VOLUME XXII, NO. 25
JUNE 18, 1969

ECONOMICS AND CONSERVATION

[This is the concluding part of a paper delivered by E. F. Schumacher before the National Society for Clean Air, in Blackpool, England.]

II

ECOLOGY, indeed, ought to be a compulsory subject for all economists, whether professionals or laymen, as this might serve to restore at least a modicum of balance. For ecology holds

> that an environmental setting developed over millions of years must be considered to have some merit. Anything so complicated as a planet, inhabited by more than a million and a half species of plants and animals, all of them living together in a more or less balanced equilibrium in which they continuously use and re-use the same molecules of the soil and air, cannot be improved by aimless and uninformed tinkering. All changes in a complex mechanism involve some risk and should be undertaken only after careful study of all the facts available. Changes should be made on a small scale so as to provide a test before they are widely applied. When information is incomplete, changes should stay close to the natural processes which have in their favour the indisputable evidence of having supported life for a very long time.[12]

Of all the changes introduced by man into the household of nature, large-scale nuclear fission is undoubtedly the most dangerous and profound. As a result, ionizing radiation has become the most serious agent of pollution of the environment and the greatest threat to man's survival on earth. The attention of the layman, not surprisingly, has been captured by the atom bomb, although there is at least a chance that it may never be used again. The danger to humanity created by the so-called peaceful uses of atomic energy is hardly ever mentioned. There could indeed be no clearer example of the prevailing dictatorship of economics. Whether to build conventional power stations, based on coal or oil, or nuclear stations, is being decided on economic grounds, with perhaps a small element of regard for the "social consequences" that might arise from an over-speedy curtailment of the coal industry. But that nuclear fission represents an incredible, incomparable, and unique hazard for human life does not enter any calculation and is never mentioned. People whose business it is to judge hazards, the insurance companies, are reluctant to insure nuclear power stations anywhere in the world for third party risk, with the result that special legislation has had to be passed whereby the State accepts big liabilities.[13] Yet, insured or not, the hazard remains, and such is the thraldom of the religion of economics that the only question that appears to interest either governments or the public is whether "it pays."

It is not as if there were any lack of authoritative voices to warn us. The effects of alpha, beta, and gamma rays on living tissues are perfectly well known: the radiation particles are like bullets tearing into an organism, and the damage they do depends primarily on the dosage and the type of cells they hit.[14] As long ago as 1927, the American biologist, H. J. Muller, published his famous paper on genetic mutations produced by x-ray bombardment,[15] and since the early 'thirties the genetic hazard of exposure has been recognized also by non-geneticists.[16] It is clear that here is a hazard with a hitherto unexperienced "dimension," endangering not only those who might be directly affected by this radiation but their offspring as well.

A new "dimension" is given also by the fact that while man now can—and does—create radioactive elements, there is nothing he can do to reduce their radioactivity once he has created them. No chemical reaction, no physical interference, only the passage of time reduces the intensity of radiation once it has been set going. Carbon-14 has a half-life of 5,900 years, which means that it takes nearly six thousand years for

its radioactivity to decline to one-half of what it was before. The half-life of strontium-90 is 28 years. But whatever the length of the half-life, some radiation continues almost indefinitely, and there is nothing that can be done about it, except to try and put the radioactive substance into a safe place.

But what is a safe place, let us say, for the enormous amounts of radioactive waste products created by nuclear reactors? No place on earth can be shown to be safe. It was thought at one time that these wastes could safely be dumped into the deepest parts of the oceans, on the assumption that no life could subsist at such depths.[17] But this has since been disproved by Soviet deep-sea exploration. Wherever there is life, radioactive substances are absorbed into the biological cycle. Within hours of depositing these materials in water, the great bulk of them can be found in living organisms. Plankton, algae, and many sea animals have the power of concentrating these substances by a factor of 1,000 and in some cases even a million. As one organism feeds on another, the radioactive materials climb up the ladder of life and find their way back to man.[18]

No international agreement has yet been reached on waste disposal. The conference of the International Atomic Energy Organization at Monaco, 16th to 21st November, 1959, ended in disagreement, mainly on account of the violent objections raised by the majority of countries against the American and British practice of disposal into the oceans.[19] "High level" wastes continue to be dumped into the sea, while quantities of so-called "intermediate" and "low-level" wastes are discharged into rivers or directly into the ground. An A.E.C. report observes laconically that the liquid wastes "work their way slowly into ground water, leaving all or part (*sic!*) of their radioactivity held either chemically or physically in the soil."[20]

