Hands off! Furnish the people with institutions of justice, and let them do the work for themselves."

As Wallace Stegner remarks in *Beyond the Hundredth Meridian* (a life of Powell), "he would have supported federal construction only as a preventive of local grabbing." Twelve years later, in 1902, the basic water law of the country was enacted and the Bureau of Reclamation established to administer it. The law provided that if the Government supplied the water to a farmer, he could have 160 acres and no more (or with his wife, 320). This, in effect, put Uncle Sam in charge, and only today, spurred by diverse forces, is a serious effort being made to enforce the 160-acre limitation, with great outcry against this decision by California and other big farmers who require water for irrigating their vast holdings. (See the *Los Angeles Times* for Oct. 16, 1977.)

Mr. Sibley offers this general comment:

> Powell's specific and radical ideas were never seriously considered: it was too late. Too many mistakes had been made and reinforced in the West by Anglo-Americans totally naive about the nature and problems of aridity. Already, for example, many of the best irrigation sites had been "homesteaded" or otherwise taken over by capitalist entrepreneurs who had put in a headgate or a pump and a set of ditches and were selling "water shares" to farmers whose resultant dependence on the company created a circumstance closer to vassalage than to self-reliance.

The rest is history. But what makes Powell's report especially relevant to recall is the agreement with him in principle of the most thoughtful of planners of today—this agreement and widening recognition of the importance of reorganizing our economic life on the basis of semi-autonomous ecoregions. How does one convince oneself of these things? By reading for a start all three of the Odums (Howard, father and son, and Eugene), Ian McHarg, Peter van Dresser

(*Landscape for Humans*), and any other good writers you can find on regionalism. Then, for thinking about urban planning, there is John F. C. Turner's *Housing by People* (Pantheon, 1976). It is Mr. Turner's conviction, based on years of experience, that planning, which must be a government function when it comes to such vital elements as water supply, sewerage systems, and transport, should be mainly proscriptive—that is, it should *set limits* rather than dictate construction and usage. Not being either users or designers, planners must restrict themselves to opening the way to initiative and responsibility on the part of those who will be the users and also the designers and builders. It is the job of the planner to preserve as much *variability* as possible for independent action. The idea is to provide freedom to build. Turner uses the analogy of a railway line versus a road. There is only one way to get from A to B on a railway. You take a train, and you can get off only at stations. But a road, on the other hand, "can be used by pedestrians, riders of animals, human or animal-drawn vehicles, motor vehicles or bicycles." You can stop on a road wherever you like. Compared to a road, a railway is authoritarian.

Local initiative keeps projects small-scale and controllable. "Power" need not become an ominous factor. Moderate growth can be locally financed. The immeasurable mistakes in the way water has been supplied and people attracted by the million to crowd a naturally desert country would not have been made if the ecoregional awareness of John Wesley Powell had been widespread, and if the decision-makers had themselves been the actual users of the land and the water. There would have been mistakes, but they wouldn't have been immeasurable, and uncontrollable in effect.

The people of an ecoregional community have at least a fighting chance to understand the metabolism of their natural environment—as well, or almost as well, as they understand how their own bodies work. People conscious of natural processes and their requirements have a good chance to live healthy lives in healthy communities. Finding out about water supply and use is the first step in defining these healthful relations.

REVIEW
THE ANARCHISTS OF SPAIN

IT is a far cry from the vision of happy, productive life in small, self-governed communities to the image of the desperate anarchist terrorist, bomb in hand, determined to show the world that certain evils *must* not go on, and ready to die for his convictions. Between these extremes lie all the historical realities of human struggle to realize a social ideal; and these again may be polarized into contrasting positions: resolute, proud, often rigid intransigence, on the one hand—heroic whether right or wrong—and, on the other hand, thoughtful and measured compromises with existing contradictions, in the interest of a partial realization of particular or general goals—again, whether right or wrong.

