

NOT AS SOLUTIONS

TODAY the air is filled with the din of solutions. Book after book comes out to tell us what we must do to reduce our troubles. There are the full-dress utopian programs, the elaborate technological fixes, and the "change-of-heart" necessities which must come, it is said, before anything real can be accomplished. We have all these painful problems, elaborately catalogued, along with various remedies that will, it is claimed, make the pains go away.

For at least fifty years, certain public figures have been declaring the need to restore religious belief. Why? Because we want more orderly lives, less crime on the streets, less disorder in the cities, less intrusion on our lives of the upsetting and unexpected. Religion, it is said, is good for people and they should have more of it. The assertion will bear some thinking over. Historians will point out that it represents a distinctively Roman point of view. Varro, famous literateur of the first century B.C., declared that only three sorts of theology are possible: the poetic, mythic sort of theology found in Homer, the quest for truth pursued by philosophers, and civil theology to which conformity is required by the State. Only civil religion, the *Pontifex* Quintus Scaevola declared, is of any social utility, and it is not true. Scaevola made it known that in his opinion "religion was only for the uneducated."

This is obviously an administrator's point of view. If religious people behave well and are orderly, then the administrator will think well of religion, regarding it as some kind of "resource" in times of unrest. A considerable number of people would answer the question, "Am I my brother's keeper?" in some such terms, prescribing religious belief as the indicated medicine for social ills. Often individuals think this way about their own lives. Back in the fifties, the winner of an essay

contest on "Faith and Reason" declared that he was basically agnostic, then added:

Naturally, my circumstances may not always be so fortunate as they are at present. My health might break down, I might despise me, and I might have experiences for which there is no explanation in the textbooks. And should any or all of these things happen, I should not be surprised if changes were to occur in my beliefs and I were to feel an attraction for religious faith.

It would be natural to comment that this young man, should he be overtaken by such disasters and turn to religion for "solutions," would probably find out nothing of importance, although an "adjustment" of some kind might be obtained. Yet his candor has behind it an element of truth. People *do* wonder what may have been missing from their lives when disaster strikes. And they may find things out as a result. But not if their search is merely for a pain-killing "solution." Religion, it seems just to say, is not concerned with "solutions" but with meanings. One who develops a sense of meaning for his life may find his troubles eased, but not because their causes go away. He learns to see his experience in another light—but this is cold comfort for one who expects solutions, whose conception of the way things ought to be depends upon remaining undisturbed in his accustomed habits.

Religion, of course, has many meanings, but the sort of religion that is advertised as a "solution" has one fundamental dogma on which all its claims depend: the Vicarious Atonement. This is an idea under the terms of which people can escape punishment for their "sins"—or, in naturalistic terms, avoid the penalties for breaking the laws of nature. Humans, it was taught for long centuries, are weak and sinful, and there is no hope for them except through belief in an intervening Saviour who will pick up the tab for their offenses. Stated so baldly, few might now be

found to embrace such a belief, but all through the ascendancy of Christianity orthodox believers accepted it, as though moral accounting can be altogether different from everyday accounting of mundane transactions. Neither a borrower nor a lender be is not a theological maxim.

But with the general decline in other-worldly belief, caused partly by the rise of science and technology, a replacement was found for the agency which offered "solutions"—the savior would now be scientific knowledge. So spokesmen for the Enlightenment declared. Yet the psychology remained unchanged. Invention instead of intervention would get us out of trouble. The experts would find a way. In other words, we can go on as we are now, because a solution will surely be devised. We don't have to alter our way of life; we like what we're doing now, and any real change would be terribly upsetting to business, and even to banking and probably foreign policy. Indeed, who would look after the needs of the military if we decentralize and learn to manage without so much costly transportation and so many fuel-dependent machines?

This is the voice of the Establishment, of the dominant opinion-makers of our time. It is, on the whole, a well-mannered rationalist voice which has replaced the harsher arguments of Dostoevsky's Grand Inquisitor (in *The Brothers Karamazov*), but the message is exactly the same. As politicians seeking office will tell us, the people can't be expected to be heroes. If we are to stay in office in order to do good, they quietly explain, we have to pretend that what the people want is really good for them, instead of attempting to get them to "face the facts." They don't like facts and they won't be *orderly* unless they have their way. In short, if what is right is not politically feasible, then it isn't really right and you can forget about all those constructive changes you have in mind. It's no use expecting the people to start being heroes. Which is exactly what the Inquisitor told Jesus back in the fifteenth century.