The most massive wastes are, of course, the nuclear reactors themselves after they have become unserviceable. There is a lot of discussion on the trivial economic question of whether they will last for 20, 25, or 30 years. No-one discusses the humanly vital point that they cannot be dismantled and cannot be shifted but have to be left standing where they are, probably for centuries, perhaps for thousands of years, an active menace to all life, silently leaking radioactivity into air, water and soil. No-one has considered the number and location of these satanic mills which will relentlessly accumulate. Earthquakes, of course, are not supposed to happen, nor wars, nor civil disturbances, nor riots like those that infested American cities. Disused nuclear power stations will stand as unsightly monuments to unquiet man's assumption that nothing but tranquility, from now on, stretches before him, or else—that the future counts as nothing compared with the slightest economic gain now.

Meanwhile, a number of authorities are engaged in defining "maximum permissible concentrations" (MPC's) and "maximum permissible levels" (MPL's) for various radioactive elements. The MPC purports to define the quantity of a given radioactive substance that the human body can be allowed to accumulate. But it is known that *any* accumulation produces biological damage. "Since we don't know that these effects can be completely recovered from," observes the U.S. Naval Radiological Laboratory, "we have to fall back on an arbitrary decision about how much we will put up with; i.e. what is 'acceptable' or 'permissible'—not a scientific finding, but an administrative decision."[21] We can hardly be surprised when men of outstanding intelligence and integrity, like Albert Schweitzer, refuse to accept such administrative decisions with equanimity: "Who has given them the right to do this? Who is even entitled to give such a permission?"[22] The history of these decisions is, to say the least, disquieting. The British Medical Research Council noted some 12 years ago that

> The maximum permissible level of strontium-90 in the human skeleton, accepted by the International Commission on Radiological Protection, corresponds

> to 1,000 micro-microcuries per gramme of calcium (= 1,000 S.U.). But this is the maximum permissible level for adults in special occupations and is not suitable for application to the population as a whole or to the children with their greater sensitivity to radiation.[23]

A little bit later, the MPC for strontium-90, as far as the general population was concerned, was reduced by 90 per cent, and then by another third, to 67 S.U. Meanwhile, the MPC for workers in nuclear plants was raised to 2,000 S.U.[24]

We must be careful, however, not to get lost in the jungle of controversy that has grown up in this field. The point is that very serious hazards have already been created by the "peaceful uses of atomic energy," affecting not merely the people alive today but all future generations, although so far nuclear energy is being used only on a statistically insignificant scale. The real development is yet to come, on a scale which few people are capable of imagining. If this is really going to happen, there will be a continuous traffic of radioactive substances from the "hot" chemical plants to the nuclear stations and back again; from the stations to waste processing plants; and from there to disposal sites. A serious accident, whether during transport or production, can cause a major catastrophe; and the radiation levels throughout the world will rise relentlessly from generation to generation. Unless all living geneticists are in error, there will be an equally relentless, though no doubt somewhat delayed, increase in the number of harmful mutations. K. Z. Morgan, of the Oak Ridge Laboratory, emphasizes that the damage can be very subtle, a deterioration of all kinds of organic qualities, such as mobility, fertility, and the efficiency of sensory organs. "If a small dose has any effect at all at any stage of the life cycle of an organism, then chronic radiation at this level can be more damaging than a single massive dose . . . Finally, stress and changes in mutation rates may be produced even when there is no immediately obvious effect on survival of irradiated individuals."[25]

Leading geneticists have given their warnings that everything possible should be done to avoid any increases in mutation rates;[26] leading medical men have insisted that the future of nuclear energy must depend primarily on researches into radiation biology which are as yet still totally incomplete;[27] leading physicists have suggested that "measures much less heroic than building . . . nuclear reactors" should be tried to solve the problem of future energy supplies—a problem which is in no way acute at present;[28] and leading students of strategic and political problems, at the same time, have warned us that there is really no hope of preventing the proliferation of the atom bomb, if there is a spread of plutonium capacity, such as was "spectacularly launched by President Eisenhower in his 'atoms for peace proposals' of 8th December, 1953."[29]

Yet all these weighty opinions play no part in the debate on whether we should go immediately for a large "second nuclear programme" or stick a bit longer to the conventional fuels which, whatever may be said for or against them, do not involve us in entirely novel and admittedly incalculable risks. None of them are even mentioned: the whole argument, which may vitally affect the very future of the human race, is conducted exclusively in terms of immediate advantage, as if two rag and bone merchants were trying to agree on a quantity discount.