A reading of Murray Bookchin's *The Spanish Anarch*ists: *The Heroic Years 1868-1936* (Free Life Editions, $12.50) obliges the reviewer unfamiliar with this tortured cycle of Spanish history to fall back on such wondering generalizations. The importance of the book, for most readers, will be its revelation of the intensity of the Arcadian dream, and the extraordinary devotion to this ideal embodied in action by the Spanish anarchists. American readers know little or nothing about this story. Some enthusiasts of Spanish anarchism are said by critics to report its struggles, achievements, and failures through rose-colored glasses. This hardly matters, unless a biased admiration may lead to the strengthening of self-righteous sectarian attitudes. What is mainly at issue is the fact that certain wonderful qualities of human beings emerged and became uppermost in the lives of an astonishing number of Spanish peasants, workers, and often self-effacing leaders for the best part of a century. From such books one learns to become very cautious in declaring what the "uninstructed masses" are or are not capable of. They were not really "uninstructed," of course. An Italian Bakuninist who spoke no Spanish came to Barcelona and Madrid in 1868, "providing," as Mr. Bookchin says, "the catalyst for what was not only the most widespread workers' and peasants' movement in modern Spain, but the largest Anarchist movement in modern Europe." Bakunin's emissary was penniless, his Spanish audiences utterly poor, but the effect of his coming is only now being recognized and beginning to be understood. To know the story of this struggle is to enter into the lives of unnumbered brave human beings, to see through their eyes, and to form, as a result, a revised conception of what people allied in community might achieve, had they the freedom to do so. It is of course no sure thing. But Mr. Bookchin's estimate in some "Concluding Remarks" seems just:

> What was the place of the Spanish Anarchist movement in the larger history of proletarian socialism? What were its possibilities—and its limits? Are the organizational forms developed by the CNT and FAI relevant to radical movements in our own time? Today, long after the Spanish Anarchist movement was destroyed by Franco, these beguiling questions linger on. The movement still haunts us—not only as a noble dream or perhaps a tragic memory, but as a fascinating test of libertarian theory and practice.
>
> Although Spanish Anarchism was virtually unknown to radicals abroad during the "heroic years" of its development, it could be argued in all earnestness that it marked the most magnificent flowering and, in the curious dialectic of such processes, the definitive end, of the century-long history of proletarian Socialism.

One must not be put off by the conventional meanings of "Anarchism" and "Socialism" or fall into the conventional reaction to them. A great vision, however distorted in application, lies behind both ideas. Buddha and Christ were both practical socialists—that is, they did without private property and thought possessions of no importance. The story of communist communities includes much of the social idealism the world has known. The unlikable aspects of both anarchism and socialism may be far more a result of the historical conditions and times in which they emerged than of native defects in the ideal theory of these movements.

For example, historians have tried to understand why the Europeans who came to this country treated the Indians so ruthlessly. Writing in *Ancient Life in the American Southwest* (1930), Edgar L. Hewett has said:

> The European brought to the Indian world (America) a densely materialistic mind developed by ages of experience in human society that could have no other destiny than that which has overtaken it. It was a racial mind formed by immemorial strife in a restricted environment—an environment which fostered distrust, war, destruction, armament for offense and defense. All this was accelerated by the discovery and use of metals. In the chaotic ethnic conditions of ancient Europe, kingship, overlordship, dynastic government, were inevitable, and individual freedom well-nigh impossible. European nations developed one common characteristic, that of using force for all purposes. Small nations fought for existence, large ones for expansion, powerful ones to impose their will on others. Plans were devised from time to time for getting along with one another, but always to fall back after a brief trial upon the primal method of tooth and claw. Such a life tends to disintegration of cultural activities, industry, esthetics, religion and social order.
>
> The European mind was not prepared to understand a race so different from its own character and culture as was the native American. Its disposition was to subdue, to subjugate and to convert.

The point of quoting this is in order to suggest what had been part of the cultural background of the country where the Spanish anarchists tried to realize their social ideals. Mr. Bookchin points out that ancient Spanish rural communities gave traditional dimensions to the anarchists' dream, but the opposition they encountered seems well accounted for by Hewett's description. What about the bomb-throwing and occasional assassinations by the anarchists? These are instances of *Attentat*, what Emma Goldman called "Propaganda by Deed," the justification made for Alexander Berkman's shooting of Henry Clay Frick back in 1892, to draw the attention of the rest of the world to the cruelties visited by Carnegie Steel on the defenseless workers at Homestead. While Frick did not die, Berkman spent fourteen years of his life in a Pennsylvania prison for this deed, and Americans generally turned away from anyone called an "anarchist," in understandable reaction to people said to go about killing other people.

