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OUR UNCREATED IDENTITY

HOW, in what terms, do thoughtful persons think about the circumstances of human life? If we go back in our own history a little more than two centuries, we find Thomas Paine, an Englishman who had arrived on our shores in November, 1774—coming at the suggestion of Benjamin Franklin—fourteen months later, in January, 1776, publishing *Common Sense*, "one of the most brilliant pamphlets ever written in the English language." He wrote it also at the suggestion of Franklin, who had asked him to compose a history of the Anglo-American controversy. Paine did much more—he wrote, as Bernard Bailyn has said, "a passionate tract for American independence," voicing "some of the deepest aspirations of the American people on the eve of the Revolution" and evoking "with superb vigor and with perfect intonation, longings and aspirations that have remained part of American culture to this day."

Paine, one could say, called a great nation into being. Yet his inspiration had deeper roots. Years later, in Paris, in *The Age of Reason*, he wrote:

> I saw, or at least I thought I saw, a vast scene opening itself to the world in the affairs of America; and it appeared to me that unless the Americans changed the plan they were then pursuing and declared themselves independent, they would not only involve themselves in a multiplicity of new difficulties, but shut out the prospect that was then offering itself to mankind through their means.

The spirit of this comment—that through the establishment of a new nation in America, all the world would benefit—was repeatedly expressed. Richard Price, although in England, declared in his *Observations on the Importance of the American Revolution* (1784) that it would open up "a new prospect in human affairs" and begin "a new era in the history of mankind." When the Revolution was over the American Philosophical Society (of which Franklin was a founder) offered a prize for the best plan for education in the United States. While a number of plans were submitted, two were selected as best and in one of these, by Samuel H. Smith of Philadelphia, the author predicted that by means of education in America virtues would arise which would cause man to view "the whole world as a single family," and would lift "the mind to an elevation infinitely superior to the sensation of individual regard, superior to the ardent feelings of patriotism."

This was the conception and promise of the American nation at the close of the eighteenth century—its purpose as expressed by the men who had much to do with its birth. So, at least, they conceived it at the time. But would anyone have the brassy presumption to say the same thing today? Back in 1959, the editors of *Life* invited Edwin Halsey of the Claremont (California) Graduate School to do an article on America's National Purpose—what it is or what it should be. The professor wrote the article, but *Life* didn't publish it, for reasons that will become plain. His work did come out in the Pomona College *Student Life* in May, 1960, and later appeared in the radical pacifist journal, *Liberation.* Dr. Halsey began by saying:

> Defining America's national purpose in 1960 is like trying to legislate "the American way of life." The whole project like many projects—is misconceived. The attempt is "un-American" according to our best standards. Maybe we should say that the purpose of the American nation-state today is to become obsolete.
>
> One of the troubles with being an editor of *Life* is that one loses the ability to think freely. For that one has to remain an amateur and a person of no public importance—a *non*-V.I.P. Meanwhile *Life* editors think up debates like "What should be our national purpose?" It never crosses the back of their minds that nations do not or should not *have* purposes, that nationality today is almost a synonym

for moral purposelessness. A modern nation is a large group of people who have forgotten the purpose of life. Insofar as these people can share in a *national* purpose, it is nefarious, involving massive retaliation and public hatred and tribal religion. National leaders behave like juvenile delinquents. . . .

Let us stop inventing organizations with fictitious "characters" and "personal rights," such as our modern corporations and nation-states are supposed to have. We are seeing things that aren't there. These organizations are merely the idols of our modern polytheism, the beasts in a jungle of unbalanceable power which destroys the world-wide brotherhood of individual men. Having put our credulous faith in engineers and generals, even in entertainers, we are now a lonely, threatened crowd.

Another facet of our cultural purposelessness was exposed by Paul Goodman, who wrote in *Growing Up Absurd:*

Consider the men and women in TV advertisements, demonstrating the product and singing the jingles. They are clowns and mannequins, in grimace, speech, and action. And again, what I want to call attention to in this advertising is not the economic problem of synthetic demand, and not the cultural problem of Popular Culture, but the human problem that these are human beings thinking like idiots; and the broadcasters know and abet .what is going on: *"Fruitily, bubbily, Hoffman's is dubbily good as good can be!"* Alternately, they are liars, confidence men, smooth talkers, obsequious, insolent, etc., etc.

As a footnote demonstrating political neutrality we might add here a short poem by Bertolt Brecht, called "The Solution," written after the East German revolt of 1953:

After the rising of the 17th June
The Secretary of the Writers Association
Had leaflets distributed in the Stalinallee
In which you could read that the people
Had lost the Government's confidence
And could only win it back
By redoubled efforts. If so, would it not
Be simpler for the Government
To dissolve the people and elect another?