Dostoevsky gave his critique of the "solutions" approach, and it has never been successfully contradicted, but only ignored. A parallel analysis is available today, although in very different language, in the work of John Todd. It may have more hope of acceptance, now that Nature is testifying. In *Tomorrow Is Our Permanent Address*, written with his wife, Nancy, he says:

One of the ironies of human history is that most civilizations from the ancient hydraulic ones of the great river valleys through colonial cultures to modern industrial societies have based their support on practices antithetic to the course of nature. All of them have violated principles that, although not yet fully understood, have proved extraordinarily successful for all other forms of life. Civilization has not yet considered devising a culture that emulates the processes of nature. We should like to propose that culture can be transformed through such an emulation.

The fundamental first step is a comprehension of the structure of the complex systems upon which societies depend. We are learning that the structure of a system and not its coefficients determine its ultimate behavior. By structure we mean the fundamental mode of organization of a system structure is the morphology or basic design that creates the patterns of operation. Just as the skeleton shapes the morphology of the human, modern industrial societies have structural components around which they are organized. Roadways and their transport vehicles represent a major structural element.

By coefficients we mean that which is not itself structural per se but which unites with a structural element to produce an effect. Coefficients are parameters or constants for given elements under a set of circumstances. In the above example the roadways, vehicles, and the petroleum-energy dependency of the system are structural, whereas the size or efficiency of the internal-combustion engines and the amount of petroleum required to run them represent coefficients. Put in another way, the first set of underlying elements is intrinsic, whereas the second set affects the timetable of events. . . . The discovery that structure determines the behavior of a system, if true, will have an enormous impact on all levels of design. It implies that the behavior and fate of a system are determined by its organization and

structure, and not by its rate of expression or its coefficients. . . .

The structure of the contemporary world assumes a foundation of limitless supplies of cheap petroleum. This assumption underlies fossil-fuel-fired generating plants attached to central power networks, and industrial agriculture which uses between five and twenty calories of petroleum-derived energy to put one calorie of food on the American table. . . . Structure determines fate. Coefficients vary rates and relative dominances within a system. The physicist Amory Lovins has suggested that if structure and not system coefficients determines behavior, as he believes, our present civilization is fated and will prove unsustainable.

There is a lot more about structure in this section, showing that the economic and industrial development of the country has been in terms of isolated profit-centers, not coordinated services in logical relationships in behalf of human need. What relates enterprise in America? Money, or the cash nexus—nothing else.

Now comes John Todd's criticism of what we are doing now:

Unfortunately, at the same time that structure is beginning to be seen as pivotal, science and technology are addressing themselves almost exclusively to coefficients. For example, in the transport sector, automobile engines are being designed for greater efficiency. The goal is to double gas mileage over that of a few years ago. This is a coefficient-related activity on the part of technologists. At no point is the transport structure itself, including the highway system and the fuel base, being seriously questioned. Because we have built a society to which this structure is essential, and because, as we know, it will collapse without the automobile, the larger question of transport remains taboo for scientists and designers. . . . Architecture addresses itself to coefficients; structure is left intact. Combining the various functions through integrative design, which could lead to a vision of buildings as "ecologies," is not being considered. This is true in agriculture and in many other key areas of human endeavor. By focusing on the coefficients, science and technology are buying time for society. The ability of contemporary science to improve technology but not alter the fundamental structural society helps explain the drive to develop nuclear power so that there will be enough power within this century to

sustain the existing industrial base. A blind attempt is being made to sustain a system that is unsustainable with its highly centralized, interconnected energy grids and its massive use of energy. Genuine alternatives are not readily conceivable. An alternative, which would require a radical restructuring, could lead to more humanly based techniques and environmentally restorative methods of providing for the needs of people. At the present we are trapped in an intellectual cage, created by our own science. . . .

If it is assumed that coefficients are only buying time, the vital support elements of our society must be totally redesigned. For a transition to take place, the new processes being created must be allowed to coexist within the present structure. . . . It is perhaps the first time in history that people are being asked to create the landscape of the future. . . . New kinds of structure imply unprecedented levels of synthesis, for part of the necessary reintegration of the human experience must be a heightened awareness of the natural order upon which we depend. People and process must become one.

This is one way of seeking meanings instead of being beguiled by the short-term "solutions" available in raising the power of the coefficients. Karl Polanyi, in his famous paper, "Our Obsolete Market Mentality," presented another, related analysis more than thirty years ago. He wrote:

How to organize human life in a machine society is a question that confronts us anew. Behind the fading fabric of competitive capitalism there looms the portent of an industrial civilization, with its paralyzing division of labor, standardization of life, supremacy of mechanism over organism, and organization over spontaneity. Science itself is haunted by insanity. This is the abiding concern.

No mere reversion to the ideals of a past century can show us the way. We must brave the future, though this may involve us in an attempt to shift the place of industry in society so that the extraneous fact of the machine can be absorbed. . . .

To shift in natural science from one conceptual framework to another is one thing; to do so in the social sciences is quite another. It is like rebuilding a house, foundation, walls, fittings and all, while continuing to live in it.