Today assassination or even violence is hardly ever the resort of anarchists; a considerable number of anarchists are anarcho-pacifist followers of Gandhi. But we must still ask: Could there be *any* justification for assassination in the name of the good society of the future? People who thought the assassination of Hitler was a fine idea would probably say yes. What about the violence itself? The most understandable defense of violence may be that of Franz Fanon in *The Wretched of the Earth.* When human beings, he said, are backed into a corner and stomped on by unfeeling, powerful brutes—when their humanity is denied or ignored, their children starved and abused—when, in short, they are treated like *things* by oppressors who cannot even hear rational appeals, they will react with the spontaneous outrage they feel. If a man does not strike back, his oppressor will have succeeded in dehumanizing him.

There is one serious weakness of this argument—taken as argument, not simply description. It can be institutionalized. The crime of injustice, it is claimed, is there—or perhaps everywhere—plain to see. The people responsible for it cannot be reached. They don't hear. They don't care. But they *must* hear, and we shall *make* them care. We shall make all the world hear and care. But if you take the spontaneous human response to brutal cruelty and work it up into a system or a policy, the spontaneity is lost while the violence remains. Before long the violence is cold-blooded. And then you have an army with sergeants to tell the troops whom to kill.

So violence has no excuse. You don't need to excuse the spontaneous, unavoidable reaction of an outraged and humiliated human being: you simply describe the extreme situation in which it is likely to occur. This is not making an excuse.

Organizing violence and writing an apologetic for it is something quite different. Even so, we should listen to the excuses, for example Bertold Brecht's. As a communist poet he wrote—

> Think, when you speak of our weaknesses
> Also of the dark time
> That brought them forth
> . . .
>
> For we knew only too well:
> Even the hatred of squalor
> Makes the brow grow stern.
> Even anger against injustice
> Makes the voice grow harsh. Alas, we
> Who wished to lay the foundations of kindness
> Could not ourselves be kind.
> But you, when at last it comes to pass
> That man can help his fellow man,
> Do not judge us
> Too harshly.

Mr. Bookchin certainly does not judge the violence of the Spanish anarchists too harshly. That it was counterproductive he seems to agree, but he understands why it occurred. As for his book in general, which is not only a fine history but the defense of a Cause, a scholarly critic who openly regards Spanish anarchism as a disaster—because, he implies, it weakened the unity of the Spanish revolution—has said of Bookchin that "he is honest and scholarly enough to allow one to turn his own evidence against him." You can trust such an author—trust, that is, his facts and intentions. Why does Raymond Carr (in the *New York Review of Books* for Oct. 13) regard Spanish anarchism as "a disaster"? Probably because it made the victory of Spanish socialism less likely. If you think that important you may agree with him. On the other hand, the reason the anarchists refused to participate in democratic government (which they declared was inevitably corrupt) has been well stated by Arthur Morgan in explaining the failure of Utopias:

> When the strategy of getting power is their chief interest and exercise, men may become highly skilled at it, as the great majority are not. The power-seekers can study the public mind, its weaknesses and foibles. They can plot their way into strategic positions.

That is why, generally speaking, anarchists will not vote or take part in politics. The importance of Mr. Bookchin's book, so far as we are concerned, lies in its showing of what may happen when a body of people who believe in human freedom and in self-rule, although themselves quite imperfect, formulate a way of realizing their ideal and then try to be true to that way IOO per cent. Discoveries are made by this means, and a movement based upon this conception seems to throw up wonderful sparks—fireworks, you could say—in the form of distinguished and memorable human beings. The story of Francisco Ferrer, an extraordinary educator who founded fifty schools in Spain, and was then officially murdered by Spanish judges who wanted to make an "example" of someone anyone available—because there had been an assassination, should be better known. Anarchists, right or wrong, have people like that among their number—have them again and again. This is something the critics and ridiculers of anarchism need to explain.

COMMENTARY
SLOW DOWN!

FIVE years ago (in his now famous article which appeared in *Ambio* in 1973), Howard Odum pointed out that rapid "growth" occurs in nature only during brief intervals, while normal conditions of life on the planet approximate what is called a "steady state" balance. Economists, on the other hand, are not naturalists and have based their calculations on a fast-growing period. Obviously, it is time for the economists to go to school to the naturalists. Howard Odum also noted that rapid growth characteristically produces a lot of "weeds":

> The early growth ecosystems put out weeds of poor structure and quality which are wasteful in their energy-capturing efficiencies, but effective in getting growth even though the structures are not long-lasting. Most recently, modern communities of man have experienced two hundred years of colonizing growth expanding to new energy sources such as fossil fuels, new agricultural lands, and other special energy sources. Western culture, and more recently, Eastern and Third World cultures, are locked into a mode of belief in growth as necessary to survival.