As Dr. Halsey might put it, either the people or the nation-state is obsolete, and one must choose.

Another sort of comment on the decline of the nation-state—in this case the Soviet Union—was made by Czeslaw Milosz in the *Listener* (Feb. 18, 1960). He speaks of the longing for regeneration and moral awakening throughout the world, then says:

In a sense, we entered a post-apocalyptic period after the most acute variety of the belief in the millennium, the Stalinist doctrine, had toppled down in the fifties. What remained of it is an empty shell. My friends from Poland compare Mr. Khrushchev to a priest who does not believe in God. Mysterious forces toss mankind, and as yet our knowledge does not suffice to define them. The processes ascribed to "the decadence of the West" seem to be more or less universal, and a sample of blackness taken in Paris or London has quite a broad meaning—if we are ready to go deeper than appearances.

He turns to the resources "which help some of us to live."

First, comes a feeling of wonder at the extraordinary achievements of our contemporaries, accomplished in the midst of such chaos and cruelty that Gibbon's chronicles of Rome seem to us pale. By achievements I mean less science and theology than certain peculiar applications of them which enlarge our humanistic possibilities. There has never been such curiosity about the whole past of Man on the Earth, nor so many signs of exploring civilizations in their sinuous growth. We enter a sesame of our heritage, not limited to one continent. And this is accessible to the many, not only to some specialists. For instance, there has never been so great an interest in the art and music of the past. A price has to be paid, and recorded music or reproductions of paintings have their reverse side in cheap "mass culture." There is also a danger of syncretism. Yet a new dimension of history, understood as a whole appears in all its interdependences. We deplore the dying out of local customs and local traditions, but perhaps the rootlessness of modern man is not so great, if through individual effort he can, so to say, return home and be in contact with all the people of various races and religions who suffered, thought, and created before him.

Milosz is not polemical; he is looking for the seeds of a civilization that will have lost the motives of nationalism and become simply human in its intentions; and, of necessity, he finds only

the longings and hopes of people, nothing in realized form. Yet from such seeds another kind of future may some day be grown. Another writer, the Canadian scholar Northrop Frye, has similar qualities in his work. In 1967 Prof. Frye, who teaches in the University of Toronto, was invited to give the Whidden Lectures, which are presented annually, the occasion in 1967 being the centennial that year of Canada's existence as the first federal union in the British empire. It is one of the five self-governing nations of the British Commonwealth.

In his first lecture, Prof. Frye said that he would talk about Canada in relation to the rest of the world. He explained why:

> It is widely believed or assumed, that Canada's destiny, culturally and historically, finds its fulfillment in being a nation, and that nationality is essential to identity. It seems to me, on the other hand, quite clear that we are moving towards a post-national world, and that Canada has moved further in that direction than most of the smaller nations. What is important about the last century, in this country, is not that we have been a nation for a hundred years, but that we have had a hundred years in which to make the transition from a pre-national to a post-national consciousness. The so-called emergent nations, such countries as Nigeria or Indonesia, have not been so fortunate: for them, the tensions of federalism and separation, of middle-class and working-class interests, of xenophobia and adjustment to the larger world, have all come in one great rush. Canada has—so far—been able to avoid both this kind of chaos and the violence that goes with the development of a vast imperial complex like the U.S.A. or the U.S.S.R. . . . My present task, I think, is neither to eulogize nor to elegize Canadian nationality, neither to celebrate its survival nor to lament its passage, but to consider what kinds of social context are appropriate for a world in which the nation is rapidly ceasing to be the real defining unit of society.

Here, we see, Prof. Frye is wholly in agreement with Dr. Halsey—the nation-state is today becoming obsolete. Our true heritage is not that of a single people, but the cultural endowment of the whole world. To be "national," now, is to be virtually barbarous, and it is becoming possible to say this out loud. Very nearly all perceptive persons of learning and experience are saying it. We see what the "nations" have done during the past hundred years, and we draw back in shame and disgust. The wars of the twentieth century are a blight on human memory, and the future wars the nations seem to be getting ready for seem practical equivalents of blindly determined suicide. This alone is enough to explain the heightened self-consciousness and critical spirit of the present, although unknown evolutionary factors may also be at work.