Where will we get the stamina to rebuild our house while living in it? From what impetus will

we obtain the resolve to seek "new levels of synthesis"—as John Todd puts it—"a heightened awareness of the natural order upon which we depend," in order that people and process may "become one"? The question is almost wholly rhetorical, since no one has an answer to so far-reaching an inquiry. Yet it needs to be raised in order to show the dimensions of the problem.

One thing can be said. It is necessary to look for meanings, first, before adopting what we hope will be "solutions." The short-range technological fixes may give us a little time, but they also support false hope that we need not change our standards and our goals very much. To increase the efficiencies of a system (structure) that must eventually collapse is neither intelligent nor even rational, but this, as John Todd points out, is exactly what the managers of our society are doing, and preaching to their constituency. One has only to read the papers to learn their arguments in detail.

Yet we live in a time when, at last, some of the fundamental questions are being renewed. The issue of the meaning of human life has taken on reality for an increasing number of people. Why? Because, as Aldo Leopold explained, we are learning that "the conqueror role is eventually self-defeating."

Why? Because it is implicit in such a role that the conqueror knows, *ex cathedra*, just what makes the community clock tick, and just what and who is valuable, and what and who is worthless, in community life. It always turns out that he knows neither, and this is why his conquests eventually defeat themselves.

As this realization grows, the inquiry into meaning becomes intense. Solutions are concerned with how to get what we want and how to avoid what we don't want.

Meaning involves a much more comprehensive inquiry. The search for meaning begins with the question: What are human beings here to do on this planet? Have they a function that has been left out of their calculations, thus

far? Do they have (ecological) *duties* that they ought to perform? Does man have some Promethean project that he has been neglecting, and are his problems, his disharmonies, his dilemmas and his endless conflicts no more than symptoms of his complex misoccupation?

These are questions which, paradoxically, call for both investigation of and freedom from the past. The bonds of the past that we need to become free of are well described by the best writers of our time—Lewis Mumford, Ivan Illich, Wendell Berry, E. F. Schumacher, William Boyd, Theodore Roszak, John Todd, and various others. The past that needs investigation is made up of the high philosophies which relate man to nature in terms of Promethean role and transcendental purpose—the Upanishadic and Buddhist teachings, Neoplatonic ideas as found in Plotinus and Porphyry, and the climax of European speculation in the *Monadology* of Leibniz.

The paradox of this double relation we have with the past is illuminated by a passage in Ortega's *The Modern Theme*, in which he considers the past as a psychological prison:

The psychology of peoples dominated by ancestral ideas and arrested, through one kind or another of historical malnutrition, in a permanently infantile stage is a curious study. One of the most primitive peoples in existence is the aboriginal Australian. If we investigate the way in which the intellectual activity of this people functions, we find that on being confronted with any sort of problem—for example, a phenomenon of nature—the Australian does not look for an explanation which is enough of itself to satisfy intelligence. In his mentality, to account for a fact such, for instance, as the existence of three rocks standing together on a plain, is to recall a mythological story which he has heard ever since he was a child, and according to which in antiquity, or, as the Australians say, in *alcheringa*, three men who were once kangaroos, were changed into the stones in question. This explanation satisfies his mind precisely because it is not a reason or a thought which can be verified. . . . The strength of reason is born of the conviction that it produces in the individual. Now, the Australian does not experience what we call individuality or, if so, he experiences it in the form and to the extent that a

child does when it is left alone, abandoned by the family group. The concept of individuality and everything based upon it only produces terror in him; it is a synonym, for him, of debility and insufficiency. Solidity and security are to be found only in the communal condition, whose existence is anterior to that of any individual: for the latter finds it ready-made for him as soon as he awakes to life. . . .

This is the traditionalist state of mind which has been operative in our own Middle Ages, and which directed the course of Greek history up to the seventh and Roman to the third century B.C. The content of these epochs is naturally much richer, more complex and more delicate than that of the mind of a savage; but the type of psychic mechanism and its method of functioning is the same. The individual invariably adapts his reactions to a communal repertory which he has received by transmission from a venerated past.

Of the emergence of a sense of independent individuality, Ortega says:

The subjective personality begins by feeling himself to be an element of a group, and it is only later that he proceeds to separate from it and achieve little by little the consciousness of his singularity. The "we" comes first, and then the "I."

In our own time, the "I" has had long innings. Many are of the persuasion that there is no other view. But by forgetting or losing sight of the "we"—which includes our fellows and all other life and intelligence on the planet—all the competitive "I's" turned the place of common habitation into an increasingly disordered mess. Lately we have been made emphatically aware of these effects of rampant individualism, and feel pressed on in the search for meaning. High achievement requires that we rise to individuality, but other possibilities and obligations demand that we begin to see ourselves in others, and others in ourselves—a conscious recovery of the "we" point of view. Understanding this scheme of development may lead to recognition of a fundamental meaning of human life. And we may learn it best from conscious participation in the return to community.