But what, after all, is the fouling of air with smoke compared with the pollution of air, water, and soil with ionizing radiation? Not that I wish in any way to belittle the evils of conventional air and water pollution; but we must recognize "dimensional differences" when we encounter them: radioactive pollution is an evil of an incomparably greater "dimension" than anything mankind has known before. One might even ask: what is the point of insisting on clean air, if the air is laden with radioactive particles? And even if the air could be protected, what is the point of it, if soil and water are being poisoned?

Even an economist might well ask: what is the point of economic progress, a so-called higher standard of living, when the earth, the only earth we have, is being contaminated by substances which may cause malformations in our children or grandchildren? Have we learned nothing from the thalidomide tragedy? Can we deal with matters of such a basic character by means of bland assurances or official admonitions that "in the absence of proof that (this or that innovation) is in any way deleterious, it would be the height of irresponsibility to raise a public alarm"?[30] Can we deal with them simply on the basis of a short-term profitability calculation?

"It might be thought," wrote Leonard Beaton, "that all the resources of those who fear the spread of nuclear weapons would have been devoted to heading off these developments for as long as possible. The United States, the Soviet Union and Britain might be expected to have spent large sums of money trying to prove that conventional fuels, for example, had been underrated as a source of power. . . . In fact . . . the efforts which have followed must stand as one of the most inexplicable political fantasies in history. Only a social psychologist could hope to explain why the possessors of the most terrible weapons in history have sought to spread the necessary industry to produce them. . . . Fortunately, . . . power reactors are still fairly scarce."[31] In fact, a prominent American nuclear physicist, A. W. Weinberg, has given some sort of explanation: "There is," he says, "an understandable drive on the part of men of good will to build up the positive aspects of nuclear energy simply because the negative aspects are so distressing." But he also adds the warning that "there are very compelling personal reasons why atomic scientists sound optimistic when writing about their impact on world affairs. Each of us must justify to himself his preoccupation with instruments of nuclear destruction (and even we reactor people are only slightly less beset with such guilt than are our weaponeering colleagues)."[32]

Our instinct of self-preservation, one should have thought, would make us immune to the blandishments of guilt-ridden scientific optimism or the unproved promises of pecuniary advantages. "It is not too late at this point for us to reconsider old decisions and make new ones," says a recent American commentator. "For the moment at least, the choice is available."[33] Once many more centres of radioactivity have been created, there will be no more choice, whether we can cope with the hazards or not.

It is clear that certain scientific and technological advances of the last 30 years have produced, and are continuing to produce, hazards of an altogether intolerable kind. At the Fourth National Cancer Conference in America in September, 1960, Lester Breslow of the California State Department of Public Health reported that tens of thousands of trout in western hatcheries suddenly acquired liver cancers, and continued thus:

> Technological changes affecting man's environment are being introduced at such a rapid rate and with so little control that it is a wonder man has thus far escaped the type of cancer epidemic occurring this year among the trout.[34]

To mention these things, no doubt, means laying oneself open to the charge of being against science, technology, and progress. Let me therefore, in conclusion, add a few words about future scientific research. Man cannot live without science and technology any more than he can live against nature. What needs the most careful consideration, however, is the *direction* of scientific research. We cannot leave this to the scientists alone. As Einstein himself said,[35] "almost all scientists are economically completely dependent" and "the number or scientists who possess a sense of social responsibility is so small" that they cannot determine the direction of research. The latter dictum applies, no doubt, to all specialists, and the task therefore falls to the intelligent layman, to people like those who form the National Society for Clean Air and other, similar societies concerned with *Conservation.*

They must work on public opinion, so that the politicians, depending on public opinion, will free themselves from the thraldom of economism and attend to the things that really matter. What matters, as I said, is the *direction* of research, that the direction should be towards non-violence rather than violence; towards an harmonious co-operation with nature rather than a warfare against nature; towards the noiseless, low-energy, elegant and economical solutions normally applied in nature rather than the noisy, high-energy, brutal, wasteful, and clumsy solutions of our present-day sciences.