The ecologists, who learn from nature, know more than the economists. They base their conclusions on natural process while the thinking of the economists is confined by theories developed from a quite brief cycle of growth. Fortunately, there are now economists who are thinking like ecologists and getting a hearing for their views. An interdisciplinary group including economists said (in the *Wolfcreek Statement*) in 1976:

> As economist Nicholas Georgescu-Roegen points out, the current economy is primarily concerned with the rapid depletion of the low entropy mineral and energy reserves of the earth, with little concern for the future. "Up to this day, the price of technological progress has meant a shift from the more abundant source of low entropy—the solar radiation—to the less abundant one—the earth's mineral resources. . . . The faster the economic process goes, the faster the noxious waste accumulates. For the earth as a whole there is no disposal process of waste. Baneful waste once produced is there to stay, unless we use some free energy to dispose of it in some way or other."
>
> Reversing the trend of high technology, high energy consumption, will not be easy, and the economic costs in the short run will be high—given the added expense of the initial capital intensity of renewable technologies. But the alternative is far worse—without a conversion to a sustainable conservation economy, the economic process seems destined to destroy itself, as the remaining reserves of concentrated resources are mined in an ever more costly spiral of untrammeled growth.

In other words, as Eugene Odum says, *Slow down!*

CHILDREN
. . . and Ourselves
SOME FAINT INKLINGS

AS gift from a friendly reader we have a book published in 1954 by The Children's Theatre Press, Cloverlot, Anchorage, Kentucky—*Twenty-One Years with Children's Theatre* by Charlotte E. Chorpenning—of which we should like to be able to say that people can find it in any good library, except that they probably can't. What the book shows is that you learn more about children from an activity which draws out their innate capacity, inventiveness, and delight than from any other relationship.

Children's Theatre is an area about which we know practically nothing. Mrs. Chorpenning may be famous, for all we know. But a more important point is that she ought to be famous. She was head of production for children at the Goodman Memorial Theatre in Chicago, an enterprise which played annually to about 45,000 children. Early in the book is an account of her first introduction to an audience of children ranging from kindergarten to eighth-grade age:

> How can the same play reach all of them at once? Before me, a tiny girl was clinging to her mother's waist she hid her face in her mother's lap. Myriad later repetitions of this behaviour taught me that she was afraid of the strange place filled with strange people. In the same row another youngster of about the same age was shouting and jumping with such vitality that her mother was put to it to quiet her! Farther back two boys apparently about twelve were accurately expressing their age level in muscular contest restrained to hand, arms and shoulders; nearby two boys of the same size were quietly studying their programs. Throughout the house there was varied talking, laughing, wriggling, in terms of three years to thirteen. Accumulated lore regarding "age levels" abruptly became a question. Right then I began to watch. Right then *the children began to teach me.*

We made a small test, calling good-sized libraries in Southern California, both children's and adults' departments. Nobody had ever heard of Charlotte Chorpenning. No doubt we didn't call the *right* library, but we didn't want to borrow the book, just find out if it *could* be borrowed. Who was—is —Charlotte Chorpenning? In a Foreword the man who probably ran the Goodman Memorial Theatre at that time says of her:

> She began learning about children in the theatre at an age when most people had long grown incapable of assimilating a new idea. She is endowed, however, with a special gift which is still rarer. She is not an adult "who understands children." These so very often understand nothing. There is an alchemy working in her spirit which allows her to enter the world of a child as a companion, as a sharer of the child's life, without divesting herself of the maturity which allows her to store up, analyze and study the child in its world. This is a rare combination of gifts, so rare indeed that I know of no one else who shares it in any significant degree. The reader can at best study only the externalization of the process and perhaps get a faint inkling of the integrated child-mature spirit which lies at the heart of it.

What publisher these days would put copy like *that* (the last sentence) in the jacket blurb?