REVIEW

AN INVOLVING BOOK

NOW and then, in spite of the commercial haze, a publisher says something about a book he is giving currency that rings true and demands to be quoted. We have an example. The publisher is St. Martin's Press and the spokesman is Thomas L. Dunne, senior editor, who tells how, after reading a few pages of John Janovy's *Keith County Journal*, he phoned the author in Nebraska, where he teaches something to do with why birds get sick or stay well, and bought the manuscript. Reluctantly, on the jacket flap, Mr. Dunne compares Janovy's book with a couple of other good ones, then says that the author has a knack "for involving his reader with the lives of the lowliest creatures as well as the human beings who surround them." This seems just right.

Keith County Journal reminded Dunne of Thomas's *Lives of a Cell*, although he says: "I almost always wince when I see a new book casually compared to classics or recent bestsellers since no book is truly 'like' another." In fact, such comparisons ought to unsell us, rather than attract, because they usually show that the publisher doesn't know what he is talking about, and worse, doesn't care. But it is true enough that a really good book will make you think of other good books, and this doesn't mean that you "compare" them. Dr. Janovy's way of writing—rather, his way of thinking—made us think of the work of another naturalist, John Burroughs, and something he wrote in *Pepacton* on "Nature and the Poets." He began:

I have said on a former occasion that "the true poet knows more about Nature than the naturalist, because he carries her open secrets in his heart. Eckermann could instruct Goethe in ornithology, but could not Goethe instruct Eckermann in the meaning and mystery of the bird?" But the poets sometimes rely too confidently upon their supposed intuitive knowledge of nature and grow careless about the accuracy of the details of their pictures. I am not aware that this ever was the case with Goethe, I think

it was not, for as a rule the greater the poet, the more correct and truthful will be his specifications.

Burroughs wrote this about a hundred years ago, and his readers may have smiled in casual agreement, but today the matter is far more serious. Is it indeed possible for poets to know more about birds than ornithologists? These are days of anxious epistemological speculation and wondering: How do we know what we know, and do we really *know* it? Nothing could be healthier than asking such questions, although the consequences, in the form of half-baked answers, may multiply our confusions instead of clearing the air. Yet the question needs to be asked. It needs to be asked because it puts us all—poets and ornithologists included—on our own, which is where we belong. Our shaky civilization has been built upon a lot of precocious certainties which are breaking down, and we have little idea what to do. Well, the first thing to do, no doubt, is to get rid of our borrowed specialist certainties and begin asking ourselves Socratic questions, in an effort to get back to the bedrock of meaning in our lives.

After several pages of inspection of how various poets interpret or misinterpret "Nature," Burroughs gets to his point:

The poetic interpretation of nature, which has come to be a convenient phrase, and about which the Oxford professor of poetry has written a book, is, of course, a myth, or is to be read the other way. It is the soul the poet interprets, not nature. There is nothing in nature but what the beholder supplies. Does the sculptor interpret the marble or his own ideal? Is the music in the instrument, or in the soul of the performer? Nature is a dead clod until you have breathed upon it with your genius. You commune with your own soul, not with woods or waters; they furnish the conditions, and are what you make them. Did Shelley interpret the song of the skylark, or Keats that of the nightingale? They interpreted their own wild, yearning hearts. The trick of the poet is always to idealize nature—to see it subjectively. You cannot find what the poets find in the woods until you take the poet's heart to the woods.

And so on. In passing, we note that the poet *needs* the woods, Shelley his skylark, Keats the nightingale. But what does it mean to say that

"We carry within us," as Sir Thomas Browne wrote, "the wonders we find without"? Well, some of the poets try to explain, which brings us to John Janovy, who is both poet and naturalist.

He tells of the country of which he writes:

Ackley Valley is owned by the Haythorn Land and Cattle Company, and Waldo Haythorn is the patriarch of that organization. Headquarters are near the town of Arthur, in Arthur County, several miles north of Arthur Bay. There is an art gallery in Arthur, and a city park bordered with very large cottonwoods. A person normally lowers his voice when entering the town of Arthur. There is no local ordinance against loud talking or cursing, but ten feet around that last curve of the highway into town there is a feeling that a person should be quiet, that one is in a very special place that belongs to someone else. It's that kind of a town especially on a very hot midsummer Sunday afternoon. Maybe the fact alone that Waldo lives there causes one to lower one's voice in respect for the place. One also has total respect for the man who owns the Ackley Valley Ranch, even if that man is only a legend to you, for the man who owns Ackley Valley Ranch also owns the long-billed curlews and the great blue herons and the box turtles and the grasshoppers of Ackley Valley, and that man has given you access to the ranch. That man is also said to cut hay with a mower drawn by Belgian horses.