These feelings are reflected in the literature and the arts which Northrop Frye sets out to examine. As he puts it in his first lecture:

> Culturally, the primary fact about the modern world, or at least about our "Western" and "democratic" part of it, is that it is probably the first civilization in history that has attempted to study itself objectively, to become aware of the presuppositions underlying its behaviour, to understand its relation to previous history and to see whether its future could in some measure be controlled by its own will. This self-consciousness has created a sharp cultural dialectic in society, an intellectual antagonism between two mental attitudes. On one side are those who struggle for an active and conscious relation to their time, who study what is happening in the world, survey the conditions of life that seem most likely to occur, and try to acquire some sense of what can be done to build up from those conditions a way of life that is at least self-respecting. On the other side are those who adopt a passive and negative attitude, responding to the daily news and similar stimuli, aware of what is going on but making no effort to understand either the underlying causes or the future possibilities. The theatre of this conflict in attitudes is formed by the creative and the communicating arts. The creative arts are almost entirely on the active side: they mean nothing, or infinitely less, to a passive response. The subject-matter of contemporary literature being its own time, the passive and uncritical attitude is seen as its most dangerous enemy. Many aspects of contemporary literature—its ironic tone, its emphasis on anxiety and absurdity, its queasy apocalyptic forebodings—derive from this situation.

What is wrong with the modern world? Many things could be said, but there is a summation of most of them in Frye's idea that we have become prisoners of a nervously pursued progress. As he says in one place:

> Technology cannot of itself bring about an increase in human freedom, for technological developments threaten the structure of society, and society develops a proportionate number of restrictions to contain them. . . . The same principle affects science itself. The notion that science, left to itself, is bound to evolve more and more of the truth about the world is another illusion, for science can never exist outside a society, and that society, whether deliberately or unconsciously, directs its course. . . . I am saying that no improvement in the human situation can take place independently of the human will to improve, and that confidence in automatic or impersonal improvement is always misplaced.

In the arts and literature, Frye suggests, the contemporary imagination sees its works in a mirror.

> Looking into the mirror is the active mind which struggles for consistency and continuity of outlook, which preserves its memory of its past and clarifies its view of the present. Staring back at it is the frozen reflection of that mind, which has lost its sense of continuity by projecting it on some mechanical social process, and has found that it has also lost its dignity, its freedom, its creative power, and its sense of the present, with nothing left except a fearful apprehension of the future.

Northrop Frye is a cheerful writer, but far from being an optimistic one. For a more structured presentation of his thinking one might turn to a later book, *The Stubborn Structure* (the title taken from Blake's *Jerusalem* in a line referring to language—Cornell University Press, 1970), in which he develops the idea of the Myth of Concern. The myth, he shows, is the foundation of our aspiration, the universal aspect of our longings and hopes.

> If there is no moral concern for all humanity, and only concern for one's own society, then concern is reversed into anxiety, which is the vice of concern, as indifference is the vice of detachment. . . . The force that creates the myth of concern drives it onward from the specific society one is in to larger and larger groups, and finally toward assimilating the whole of humanity to the ideal of its dialectic, its concerned feeling that freedom and happiness are better for everyone than their opposites. All national or class loyalties, however instinctive or necessary, are thus in the long run interim or temporary loyalties: the only abiding loyalty is one to mankind as a whole.

At the conclusion of his last lecture in *The Modern Century* Mr. Frye speaks of this vision, foreseen by Paine, but now "buried underneath the America of hustling capitalism." He goes on:

> This buried America is an ideal that emerges in Thoreau, Whitman, and the personality of Lincoln. All nations have such a buried or uncreated ideal, and no nation has been more preoccupied with it than Canada. . . . One of the derivations proposed for the word Canada is a Portuguese phrase meaning "nobody here." The etymology of the word Utopia is very similar, and perhaps the real Canada is an ideal with nobody in it. The Canada to which we really do owe loyalty is the Canada that we have failed to create. . . . I should like to suggest that our identity, like the real identity of all nations, is the one we have failed to create. It is expressed in our culture, but not attained in our life, just as Blake's new Jerusalem to be built in England's green and pleasant land is no less a genuine ideal for not having been built there. What there is left of the Canadian nation may well be destroyed by the kind of sectarian bickering which is so much more interesting to many people than genuine human life. But, as we enter a second century contemplating a world where power and excess express themselves so much in stentorian lying, hypnotized leadership, and panic-stricken suppression of freedom and criticism, the uncreated identity of Canada may be after all not so bad a heritage to take with us.

It is only by such means that the vision continues.