The continuation of scientific advance in the direction of ever increasing violence, culminating in nuclear fission and moving on to nuclear fusion, is a prospect of terror threatening the abolition of man. Yet it is not written in the stars that this must be the direction. There is also a life-giving and life-enhancing possibility, the conscious exploration and cultivation of all relatively non-violent, harmonious, organic methods of co-operating with that enormous, wonderful, incomprehensible system of God-given nature, of which we are a part and which we certainly have not made ourselves.

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NOTES

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24. Lewis Herber, *op. cit,* p.181.
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26. *Cf.* H. Marquardt, "Natürliche und künstliche Erbanderungen," *Probleme der Mutationsforschung,* Hamburg, 1957, p. 161.
27. *Cf.* Schubert and Lapp, *op. cit.*
28. M. Weinberg, "Today's Revolution," in *Bulletin of the Atomic Scientists,* Chicago, 1956.
29. Leonard Beaton, *Must the Bomb Spread?* Penguin Books in association with the Institute of Strategic Studies, London, 1966, p. 88.
30. O. Caster, "From Bomb to Man," in *Fallout,* ed. by John M. Fowler, New York, 1960, pp. 48-9.
31. *Op. cit.*, pp. 88-90.
32. *Op. cit.*, pp. 299 & 302.
33. Walter Schneir, "The Atom's Poisonous Garbage," in *Reporter,* March 17, 1960, p. 22. (Quoted by Herber, *op. cit*., p. 194.)
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REVIEW
CITIES THROUGHOUT HISTORY

IS it indulging sentiment to wonder if women write more understandingly than men about cities? This idea was germinated by enjoyment of Jane Jacobs' *The Death and Life of Great American Cities* (Random House, 1961), and is now made to flower by a reading of *Matrix of Man—An Illustrated History of Urban Environment* (Praeger, 1968, $15,00) by Sibyl Moholy-Nagy. Miss Jacobs seemed so at home among the multiple human meanings of city life that her book became unforgettable. The impression grew that no project of extensive urban planning should proceed without a Jane Jacobs for gadfly on the board.

Mrs. Moholy-Nagy's book, a more scholarly undertaking, is less easily characterized. By dint of its thoroughness, and often its brilliance, the reader eventually feels that he is getting an education, becoming equipped to learn a lot more. There are plans, photographs, maps, on every page. Gradually it becomes apparent that cities, like lives, are shaped by the way people think about human objectives and about themselves. The author's generalizations grow more incisive toward the end, and the sharpness of her criticisms is increasingly acceptable. *Matrix of Man* is a large book (more than 300 pages) filled with fascinating material that must have taken many years to collect and prepare. The perceptive intelligence of the writer never relaxes—even the picture captions are loaded with insight. The jacket description of the book seems accurate: "An essential tool for students of urban affairs, as well as architecture and city planning, it will also be read with interest by any city-dweller seriously concerned about the future of his environment."

In the unceasing intellectual conflict between the hedgehog and the fox—the fox knows many little things, the hedgehog one Big Thing—Mrs. Moholy-Nagy is on the side of the fox. She has no patience with the oversimplifiers, since cities are, in the nature of things, *diverse*. Cities have as much inner and outer complexity as the men who build and live in them and theories about cities which fail to grasp this fundamental reality earn the author's scorn. She writes at the beginning:

> The current "urban crisis, and its pessimistic, self-destructive diagnosis, differs from previous environmental revolutions in its contextual misdirection. . . . The disastrous results of misapplied laboratory techniques in sociology, psychology, and education are just starting to show. In city planning and architecture, the "scientific outlook" still has the romantic glow of an untried dream. The technocratic illusion that manmade environment can ever be the image of a permanent scientific order is blind to the historical evidence that cities are governed by a tacit agreement on multiplicity, contradiction, tenacious tradition, reckless progress, and a limitless tolerance for individuals. Science must be specialized, isolating, value-indifferent, and purely quantitative. With our capacity for incongruous comparisons, we try to solve qualitative problems of racial and social relationships with quantitative statistics; we attach significance to the ratio of old slum unit to new slum units because the scientific determinism of the last century postulated that man is the product of his physical environment. The qualitative aspect of the city is the content of this environment, which is nonscientific, because its single definable denominator is social and spiritual self-preservation at maximum well-being. No other epoch has received more persuasive proof of the split between human content and ahuman objectivity than ours. The blind logic of science takes its course regardless of the effects of air, water, and food pollution, drugs, chemical and nuclear weapons, speed and the combustion engine. But in architecture and planning, only that is good which serves the human condition at a particular stage of existence.