That's the way this writer gets into his subject, which here is curlews.

One step into the Ackley Ranch and you meet the curlew.

There is no search, no effort required, only your physical presence. The curlew brings it to you full force. The curlew throws off all the fear and seclusion you think should be a part of the personality of so large, so beautiful, so dramatic, and oh-so-vulnerable a bird in a world shaped by the Bureau of Reclamation. The curlew screams at close range, the curlew sets its wings at every angle you've ever seen in the most impressive pictures, the curlew dives, it circles, it comes back for more, and all you have to do is wave your arms and it does everything all over again twice as powerfully. It hardly helps to leave.

The curlew follows you down the highway screaming, the curlew flies in front of your van looking over this shoulder, then that, staying just far enough ahead, as you pick up speed, to scream back

at you. Down the highway a couple of miles you discover you've hardly been breathing. There is something special about a place where there are *always* curlews. Even if you never meet the grasshoppers of Ackley Valley, the curlews have given you far more than you bargained for.

The total lack of fear in an animal that should be above all fearful of what humanity has to offer is an impressive demonstration. It makes one wonder long and hard about what is to be gained by fear, especially what is to be gained by fear of forces that should be great and much beyond our control. I have some very serious doubts that the long-billed curlew would allow an earthen dam to be constructed over fissures upstream from where it nests. I have very serious doubts that the long-billed curlew would allow a nuclear waste disposal facility to be built on the Ackley Valley Ranch, regardless of how much the curlews needed the jobs. I have this almost uncontrollable urge to find every human on this earth who has ever feared to think about and to conclude, speak up and out, and act on environmental issues and lead that human by the hand to the Ackley Valley Ranch in June. I also have this feeling that the curlews approve of a man who is said to still cut his hay with a mower drawn by Belgian horses.

Does he really mean that the curlews would all gang together and screech away the bulldozers and the bureaucrats from the project of a nuclear waste facility? Sorry. Of course not. But he might mean, perhaps without knowing it, that if there were enough people who felt about curlews what he feels about them, there wouldn't be *any* such problems. Such people would have no part of a nuclear waste facility—not within twenty-five thousand miles of where they live—which is, as we recall, about the circumference or perimeter of the earth. This is a way of saying that John Burroughs was—is—right.

John Janovy muses and muses. His thought is like the waving, gyrating tendril of a plant, seeking the sun or some structure to cling to near the surface of the earth—an organic sort of thinking, in other words. He thinks, like all poetic thinkers, in analogues. And after all, this is a pretty scientific way of thinking. Books on the scientific method will tell you that analogues are the origin

of scientific hypotheses—they get you going in what may turn out to be the right direction.

A final musing:

It is hard not to feel an integral part of this planet after discovering that snails pioneer into the wilderness, wrens volunteer for onerous tasks, swallows know the benefits of cities, and even spring-fed creeks can assume qualities we thought only humans possessed. At philosophical times, reflecting on lessons, a person very often wonders about the forces that brought about this earth and its inhabitants. Since Keith County has taught us we are not so very different after all from snails and swallows, we must wonder whether the plan that brought us here together might not be more general, more all-encompassing, than we realized. Those kinds of thoughts lead to irreverent places, iconoclastic places, nontraditional places, all-encompassing places of the mind. Suddenly my student and I look different to one another. . . . Thinking philosophically about our close relationships with fish and snails, but standing in the South Platte River staring at one another, we can only question whether these two guys are in fact made in the image of the force that built the planet, whether we are really so unique and different from our animals and our earth.

The answer, without doubt, is both no and yes.

COMMENTARY

EARLY CHRISTIAN BELIEF

THE Gnostic Gospels—"some fifty-two texts from the early centuries of the Christian era"—found by an Arab peasant in 1945 near the town of Nag Hammadi, in upper Egypt, have been in process of translation for years, and with publication by Elaine Pagel of *The Gnostic Gospels* (Random House, 1979) a bright and often disturbing light has been thrown on the sources of Christian belief. The differences between orthodox beliefs and gnostic teaching are striking, the author says. She writes in summary:

Orthodox Jews and Christians insist that a chasm separates humanity from its creator: God is wholly other. But some of the gnostics who wrote these gospels contradict this: self-knowledge is knowledge of God; the self and the divine are identical.

Second, the "living Jesus" of these texts speaks of illusion and enlightenment, not of sin and repentance, like the Jesus of the New Testament. Instead of coming to save us from sin, he comes as a guide who opens access to spiritual understanding. But when the disciple attains enlightenment, Jesus no longer serves as his spiritual master: the two have become equal—even identical.