REVIEW
THE CHEMISTRY OF ECOLOGY

A BOOK that has come our way is *Environmental Issues in Chemical Perspective,* published in 1980, by Thomas G. Spiro and William M. Stigliani, issued by the State University of New York Press, State University Plaza, Albany, New York 12246—price $24.50. We don't know why this book was sent to MANAS; possibly it has had little or no attention from reviewers, except in specialized journals. It is not a book that a reviewer who writes for the general reader will approach with any fervor. The contents are exceedingly technical, with chemical equations on every other page, and while the writing is clear enough, the terms are formidable. Yet the questions discussed are in principle inviting enough. The authors, Thomas Spiro, who teaches chemistry at Princeton, and William Stigliani, a research chemist with the Atmospheric Sciences Research Center at the State University of New York—both men with obvious qualifications—say in their preface:

> The aim of this book is to make sense of the environmental debates by examining the natural cycles that human activities may be upsetting. The issues involved are very difficult. Should the plutonium breeder reactor be developed? Do fluorocarbon aerosol cans pose a serious threat to the atmosphere's ozone layer? Are streams fouled with detergent phosphates? Is saccharin a dangerous food additive? None of these questions has an easy answer, but in following the arguments pro and con, it helps to understand the natural balances that are threatened.
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> . . . This book is structured in four sections: energy, atmosphere, hydrosphere, and biosphere. These divisions are for our convenience; environmental problems do not fall into neat categories, and we can expect them to pop up in more than one place in the book, as in real life.

Since energy is the heart of the matter for both life and its environment, the book begins with solar energy and its transformations after it reaches the earth. Recited are facts well known to scientists but seldom known or remembered by lay readers. What, for example, are the origins of our fossil fuels? The answers probably include many things we didn't know before, such as—

> Petroleum and natural gas deposits are of marine origin. Photosynthesis in the oceans is estimated to produce 25 billion tons of reduced carbon annually. Most of this is recycled to the atmosphere as carbon dioxide, but a minute fraction settles to the bottom, where oxidation is negligible. This biological debris is covered by clay and sand particles and forms a compacted organic layer in a matrix of porous clay or sandstone. Anaerobic bacteria digest the biological matter, releasing most of the oxygen and nitrogen. As the sediment becomes more deeply buried, the temperature and pressure rise. Bacterial action decreases, and organic disproportionation reactions are thought to occur, with the release and accumulation of large quantities of methane and light hydrocarbons. The heavy organic compounds remaining are thought to be carried along, as an emulsion, with the water that is squeezed out of the compacted sediment. The oil could be trapped in the overlying porous layers. Gas and petroleum deposits are thought to have developed in this manner over a period of about a million years.

The origin of coal may be a little more familiar:

> Coal [is] composed of the remains of plant matter from the huge, thickly wooded swamps that flourished 250 million years ago during a period of mild, and moist climate. Woody plants are made up of lignin as well as cellulose and protein. Lignin is a complex, three-dimensional polymer that contains aromatic groups. The building units are coniferyl and sinapyl alcohol for lignins from coniferous and deciduous plants, respectively. While aerobic bacteria rapidly oxidize cellulose to carbon dioxide and water when the plant dies, lignin is much more resistant to bacterial action. In swamps, the lignin accumulates under water, compacting into a substance called peat. Over the geological ages, the peat layers metamorphosed into coal.

We skip now to the latter part of the book, which is on pollution. Here is a brief paragraph on the pollution resulting from feed lots:

> With respect to pollution from animal wastes, it has been estimated that farm animals in the United States produce about 20 times more wastes than does the human population. As long as this is spread over the land as fertilizers, it constitutes a resource rather

> than pollution, but increasingly the production of animals is being concentrated in feed lots and poultry farms, and the animal wastes are concentrated along with them. The biological oxygen demand of the waste from a feedlot with 10,000 cattle is equivalent to that of the sewage from a city of about 45,000 people. As mentioned early in this book, this animal waste could be converted into an energy source by methane digestion.

In the section on food production attention *is* given to the Green Revolution. During the 1960s plant scientists showed that higher yields of grain would result from using new strains of wheat and rice with shorter stems that stand up better against wind storms and heavy rain, if they are fertilized. Great increases in grain production in Mexico, Asia, and North Africa resulted from the Green Revolution. However—

> The years 1972 and 1974 produced a severe setback to the Green Revolution . . . with significant production declines and widespread famine. The main causes were bad weather and the petroleum crisis. Not only was industrial fertilizer too expensive for third-world farmers, but so was the fuel for operating irrigation pumps. Many farmers elected to return to the traditional plant varieties, which are hardier and more resistant to drought than the high-yielding varieties.
>
> The experience produced much discouragement about the concept of the Green Revolution, but the real problem appears to be over-reliance of the world agricultural system on petroleum and natural gas deposits.

A statistic that will probably surprise most readers is this: "It has been estimated that the weight of the world's insect population exceeds that of its human inhabitants by a factor of 12." The threat of insects to both food crops and humans (as carriers of disease) takes the authors to a disquisition on the wonders accomplished by DDT, but no mention is made of Rachel Carson, anywhere in the book, and the authors seem to feel uncertain about its adverse effects "over the long term." While its use in the U.S. has been banned since 1973, applications of this chemical had been declining before that, because the insects developed an immunity to its poisonous effects.