This is the sort of material which runs all through Charlotte Chorpenning's book:

> Through the years I pondered upon this relation of the stage picture to the identification in the child audience. I began to try to define the nature of identification and its practical uses in a play specifically for a child audience. All forms of drama, theatre, movies, radio, television, opera, depend for their success on a certain amount of identification. But the identification of children is especially complete. It is intense both in story playing and in watching. I remember watching a young story-playing group at Hull House. A little Queen was cradling her imaginary baby in her arms as she discussed with the other young actors a point of disagreement. One of them challenged her, "Show us what you mean." Carefully she laid her invisible baby on a nearby chair, to act out for them her idea. Weary from standing, I presently sat down on this chair. A scream from the Queen! "You're sitting on my baby!" I rose, hushing the baby, and placed it in her arms. She quieted.

There's more:

It was long after this that I came to realize that this identification with some one character on the stage is basic to both the pleasure and to the effectiveness that the children get out of watching a play. In the performance of *Cinderella* the depth and intensity of identification varied. Some imitated her posture. Some cried. One older boy shook his fist at the scolding mother. Throughout the house eyes showed suffering, mouths half opened above the forward-leaning bodies. A woman rose, leading out a very young child crying pitifully.

I slipped after them, watching, to learn why the child cried. I heard the woman say, "But it isn't *your* mother, darling." The child sobbed, "I know, Mommie, but things ought not to be like that! They ought not to happen that way!"

"Drawing a general conclusion from a single example!" I gasped to my bewildered self. "Abstracting, that's what she's doing. So young as that!" and left them.

Who needs Piaget! Or rather, this is the sort of grainy observation which illuminates Piaget.

Now comes some obvious common sense, followed by a decision that doesn't seem obvious at all, yet just right:

While I was still experimenting in writing and directing with the problem of too much talk, another matter thrust itself on my attention: at certain spots in each play we were creating a wriggling audience. I took this up with both researchers and cast. Our first thought was, "We must have stopped the story!" How? In a few cases this proved to be true and was easily remedied. But to our dismay, in other cases our changes failed to keep the audience in the story. It is amusing now to recall the variety of changes we tried on the stage to no effect. We held meeting after meeting of discouraged discussion. We were blocked! Then one day one of us burst out, "Well! No child was meant to sit so long!" We stared at each other, then suddenly unanimously laughed, and somebody added, "Why, of course! They all need exercise."

The solution we found was what I learned to call "exercise-spots." In each play thereafter we provided an exciting scene, where it seemed likely that the children would have sat still as long as such perpetual motion could be expected to pause. It was always a spot which drew from the children appropriate action: clapping, shouting, jumping up and down, sitting or standing.

There is also depth:

Our audiences do not only experience our plays; they may also have the urge to live out what they see! This urge may spring into action immediately or bury itself in their deep unconscious, a buried memory, to emerge unrecognized in adult days and ways. An incident that occurred outside of the Goodman underlined this. I was directing a play for adults. The actors fell into discussion over the importance of a given line. An advocate of its importance astonished me by saying, "Yes, but things don't end because you forget them." He turned to me as Director, "Isn't that true, Mrs. Chorpenning? Don't you believe that?" "Yes, I guess I do," I said to him—and to myself, "A line straight from our *Rumpelstiltskin!* And he's using it in his thinking!" The rehearsal went on. After a later rehearsal I asked him:

"Did you ever go to the plays for children at the Goodman?"

"Oh yes. Every one when I was a kid."

"Do you remember any of them?"

"Yes." He paused. *"Cinderella* and *Rumpelstiltskin* most of all."

"Do you remember any special scene from either?"

"Well—there's one where Rumpel comes to claim the baby."

"So?"

He described much of the scene.

"Do you remember any of the dialogue?"

"Oh no! But I remember how he stood and how she cried. Oh boy! What that did to me!" Then he laughed.

I did not laugh. This incident gave me a jolt. It was my first recognizable experience of the fact that buried memories may be active in our own audiences even while remaining buried. It underlined my responsibility to our children's audiences; many other different situations stressed this importance of unconscious memories. I saw that I must know more about buried memories and the urge to live them out, before I could use them intelligently.

FRONTIERS

Instruction from Nature

THE British monthly, the *Ecologist,* founded in 1970, burst into American consciousness with its January 1972 issue, later available as the widely read book, *Blueprint for Survival.* The thinking of a score or more reputable scientists on the mistakes we have been making in our relations with the natural world, and on the changes that would be most likely to work well for everyone, including the planet, comes into focus in concentrated form in twenty-two pages. (An annual subscription to the *Ecologist* for Americans costs $14.50—address: 73 Molesworth Street, Wadebridge, Cornwall, U.K.)