Third, orthodox Christians believe that Jesus is Lord and Son of God in a unique way: he remains forever distinct from the rest of humanity whom he came to save. Yet the Gnostic *Gospel of Thomas* relates that as soon as Thomas recognizes him, Jesus says to Thomas that they have both received their being from the same source. . . .

Does not such teaching—the identity of the divine and human, the concern with illusion and enlightenment, the founder who is presented not as Lord, but as spiritual guide—sound more Eastern than Western? Some scholars have suggested that if the names were changed, the "living Buddha" appropriately could say what the *Gospel of Thomas* attributes to the living Jesus. Could Hindu or Buddhist tradition have influenced gnosticism?

In her conclusion, Elaine Pagel remarks that while gnostic ideas survived only as "a suppressed current" over many centuries, they surfaced during the Middle Ages and appeared again and again in

the expressions of mystics such as Boehme and others. She adds:

Now that the Nag Hammadi discoveries give us a new perspective on this process, we can understand why certain creative persons throughout the ages, from Valentinus and Heracleon to Blake, Rembrandt, Dostoevsky, Tolstoy, and Nietzsche, found themselves. . . . in revolt against orthodox institutions. An increasing number of people today share their experience.

CHILDREN ... and Ourselves

THOUGHTS ABOUT CURRICULUM

TODAY'S mail is most notable for the contrasts it presents and this applies to practically all the days. Always there is the great stuff and the awful stuff, with too much of the latter. Yet the good stuff is getting better and stronger. If it keeps on emerging and gaining attention, it will eventually become enough.

We learn about the "awful stuff" mostly from the really good criticism that comes along. It is awful in the sense that it shows how few there are in positions of "authority" who say anything worth saying, and how trivial or wrong they can be, and still hold their jobs. These are the people who make the decisions about the curriculum in our schools.

For example, in the March *Bulletin of the Atomic Scientists*, Alvin Weinberg, "a senior nuclear scientist," argues for a measured approach to the further development of nuclear energy. He quotes from Charles G. Darwin (descendant of the famous Darwin) the prediction of "a brutish, Malthusian future for man unless he developed an inexhaustible energy source other than the sun." Speaking as a highly placed professional, Prof. Weinberg says "it is almost incomprehensible to us why the world is now asking: Is fission necessary?" The relevant question for him is: "What can be done to eliminate the deficiencies of fission, rather than the elimination of fission itself?" There is no reference in this paper to Amory Lovins.

In the *Los Angeles Times* for March 9, Ellen Goodman finds herself horrified by a report that William Shockley, who won a Nobel Prize for making transistors, and has since become some sort of "authority" on heredity, has himself contributed to an exclusive sperm bank that "solicits donations of sperm from Nobel Prize scientists only—peace and literature laureates

need not apply." The theory is that only the right genes can save the human race. Ellen Goodman recalls an infamous program which led to sterilization of 4,000 "misfits," reviews the claims of Arthur Jensen and Richard Herrnstein that the "IQ" sort of intelligence is hereditary, and concludes:

If an underclass exists in a democratic society, we want to blame their "stock" rather than our system. When economic times are hard, I think we are also more likely to think in terms of controlling people rather than helping them. When social programs seem messy and complicated and exhausting, we turn to the efficient engineering of science.

It all sounds so logical. Cast genius sperm upon the world, like Johnny Appleseed, and you will get a crop of geniuses. But genetically it just ain't so. Furthermore, the definition of a successful human life isn't as simple as that of a successful race horse. Genius is more than genes.

This is one of the things the scientists are arguing about, these days. If you look up the evidence offered by Jensen to support the claim that genes make the man, you find that rat experiments are mainly involved. Should we then say that the safest course is not to take biology in school? One hardly wants children to grow up to think like that.

Of course, there are biologists and biologists, but not many of them would approach such questions as the biochemist, Albert P. Mathews did, more than fifty years ago, in a text on cytology:

We must leave out, because of our ignorance, the psychic side of chemical reactions. Our equations, therefore, will be as incomplete as if energy were omitted. The transformation of matter and energy alone can be considered in this chapter, which becomes hence like Hamlet with Hamlet left out. Let us not blind ourselves to this fact. (In *General Cytology*, ed., E. V. Cowdry, 1924.)

What are other scientists doing, these days? Inspection of an issue of *Science*, the weekly organ of the American Association for the

Advancement of Science, gives some idea. One article in the Feb. 29 issue begins:

In 1876, Sir Francis Galton reported his invention of a brass whistle for the purpose of testing the audibility of "shrill notes." Although Galton noted that "young people hear shriller sounds than older people," he did not specify what he meant by young or old. In any case, it is clear that Galton did not try his whistle on infants or young children.