The reader soon gets used to the sting of this prose, which runs all through the book. However, some planners and some architects earn high praise from the author.

Matrix of Man is organized according to certain archetypal forms assumed by cities. The geomorphic pattern is that determined by the surface of the earth. The concentric form is made of rings of development around a center—a palace, a fortification, or a holy place. Then there

are linear cities and cities made of clusters. These schemes of development give the study of cities a formal order, but there are endless variations within every type.

Mrs. Moholy-Nagy is noticeably a writer of independent mind. There are frequent asides like the following:

> Despite evidence to the contrary, man is not an ape who lost his tail so that he could sit behind a steering wheel, nor did he develop speech in order to produce TV commercials. Anthropoid and hominoid share a common ancestor from which evolved two separate species, differing in essential characteristics. Analogically, modern cities are not villages that have progressed into "machines for living," and citizens are not peasants grown sophisticated in search of profitable shelter. All permanent human communities share a common ancestor in the cave and the primeval hut, but their basic types differ in all essential characteristics.

Again, the author finds evidence of common aspiration in architectural features which are common to widely separated regions:

> The diffusion of concepts between the Asian continent and America still meets with skepticism or rejection. Classical archaeology, a discipline founded on the reconstruction of past societies from non-documentary evidence, is slow to accept visual analogies. Yet, it is the concrete evidence of concentric single-focused cities that seems to be the strongest proof of conceptual crossfertilization. It is unlikely that the combination of cosmic belief in a vertical world axis and its symbolic location in the center of a seven- or five-tiered "mountain" developed independently in Asia and America. If we compare the sacred district in the ancient Mesapotamian city of Ur as it was completed by the Assyrians and Chaldeans in the seventh and sixth centuries B.C. with the ceremonial core of the Maya city of Uxmal in Yucatan, Mexico, the conceptual affinity is obvious.

However, in connection with such crossfertilizations, the observation by Mrs. Moholy-Nagy that the urbanization of the Indus Valley culture, of the Chinese Chou Dynasty, and the Egyptian Old Kingdom was influenced by Sumerian civilization might lead to the assumption that Sumeria was the most ancient of all. It seems more likely that the "influence" flowed the other way, from Harappa and Mohenjo-daro in the Indus Valley westward to Sumeria. These cities of northeastern India, with "great, solidly built houses grouped along wide streets and narrow lanes," may be the oldest known cities in the world. As Dorothy Mackay wrote in *Asia* (March, 1932), summarizing the findings of Sir John Marshall:

> It is upon the seals that the dating of Mohenjo-daro largely depends, though there is ample and quite definite evidence from the close similarities between large numbers of small objects found in the three cities of Mohenjo-daro, Ur and Kish, from the style of the painted pottery and its motifs, from architectural features and so on, that the later levels of Mohenjo-daro are contemporaneous with the earlier levels of Ur and Kish.

Knowledge of ancient cities which reflect a harmony bespeaking the faith of the inhabitants may eventually generate in us a vast nostalgia, a longing for times in which men live in confidence of their place in the universe and their role on earth. The shapelessness of modern cities, unhelped by glassy technological splendor, reveals the purposelessness of man. How different the communities of not so long ago:

> The French town of Brive is a telling cosmocentric example with seven gates, seven concentric roads, seven streets radiating from the cathedral center, and seven parochial headquarters. Many concentric towns put a magic "blue stone" in the center of the market place to claim their very one world navel, or erected a seven- or nine-stepped miniature "world mountain" with a "column of justice"—a dim memory of the ziggurat as the center of the world. . . . A. N. Whitehead, who can be mined for supporting quotations as successfully as Shakespeare and Goethe, wrote, "In each age of the world, distinguished by high activity, there will be found some profound cosmological outlook implicitly accepted, impressing its own type upon current springs of action."