Here is a little item that should be of interest to amateur potters:

> Pottery glaze contains lead compounds to give it the proper flow characteristics. If the glaze is baked on at a high enough temperature in a properly operating kiln, the lead is immobilized and does not easily leach out. If the temperature of the firing is not high enough, however, the lead leaches out into liquids contained in the pottery. Even a hot cup of coffee from a poorly glazed mug can contain significant concentrations of lead. Particularly dangerous are acidic liquids stored in crockery. The acid in fruit juices or soft drinks greatly accelerates the leaching of lead and there have been tragic cases of lead poisoning from this source.

Another kind of poisoning took place in Minamata, Japan, in the mid-1950s. This tragedy is of interest because of the complexity of the cause. The first victims of what turned out to be mercury poisoning were the town's cats, after which nervous disorders in humans were traced to mercury.

> It was then discovered that the fish in the bay were heavily contaminated with methyl mercury. The Minamata Chemical Company is located on the shore of the bay, and subsequent investigation showed that it was discharging large amounts of mercury but no methyl mercury compounds. The missing link between the discharge of inorganic mercury and the presence in the fish of the organic mercury derivative, methyl mercury was later filled in by chemical researchers, who discovered that microbes that live in the absence of air and produce methane—the same ones we described earlier in connection with methane digesters—can also convert mercury to methyl mercury. It is the methyl mercury that is passed on up the food chain. . . . At each level of the aquatic food chain, the mercury builds up strongly, . . . This is true even in uncontaminated waters. . . .
>
> The victims of the Minamata disease had diets consisting mainly of fish taken from the polluted bay. These fish were subsequently found to have mercury concentrations of 27-102 ppm. Soon after the Minamata disaster, it was discovered that many fish in the Great Lakes had high levels of mercury, and important commercial fisheries had to be closed as a result. Since then new technology has been introduced in almost all mercury-using plants, and this has eliminated most of the mercury in their effluents. However, in many localities the damage

has already been done, since the large amounts of mercury already dumped in sediments will continue to be a source of methyl mercury for many years to come. No effective way of cleaning up these sediments has yet been found.

The effect of methyl mercury poisoning is nerve and brain damage, which may become irreversible. One case of this sort resulted from the treating of seeds with organomercurial compounds. These compounds become harmless if the seeds are planted, but when used for food they are poisonous. A shipment to Iraq of treated seeds which were made into flour and baked in bread led to many fatalities. Such treatment has since been banned.

While this book was apparently written as a textbook for students of ecology—each section ends with a set of questions—it contains much material of general interest to the reader who will take the trouble to find it. The knowledge provided is impressive in its extent.

COMMENTARY
THE PATH TO PEACE

WE haven't said much of anything in MANAS about efforts at "arms control," mainly because what is called arms control seems largely fraudulent and misrepresentative. Arms, in the present, don't need control—they need to be abandoned, so far as we can see. However, in the latest newsletter from the Rocky Mountain Institute (P.O. Drawer 248, Old Snowmass, Colorado 81654), a rather special sort of think tank headed by Amory Lovins (with help from his wife, Hunter Lovins, formerly of the TreePeople in Southern California), arms control is considered in a way that deserves wide circulation. Following is a substantial extract:

> Just as modern agriculture is failing, so are traditional approaches to arms control. Not one treaty between the U.S. and the U.S.S.R. has made either country relinquish *any* weapon system which its possessor really wanted. Each arms-control treaty has been both preceded and followed by an intensive buildup of both nuclear and non-nuclear arms. Today, American military spending alone is costing nearly ten thousand dollars per *second*, yet is not visibly making anyone more secure, either militarily or economically. Traditional arms controllers have become managers of an unabated arms race. The Freeze campaign swayed some public opinion but has not eliminated any weapon system nor changed the public's concept of security. The anti-bomb movement capitalized on a fear of apocalypse, but has neglected Americans' real and pervasive fear of Soviets. Neither effort has crystallized an alternative vision within the public consciousness. Why? Because, we think, Americans will reject time and time again the reactive, gloomy, and limiting in favor of the visionary, optimistic, and expansive. The Strategic Defense Initiative illustrates the power of visionary politics. The emotional value of a supposed "nuclear umbrella" is overwhelming any concerns about infeasibility, cost, treaty abrogation, and risk. Equally visionary *alternative conceptions of security*—practical and cheap to implement, simple to explain, heartening in mood, and authentically speaking to people's everyday experience—are the critical missing link in the search for peace. It is this need which Rocky Mountain Institute's Security Program seeks to address.
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> To do this, we are exploring the fundamental nature of security through a new lens: *advanced techniques for the efficient and sustainable use of resources.* Our end-use/least-cost methodology points to actions which can make a society truly secure. This approach builds on empirical fact and market economics, and should appeal to both left and right, Consider, for example, two links between energy and security:
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> 1. Just *one year's* budget for the Rapid Deployment Force, if well spent on weatherization, would about eliminate imports of Mideast oil to the United States.
>
> 2. Just the *increase* in annual U.S. energy supply from renewable sources since 1979 exceeds all the Arab oil which Americans burned in 1984.
>
> These examples illustrate how transcending a military perspective can reveal practical security options which are stabilizing, peaceful, consensus-commanding, and highly cost-effective. Building on such resource-efficiency insights in many fields, we plan to construct a comprehensive approach to building real security, in the sense of its dictionary definition: *freedom from fear of privation or attack.*