A grave omission, which the authors of this paper set out to repair. They found that "Adults were significantly more sensitive than infants at 10,000 hertz, but at 19,000 hertz, adults and infants had comparable thresholds." A hertz is defined as "a unit of frequency." How many decibels, one wonders, in a hertz? Or hertzes in a decibel? Oh well, neither infants nor adults are likely to care. Meanwhile we are intrigued by the titles of other topics discussed in *Science*, such as "Genetic Differences in Physiological Tolerances of Amargosa Pupfish," and "Chronic Arthritis in Goats."

What areas are more deserving of attention? In the *Saturday Review* for March 15, Norman Cousins summarizes the choices of seven eminent faculty members at Harvard University, who were asked what was "the most important problem facing the nation and the world today." Robert Coles, psychiatrist, thought food shortages are the most urgent, since more than "half the humans on earth . . . are in the grip of hunger or malnutrition." E. O. Wilson, sociobiologist, believes that the extinction of so many species, including the rain forests now under attack, should have primary attention. A dean of the faculty of divinity said that the "enormously uneven division of wealth" is the number-one problem, while an economist was mainly worried about the need to overhaul the entire structure of the capitalist economy, to make it "more participatory, all the way from the shop floor to the corporate board room." A professor of philosophy maintained that government intrusion and interference is the central evil of the time, while a teacher of environmental engineering focused on mass

poverty. The latter saw little if any future for a world in which more than half the people have a per capita income of less than \$550—a figure which drops to \$160 if the industrial countries are eliminated from the calculation. David Riesman, social scientist, declared that gaining control of nuclear weapons is the most important thing to do, and Norman Cousins agrees, remarking that if nuclear war comes, none of the other problems will matter at all. Mr. Cousins concludes:

The year 1979 was the first year in human history when spending for destructive purposes exceeded \$1 billion a day. As long as the world's resources are being squandered in this manner, any talk of making the planet more congenial to the human species is academic.

These formidable and anxiety-producing judgments are no doubt all too true, but how do you feed such material into the public school curriculum? The right answer, we think, is that you don't even try. Instead, you start at the other end, and this brings us to the contrast—the "great stuff" we spoke of at the beginning. The morning mail brought us *The Integral Urban House* (Sierra Club, 1979, \$12.95) by the people at the Farallones Institute. It is about what imaginative and determined individuals can do, if they live in the city and don't want to move:

The Integral Urban House is based on the model of an already existing home in Berkeley, California, where energy use and costs are 65-90% below average, where 90% of the wastes created are recycled, and where enough food is produced by one person working one-half hour per day to feed a family of four.

Sim Van der Ryn, founder and president of the Farallones Institute, was California State Architect from 1975 to 1978. He is also a teacher, writer, and environmentalist. One gets an idea of the scope of the book from the opening paragraphs of his introduction:

In late 1972 a group of architects, engineers, and biologists in the San Francisco Bay Area began meeting with the aim of joining our professional skills to create dwellings that would translate into physical form the central principles of the emerging

environmental movement. Each of us—often feeling isolated by the narrow perspective of our specialties—was looking for ways to extend and integrate ideas and practice, to teach others, and continue his or her own learning. We saw the potential of integrating principles of biology, food and energy production, and the design of living space and community to create places where one might function without total dependence on an "artificial," centralized technology; at the same time, we saw the need for a center where people could combine theoretical and philosophical learning with practical experience in our areas of expertise: agriculture, architecture, building, engineering, biology and natural systems. Our immediate goal became the combination of all our skills toward the design and construction of a place that would test experimental, ecologically stable and resource-conserving living systems.

The Integrated Urban House, an ongoing demonstration and educational center, was the result, and the book—all 494 pages—tells how it works. Such a house would be for our society the kind of curriculum Gandhi had in mind.

FRONTIERS

Thinking about What to Do

IN a recent letter, a reader writes to express his wonderings about how best to influence others to return to a self-reliant and responsible way of life, concluding:

Today I feel that maybe the best hope lies in the fact that the excess called success is leaving a bad taste in the mouths of the winners themselves. What I myself am currently engaged in is an effort to kindle new interest in mutual aid, working out of a little storefront here [in Winona, Minn.], and using the commerce-without-money idea that thousands of unemployed used in your city during the Great Depression, but got seduced away from by Keynesian economics. Because of inflation, it seems to be an idea whose time has come for further trial.