Can there be a "good" city that is lacking in "some profound cosmological outlook"? Can we admit to ourselves that the humanizing of cities means, first, the humanizing of people through

fresh, affirmative attitudes of mind? The consistent neglect of such questions, perhaps because they seem without answers, may be the explanation of what this writer calls the "self-destructive diagnosis" of our continuing "urban crisis." Meanwhile, Sibyl Moholy-Nagy reads the fortunes of past civilizations from the evidence left by their cities and monuments:

> From their neighbors, the Romans acquired the skills of aesthetic cribbing and keeping the population awed by priestly ritual. The Assyrians were mined for civil service tradition, army organization, weaponry, aqueducts. Greece and Asia Minor exported artists, scribes, teachers, banking, planning, and monumental architecture. The only thing that did not spring over was the Greek spark of inspiration. In the Hellenistic world the creed of the individual had been excellence, *arete*. In Rome it was and remained duty, *officium*. . . . It was unfortunate that subsequent Western history was based in the example of the Romans, who had intelligence without wisdom, energy without creativeness, and vitality without sensitivity. Like all colonizing countries after them, they imported form without content, and could imitate but not initiate. Their main contribution to environment was mannerism.

Matrix of Man is persuasive evidence that historians ought to listen more closely to artists. In this book the author shows how the natural excellences of human beings are deformed by strait jackets inherited from the past. Modern cities are but one of the objectifications of this confinement. The creative young, with no wholesome matrix for their development, are made to feel both guilty and frustrated; fortunately, they are still healthy enough to turn rebellious. The assimilated lessons of the study of the city and its culture through history reveal things of this sort to the perceptive writer schooled in the arts, leading to generalizations which reach far beyond the problems of architecture and city planning.

COMMENTARY
A LAW OF NATURE?

WHILE the abuses of power which Mr. Schumacher exposes in this part of "Economics and Conservation" are so far-reaching that it is difficult to imagine stopping them without application of an equal, corresponding power, a fatal illusion may lie precisely here—in the assumption that the *important* changes for human betterment cannot be accomplished without stern compulsion.

The fact is that these abuses are themselves by-products of a general belief in the necessity for compulsion. And if there is anything to be learned from history, it is that a form of Gresham's law applies to the use of coercive power. The more power you get, the more you rely on it; and a point is reached where it seems foolish to rely on anything else. Power, after all, is a sure thing. Those people do what you say or you *kill* them.

So long as this remains the view of the majority of the people—whether in terms of a "last resort," or the practical, tough-guy idea of shooting first and arguing afterward—there isn't going to be any important change in the behavior of people who control national policies. What they are doing is the inevitable outcome of the logic of a common belief.

That is why the remedies for the ills recited in various ways in this issue cannot be "organized." The remedies must first exist in the hearts and minds of the people. The decentralists are right. The people who see hope only in education are right. The Gandhians are right. The men who recognize that the sovereign remedy for human ills lies in individual use of the imagination—as William Blake long ago pointed out—are right.

Reliance on power drives educators from the field. The use of formula stifles individuality. The assumption of righteousness puts an end to freedom and growth. Planning for the good of other men without consideration of their will assumes that the human spirit has abdicated in them, and no man can make that assumption until it has already diminished in himself.

We have not even begun, as a civilization, to become consciously aware of the values and meanings of authority which does not resort to power, yet such authority exists and has operated for the common good wherever there has been anything at all of what we mean by civilization and the arts.

Only subhuman interests can rest upon or be served by power. This may be supposed to be a "religious" principle. It needs to be recognized as a law of nature.

CHILDREN
. . . and Ourselves
THE LONELY FEW

IT sometimes seems that the major task of the schools is to overcome the influences to which children are exposed to in the home; but then, on other occasions, the home seems the last defense against the influence of the schools. It is probably a mistake to define any basic problem in institutional terms; circumstances determine where it emerges, and what solution is possible always lies, finally, with individuals. A passage in Wendell Berry's new book, *The Long-Legged House* (Harcourt, $5.95), illustrates the stamina the young may need when they are sent away to school:

> The school I attended was a military school. There military correctness and regularity were always the aim—thwarted constantly, to be sure, by the natural high spirits of the students and by the natural mediocrity of most of the teachers—but when thwarted always exacting vengeance on somebody. Sympathy and intelligence were in everything replaced by rules, and by a long ago outworn—hence, threatened and fanatical—moral dogmatism. The highest aim of the school was to produce a perfectly obedient, militarist, puritanical moron who could play football. That aim, of course, inspired a regime that was wonderfully vindictive against anything that threatened to be exceptional. And having a lively and independent mind, I became a natural enemy of the regime. Take a simpleton and give him power and confront him with intelligence—and you have a tyrant. I was once struck by one of the teachers for using a dictionary (not an authorized textbook) during a study hall, and another time was openly chastized for reading a story by Balzac entitled "A Passion in the Desert," the only passion authorized by the regime being a passionate servility. The "discipline" exercised by the student officers was often equally stupid, and often more violent. I waged four years there in sustained rebellion against everything the place stood for, paying the cost both necessarily and willingly. I was not, during all those years, well equipped for such a struggle—though I was a conscious student of resistance, and got pretty good at it toward the end. I had, maybe because of the prolonged awkwardness of my adolescence, an enormous craving for personal dignity—and in the military school dignity simply was not possible for one who was not an athlete and who could not regard mechanical obedience as the summit of virtue. I don't think I could have survived that struggle intact if I hadn't had a history that taught me that there was dignity of another kind, and more desirable. I had known from the beginning a few men who accepted and required it of themselves as men with a great simplicity of pride, who could be lonely in their virtues and excellences if they had to be, and who could move in their lives without either crawling or marching—and the thought of those men was before me. But also I had lived days of my own, perhaps mainly at the Camp, when my life had seemed to come to me naturally, with an ease and rightness, as life must come to the kingfishers on the river. I knew that these were my best days, and knew that they had not come to me on the orders of anybody or because of anybody's opinion of them or because somebody had allowed me to have them.

The Camp was a wild place with a deserted cabin, and the few men . . . but how can you plan for influences like that? Yet they are what the young will always need, simply because planners and curriculum designers cannot provide them, although certain conditions established in the home can sometimes make their presence not impossible.

(Mr. Berry's essay, "The Loss of the Future," which appeared in MANAS last November, is in this book.)

Other influences against which only the home can provide protection are described by Joseph P. Lyford in the *Center Magazine* for March:

> I suspect that my four-year-old son sees the world as a series of television commercials, which are about the only thing he watches on TV these days. In Jody's opinion a banker who carries a briefcase around is automatically a flunky for the Master-Charge credit card people, and when his mother lights up a Kent, he is there at her elbow humming "That's What Happiness Is." One day, watching a CBS documentary film showing the working of the human stomach, he began talking about aspirin tablets. Lately, in an effort to bridge the generation gap, I have been studying television all over again from my son's point of view, and I can report that he has something. For one thing, the commercials are about the only programs left that aren't running over

> with violence. And in a symbolic, subliminal way, the commercials seem to be telling us more about American life than all the news and movies and laugh-ins that come in between. There is the big success message from the automobile companies, with their chromium bumpers and headlights-with-eyelids, that it's what's up front that really counts. One can't help noticing, for instance, that those suburban homeowners who collect insurance when their houses burn down are always white people.

Well, Mr. Lyford has his tongue in his cheek and is building toward other points, but these are the seldom inactive influences exerted on a great many of the coming generation. Spartan measures seem called for.

In the same issue of the *Center Magazine*, Howard Warshaw (a Santa Barbara artist who did the Magazine's cover) is quoted in an interview on the role of art in our time—an extended discussion of this "influence":

> In talking about art, we tend to think about only those things considered to be fine art, but if the frame of reference is changed to include everything that is supposed to tell what life is like—sculpture, painting, literature, motion pictures, television—then a tremendous amount of material is daily being washed over us. Chiefly, it comes in the form of advertising. Advertising is the primary fiction of our time, at least in terms of its effect, the money spent on it, the actual works produced, its effect on everything else. Let's say that all the stories ever told, all the songs that are sung, all the dances that are danced, all the pictures and images that are made, are art. Then we can see that our age is a time of enormous production of very bad art. Art should be a serious attempt to get at the truth of human experience. But what is advertising? It's a serious attempt to create fantasies and fictions about human experience that are geared to an already known and desired end; namely, to sell some particular product. Advertising doesn't stop at telling lies about the product itself, it also tells lies about the way life is and the way the world is, and it does so for one purpose only—so the product will seem desirable. That may require falsifying all of reality. Look at the advertisements in any popular magazine or on television—what you'll see is that advertising, the "art" of advertising, has moved beyond selling a product's usefulness or its desirability. In order to justify such claims, it is making general fictions about what the world is like and what it means to be a human being.