The Rocky Mountain writer now turns to the psychology of safety:

> What makes people safe? What makes people *feel* safe? Real security starts at home: with reliable and affordable supplies of necessities (water, food, energy, shelter, materials), being healthy in a healthy environment, having a sustainable local economy and a legitimate system of government, enjoying basic human rights and certain cultural and spiritual assets. (Of course, anyone who enjoys these elements of Life, Liberty, and the Pursuit of Happiness can keep them only by ensuring that others have them too: that is, one becomes more secure by making one's neighbors more *secure*, not less, whether on the scale of the village or the globe)

Hal Harvey is in charge of Rocky Mountain's Security Program. He has a long string of credentials, but what the program seems to add up to, based on the foregoing, seems just plain common sense. That, and the indifference of a Thoreau to threats of violence, which probably ought to be called fearlessness. Yet common sense is a strong ally of fearlessness in a world which needs to recognize that nobody can win a

nuclear war, and that in modern war everybody loses. The fact is, we have outgrown war from every point of view. We live in an age when even a general or two have become pacifist.

If more people would begin simply repeating this sort of common sense, more other people would stop listening to the arms-controllers and Star Warriors, and begin to use the sense they were born with, realizing that we live in a world in which no one really wants war, except those maddened by injustice. If we began focusing on ways to do justice, and demanding that it be done, even the government might start using a little common sense.

Decentralization, bioregionalism, efficiency in using what we have, a sensible consideration for others, and a refusal to use threats to get what we want, or think we should have—these are the means to peace. No one needs an advanced degree to figure this out. In fact, advanced degrees usually stand in the way of the operation of common sense. If we consult both the facts and the experience we have, and then apply common sense, no one would need to talk about peace any more: we would have it.

CHILDREN
. . . and Ourselves
EDUCATION AT HOME

HOW many parents are teaching their own children, and how many children are being educated in the home? No one knows the answers to these questions, but an educated guess would put them in the tens of thousands. Meanwhile, *Growing Without Schooling* No. 46 reprints from the *Detroit News* for last June 24 the following report, indicating the rapid growth of the home-schooling movement:

> . . . Parent-run schools still enroll only a fraction of Michigan's 1.9 million pupils, but their ranks have swelled in the last 18 months, according to new estimates by the state Department of Education.
>
> The state now has at least 1,200 home schools—more than four times as many as in November 1983, when the department first surveyed the phenomenon and found 273 home schools. Moreover, officials suspect that a least one third to half of the alternative classrooms operate in defiance of state law requiring attendance at a certified school. . . . The new state report, based on an informal telephone survey of the state's 57 intermediate districts, also reveals that most local officials don't prosecute parents who teach children at home. Only about a dozen court cases were pending. . . .

At about the same time the Racine (Wisconsin) *Journal Times* reported:

> . . . Carl Carmichael of the state department of public instruction said about 600 families operated home schools in Wisconsin in 1984. There were 94 the previous year. He attributed the huge increase to a 1984 change in state law that took away the state's and school districts' leverage in monitoring home schools. . . .

Florida, according to the Jacksonville *Times* Union, reports from 1,300 to 1,500 home schools in Florida, identified by the state Department of Education, and a Florida politico said that there are doubtless twice that number that officials don't know about. Oregon, a *GWS* reader writes to say, is exploding with home schools. In one district, Lane County, which has about 450 students in grades one through twelve, at least ten families are home schoolers. His family, this correspondent says, was the only one four years ago.

So much for growth.