Our correspondent would also like attention given to Kropotkin, and to Gandhi, Tolstoy, and the Essenian and other brotherhoods of early Christianity. These are all areas of study which are likely to prove fruitful in the present. A great deal of attention is given to both Gandhi and Tolstoy in these pages, and the inspiration of Peter Kropotkin is not neglected. Especially in England is Kropotkin now remembered, by reason of the present anxiety concerning food supply. In his life of Kropotkin—*The Anarchist Prince* (Schocken, 1971)—George Woodcock wrote:

From a conscientious consideration of agricultural potentialities, he [Kropotkin] comes to the conclusion that it is in fact possible for countries like Great Britain to feed their present populations in abundance. His calculations are based on the actual results of intensive methods used regularly by market gardeners, and even by ordinary peasants in some countries. . . . Some years ago one of the authors of the present book carried out an investigation of the potential agricultural production of Great Britain, and his conclusions fully confirmed Kropotkin's since he found that if the arable acreages of 1870 were recovered, if the pastures that have declined into rough grazing and waste land were reclaimed, if the ordinary standards of Denmark, Holland, and Belgium were equalled, and if grass were cultivated as in Switzerland, all the basic foods used at present in this country could be grown with ease, and without

even resorting to the more intensive methods of the laboratory. (See *New Life to the Land* by George Woodcock, London, 1942.)

Kropotkin's power, like Gandhi's, grew out of the fact that he *acted* on what he learned from life's experiences. In his youth, after long efforts to secure measures which would ease the lives of the downtrodden, Kropotkin found himself filled with disgust for government and officialdom. He came to share Tolstoy's conceptions and gave his life to writing such epoch-making books as *Mutual Aid*, *Ethics*, and *Fields, Factories and Workshops*. The article on Anarchism in the eleventh edition of the *Encyclopedia Britannica* is from his pen.

Both Tolstoy and Gandhi dreamed of a social order made up of small communities. Gandhi believed, as Pyarelal reports in his biography, that the "ideal state would be an ordered anarchy." But this, as anyone can see, will require the abandonment of war as a national policy, since no government that plans realistically for war can for a moment consider the decentralizing return of power to the people. Kropotkin could not have recognized this reality to the same degree as Tolstoy, since in 1914 he became an impassioned advocate of war on Germany, isolating himself from the main current of anarchist thinking at that time. Yet the story of Kropotkin's life, as told by George Woodcock, remains a strongly inspiring influence. His was a heroic career in behalf of his fellow human beings.

The ancient Essenians of Palestine and Syria and the related Therapeutae of Egypt were rigorously ascetic communities or brotherhoods of which little is known, save for their extensive influence in shaping primitive Christianity. Some scholars adhere to the view that they were Buddhist in origin, and they were certainly pre-Christian. It has been suggested that their beliefs reflect the teachings of Buddhist missionaries sent out by the great Indian Buddhist king, Asoka. What is known of the Essenes comes mainly from Josephus, Philo, and Pliny, others who speak of

them being secondary sources. (The Dead Sea Scrolls, according to Dupont-Sommer, generally confirm what these historians say.) But after reading a little of their ways and rules, one wonders where people like that are to be found today. Organized monasticism, however admirable in some respects, and however much may be learned from its practices, has less appeal to the young of our time than the occasional pioneers now working on the land in the present, some of whom have found their own way to an asceticism which seems to develop naturally. Paul Goodman speaks of such people in his introduction to the 1970 edition of Helen and Scott Nearing's *Living the Good Life*:

By 1970 it is clear that we have to take seriously the Thirties' ideas of the Nearings, Borsodi, Frank Lloyd Wright, and the Southern Regionalists—and the economic ideas of Gandhi before them and, of course, the kibbutzim. Their experiments and analyses used to seem cranky, if not crackpot, and they were certainly not in the mainstream of the technical and political issues that were discussed. But suddenly we have reached a tipping point. Ecologically, we are facing disaster, both environmentally because of pollution and physiologically because of poisoning. Abuses of technology have gone so far so fast, that the chief present purpose of technology must be to try to remedy the effects of past technology. Everywhere in the world the galloping urbanization is proving to be ecologically and fiscally unviable; worse, it is impossible to bring up citizens in urban and suburban areas that are no longer cities.

Thus the eccentric ideas of the Nearings and others are no longer out in left field. History, alas, has caught up with them. . . . Today very many young people across the country have decided to try subsistence farming and natural foods for nearly the same reasons as the Nearings told themselves forty years ago. . . . What the young can get from this book is know-how. They are, understandably, inept farmers; the Nearings are, famously, superb farmers. Certainly our communal hippies will be appalled by the Puritan rectitude of the Nearings, their extraordinary prudence in gathering stones for a ten-year building plan, their almost cash-accounting of labor time, and their rigorously hygienic pleasures. It might rub off on the young, however, that thought

and responsibility are useful things even in subsistence farming.

In short, we already have ideal examples of people who, in our own time, are demonstrating a way of life that is harmonious, socially responsible, and increasingly appealing to those who are thinking about what to do.