The August/September 1977 issue should have even closer attention here. It presents ninety-six pages on "The Future of America," constituting the best over-all intelligent, readable, and persuasive account that we have seen of what is wrong with the practice and direction of American life, telling what needs to be done, when, how, and why. Facts appear as facts, certainties as certainties, and probabilities as probabilities. Likely guesses are marked as such. In terms of present human knowledge, the case made for enlightened change seems quite complete. The astonishing thing for many readers may be, not how little, but how much is known concerning what we ought to do. The writers, incidentally, are mostly Americans, including such increasingly well-known authorities as Eugene Odum, David Pimental, Wilson Clark, Kenneth Watt, Sam Love, and David Morris. Areas of discussion include land, climate, food, health, population, resources, and energy. A section titled "The American Alternative" proposes both general theory (ecoregions) and nitty-gritty practice (restoration of neighborhoods and self-reliant autonomy in cities). All we can do here is illustrate with some examples the kind of intelligence found throughout this issue of *Ecologist.* (A single copy can be bought for a pound—$2 would probably be enough to cover postage also.)

The following is from Eugene Odum, who gives some of the commonsense conclusions which result from ecological studies. A major instruction from nature is *slow down!*

> Not only do natural laws rule against having speed and efficiency at the same time but they also make it difficult to have high quality and large quantity simultaneously. Increasing the quantity of resources increases the potential for rapid growth, but such growth may come at the expense of the quality of the individual and/or the quality of life for the individual. In the extreme, fast growth can become disorderly like cancer and threaten survival of life itself. The eutrofication (enrichment by pollutants) of natural lakes provides an illustration of the quantity-quality dilemma. When nutrients from sewage are put into the lake the number of organisms and the rate of organic production increases but "weed-type" organisms such as small "scummy" algae and "trash" fish replace the diatoms, attractive water plants and game fish. If enrichment is intensified more and more kinds of organisms are eliminated even as those which remain multiply like the out-of-control cells in a cancerous organ. One can not be certain that the discovery of a new unlimited and cheap energy source, granting it's possible, would really be a boon for humankind. It might just be "too much of a good thing" that would convert the world into one big, overpopulated cesspool, an undesirable "whole earth" if ever there was one.
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> All in all, then, the judicious solution to the energy, food, water or what-have-you crises is to cut down on haste in order to reduce waste, increase efficiency, and buy time to improve the quality of life; at the same time, without undue haste, we can look into our options for adjusting supply and demand. To act on such common sense judgment requires not only science and technology dedicated to such goals, but, more difficult to achieve, reordered political and economic objectives which today are much too strongly geared to promote growth and waste, or quantity *"uberalles."*

Thinking drawn from analogies in nature, as here, stirs the reader to find other parallels. We have "weed-type" reading matter everywhere, for example, which creates not only solid waste problems but polluted mind problems. How much

does it cost to have to have all those futile arguments about "television violence" and "pornography"? Surely our Supreme Court and other agencies have more important matters to occupy their time. Do those arguments, like doctor's bills, get into the Gross National Product? Probably. What we pay for is always a "product" of some sort.

Scientific fact is really not at issue in any of these informing discussions in the *Ecologist.* Sooner or later, the writers get to the way people think as the only serious obstacle to intelligent change. After a survey of the rate of exhaustion of critical mineral resources by our voracious economy, Preston Cloud says:

> No law of nature says that these trends have to be continued. Yet the eventually disastrous notion of growth *per se* as an intrinsic good is deeply embedded in the current folklore of this nation and society. It served us well at one time and the inertial forces to keep it growing are great. But the still continuing, though slowing, growth of both populations and of material overconsumption by the already affluent could be further decreased and even reversed if there were a general recognition of the need and a will to do so. Therein lies at once the most frustrating aspect of the present and the best hope for the future.

David W. Orr and Cecil R. Phillips, who write on a "Sustainable Energy Society," say almost the same thing:

> The primary obstacles which block the realization of such a future are not technological in nature. The technical fixes of conservation, such as better equipment design, additional insulation, use of small vehicles, and improvements in industrial process can easily be *technically* coupled with emerging renewable energy technologies. The stumbling blocks are almost invariably institutional and economic. . . . Reversing the institutional trends offers the only valid hope of rapidly developing renewable technologies and conservation approaches.

Reversing institutional trends means helping people to think differently about their lives. There is no other way, and material such as the contents of this issue of *Ecology* seems an ideal way to give that help.