A letter from a home-schooling mother in Pennsylvania, after recounting experiences with her children at home, and describing other interests, ends by saying:

> One day I'd like to do a story or research on how *mothers'* lives have changed since they began homeschooling. I have learned, in the past six years, solely as a result of that first *"No,"* and the embrace of homeschooling to
>
> —drive a car
> —speak in public
> —separate from a painful family situation
> —tell people they cannot abuse me
> —finally face the typewriter without gritted teeth
> —draw (I was always "no good" at art . . .)
> —disagree with authority figures
> —recognize arguments that are illogical
> —I like my body (dance, yoga, exercises)
> —trust my perceptions (I was always soooo ready to believe that I had misunderstood) . . . .
>
> The biggest thing I learned was to believe in myself. That's what got me the job I adore.
>
> The woman with no college—just a high school diploma (who also happened to be a reading addict)—who raised five children who are polite, curious, and smart—the woman with no business background, no typing or shorthand—is a reporter.
>
> The other thing I learned, finally after all these years, is to trust my children. I don't even do the bare minimum of school work any more—don't have time to police it. We talk, and write, and read, and share. That's enough.

A mother in California writes about her three-family community:

> We have a community of three families, with a total of nine children, ages 10 on down. We are in rural California, near a small town, but well secluded in the woods, so there is much freedom to run and play and make noise during the day. My husband holds down a (relatively) high-paying technical-writing job in the city four days a week to keep the

mortgage paid, the other two families work locally. Only two of the families have actual school-age kids.

The seven-year-old daughter taught herself reading with old books a city school district gave away. "At first, I would sit with her and help her when she wanted to read to me. But then, after the birth of my third child, when I didn't have a lot of time, I would notice her reading to herself."

About the other children:

My 4-year-old son is the naturalist of the family. He is soon going to know and recognize more edible wild plants than I do. For him, living on a rural homestead is a little boy's HEAVEN of tools and meaningful everyday work of chopping wood, sawing, hammering, using picks, shovels, mattocks, mauls, screwdrivers, needle-nose pliers—you name it. He's just beginning to reach the age where he's showing a bit of caution and responsibility around these tools. . . He has an enormous capacity for energetic work/play, and can actually really be a help on occasion. He follows my husband around like a shadow on weekends, doing all the splitting, plumbing, wiring, fencing, garden digging as best he can alongside. Inside, he and his older sister both love to help me cook. . . .

The baby is a 17-month toddler, just beginning to talk. . . . Her big sister watches her some while I package dried seaweed with one of the other mothers on a part-time basis, which is good for both of them. The other family's 10-year-old girl is watching *their* baby, too, and all the kids are in the play-yard, making elaborate dirt cakes, pretend gardens, wildlife montages, plant exhibits, or what-have-you. For me, the seaweed packaging is a break from mothering, and part of a fun cottage industry as well.

Unfortunately, it looks as if this whole wonderful setup might dissolve in a few months, due to political pressure. It isn't legal for us all to be living here together, due to zoning. . . . It's particularly frustrating to have this happen, because our school board climate is favorable. . . . At least we'll be able to homeschool alone, but having the other children around is wonderful.

A mother in Kentucky writes:

We continue with our relaxed approach to homeschooling. . . . One day a week we all take music lessons from the same instructor. He is a jewel. . . . Deborah (16) is learning viola and though she hasn't been playing more than a year and has had only six months of weekly lessons, Mr. Sloane feels she could try out for a local community orchestra. Rebekah (14) takes flute and piano. . . . Abigail (11) takes clarinet and is nuts about it. After one lesson Mr. Sloane told her that she was doing more than a small group he had recently begun teaching at school. . . . I am learning the violin and have rediscovered the joys of the piano. I took lessons for eight years as a child but have never played much as an adult. I try to play every day and really miss it when the schedule won't permit. I'm thrilled with my progress on the violin; the girls and I are playing quartets together and having a marvelous time. Anyone who believes that children must be motivated and encouraged to develop discipline and good study habits hasn't been around kids who are learning because they want to. I have never suggested to any of the girls that they should practice and yet they rarely miss a day, even if the day has been so full that they have to play late in the evening. I'm not surprised by their dedication; after all, no one tells me to practice either.

These few quotations are only a small fraction of the material in every issue of *Growing Without Schooling.* There are six issues a year, edited by Donna Richoux. Subscription is $15. Send it to GWS, 729 Boylston Street, Boston, Mass. 02116.

FRONTIERS

Transforming a Man-made Moonscape

KENYA is an African country with a good stretch of coast on the Indian Ocean. To the north is Ethiopia and the Sudan. Uganda is on the west and Tanganyika borders on the south. Lake Victoria is shared with Uganda and Tanganyika, while Mt. Kilimanjaro rises to 19,590 feet close to Tanganyika. The chief port is Mombasa. The capital is Nairobi.

Since 1954 the Bamburi Portland Cement Company has been excavating limestone a little north of Mombasa, leaving acres of splintered coral and silica refuse as the remains of the extraction process. Writing in the *Christian Science Monitor* for Aug. 8, 1985, Edward Giradet says, "It is difficult to imagine anything having grown in the landscape created by the excavation—or anything ever growing there again." Yet what amounts to a forest park is now in evidence, and Giradet tells the story of the man, Rene Haller, a Swiss agronomist, who made it grow.

Haller showed the reporter "a 70-acre experimental reforestation project that, only 14 years ago, was also a dross of coral and silica."

> Today, it is a varied woodland of 100-foot trees, teeming fish ponds, and lush meadows. A wasteland has been transformed into a harmonious refuge with a public nature trail. Along that trail there are more than 130 species of birds; countless butterflies, beetles, and other insects; antelope, bushbuck, eland, oryx, several crocodile, and a hippopotamus called Sally.

Haller, Giradet says, came from Tanganyika (now Tanzania) in 1959, hired by the cement company to create a farm that would grow food for the quarry workers. Before long they were cultivating maize, sorghum, vegetables and fruit, and later raised poultry. "He refuses to use insecticides or chemical fertilizers," Giradet says. The real story began in 1971, when the Bamburi Cement Company, embarrassed by what the public was saying about excavation operations which could be seen from the highway, asked Haller to do something about it.

> "Basically, they wanted me to hide it—build a wall around it," he muses. "But when we began to show results, proving that private enterprise could do something worthwhile about the environment, they got excited."
>
> The problem was how to get something to grow on salt-encrusted rock with absolutely no soil and few nutrients. "For many hours, I strolled through the oldest part of the quarry looking for hints among the rocks, to find out what types of plants could tolerate such harsh and inhospitable conditions," recalls Haller.
>
> He found two species of ferns, some bulrushes, a pluchea bush, and a number of young casuarina trees, a few of which had already grown to respectable size. It was the latter, he said, that gave him hope. The tree grows well in coastal areas, survives salty spray, and colonizes easily on windblown sands. In addition, its root system fixes atmospheric nitrogen, compensating for an otherwise nitrogen-deficient soil.

But a balanced forest ecosystem would require more than one species.

> Nearby, he planted an experimental plot with 27 tree species collected from the coastal region, digging holes in the rock with a crowbar and using several shovelfuls of cattle manure as fertilizer. He also persuaded the company to lend him a bulldozer to dig the first of many fishponds where he carried out aquatic studies in the brackish groundwater.
>
> The casuarina and a conocarpus tree from Somalia grew best of all. Encouraged, Haller and his men planted some 3,000 trees. They grew quickly—an extraordinary seven feet high in the first 12 months. In the following years, Haller's crew put in 40,000 more trees.

The casuarina has long, needle-like branchlets which fall continuously, making a dense matting on the limestone floor. Wanting to hasten decomposition of this network, Haller brought in a local species of millipede—known as "Mombasa trains"—which ate the needles and left droppings which became soil. "It was like," Haller said, "putting together a huge jigsaw puzzle." He carried about with him seeds of different grasses,

herbs, and bushes, sowing them randomly and leaving the rest to "natural selection."

> The acidic humus started to dissolve the limestone. Earthworms, introduced to the newly developing system, turned over the loam and soil, while termites helped digest the hard cellulose of dry branches.
>
> At one point the rapidly growing forest faced disaster. Haller found heaps of tell-tale sawdust at the base of some of the casuarina trees whose foliage was turning yellow. A certain species of beetle larva was attacking the trees.
>
> A pesticide would have done the job, Haller comments. "But I wanted to see a biological answer." Apparently by chance, he discovered eagle owl pellets containing the remains of the beetles. "We introduced one of the owls, which in turn attracted four more, to hunt the pest." The damage was halted and the trees slowly recovered.

As time passed, other plants and trees appeared, some brought in, others coming as volunteers. The animals were introduced to complete the ecological balance. "The idea," Haller said, "is that every plant and animal must contribute to the environment. No freeloaders. They've got to earn their keep." An example is the casuarina, now sold for lumber, it being replaced by other species.

Giradet remarks that trees which grow well in the Bamburi (cement company) area "would be ideal for reforestation and fuel purposes in desert areas, particularly around refugee camps." They survive on only 20 inches of rain a year.

Thinking about what had been accomplished in this region made so desolate by mining the limestone, Haller said:

> It's absolute nonsense to say that a situation is hopeless. . . . There is always a way of working with nature, helping her along. . . . It need not even be expensive or complicated. One just needs a bit of imagination.

Haller is now, Giradet says, an independent adviser to the United Nations Food and Agriculture Organization and other organizations. He is expanding his experimentation with alternative wasteland utilization and "harmonious" agricultural projects. The Bamburi system, he maintains, shows that it is possible to operate a viable concern while contributing to environmental management.