A lot of people are trying to "change" these conditions by demanding political control of marketing techniques—by rewriting the Constitution, if necessary, to get the necessary power—but political people have things to sell, too, and for a quick sale, which they usually insist is required, they will probably have claims of their own that need supporting fictions. In other words, they, also, may stoop to conquer. It's been known to happen.

Mr. Berry has the only answer that works—that will make gradual changes in the "system" work, too. If the young are to survive all this "intact," they need the presence in their lives of a few people who can be "lonely in their virtues and excellences," and who will neither crawl nor march.

FRONTIERS

The New Renaissance

THE melancholy longing for people to *see* is becoming less of a forlorn hope than it used to be. The fact is that a great many people are seeing more and slowly changing their ways. Reforms are taking place, not so much from moral pressure as from simple existential realizations which make old forms of behavior unreal and no longer possible. This sort of transformation is especially noticeable in the young. There is nothing to argue about. The young simply see differently and feel differently about a great many things. Most interesting of all is that changes pop up in unexpected places, where few "reformers" have focused their attention.

These developments are impressive evidence in support of the basic humanist contention for *undirected* freedom, of the advocates of *general* education, and of unqualified faith in human potentiality, even though the bursts of change often come so suddenly as to take away the breath of people working conscientiously and methodically in other areas. One way of understanding what is happening, and why it is so unexpected, would be to say that reformers usually think in terms of correcting abuses, while the changes that are now appearing flow, instead, from new inspiration and a regeneration from within.

Consider, for example, the stir among architectural students of today. *Anarchy 97* (March, 1969) offers material suggesting that tomorrow's working designers have a grasp of their human responsibilities which declares a new Renaissance. The first article, by Tom Woolley, an architectural student in Edinburgh and president of the British Architectural Students' Association, reports on a manifesto produced by students from seven European countries, presented at the International Union of Architectural Students Congress in Vienna last summer. These young men have an impressive clarity concerning what they must do:

> As students we saw our main role as that of changing education so that students in the future would have more of a chance. At present architectural education seems little more than a process that produces people who are sufficiently arrogant to think that they can take decisions affecting many other people without consulting them. It teaches students that most people are moronic about the environment and that they and the profession are guardians of good taste in an evil world of competition and philistinism. The architectural profession in fact is very unsure of what the architect does. Students are told categorically that they are being trained to be "generalists," which means that in their course they are not allowed to study anything in depth. This term must seem to many students to mean parasitical middle men because one's responsibility to society, though stated, is never investigated. It is an education that fails to begin with a critical look at the status quo, and goes on to prevent individuals following up the problems and situations that interest them. They are told that they must do the course and must be kept to it by teachers who have a responsibility to society—after all, one's buildings might fall down if one didn't win one's tutor's approval! Not only is there no freedom in the training of people interested in the built environment, the disciplinary barriers are impenetrable. If these barriers in education were to vanish, the architect as benevolent dictator would vanish too.
>
> Instead students could arm themselves with useful tools and knowledge with which they could assist a community. They would no longer need to be part of a profession imposing its esoteric rationale on a society which has no choice but to submit to a meaningless environment, an environment which expresses the drab, exploited meaningless lives of so many people.
>
> I would invite any architect or architecture student reading this sympathetically to get in touch with me. We don't want to set up any sort of national institution to fight all the evil forces in society. Our actions have to be in the area we live and work in, but we need to come together to share experiences and common interests. [His address: Department of Architecture, University of Edinburgh, 18 George Square, Edinburgh 8, Scotland.]

The difference between student destroyers and student regenerators does not lie in their diagnosis of the existing society, characterized by the "drab, exploited meaningless lives of so many people." There is ample agreement on what is wrong. The difference lies in the remedy sought. Destruction is the course of those who adopt formulas prepared by other men. Particularized investigation of the

possibilities of rebuilding is the choice of men with imagination.

Another article in *Anarchy* reports on studies of South American self-help housing which appeared in two issues *of Architectural Design* (August 1963 and August 1968). The point of this material is that it changes the focus and abandons the assumptions of conventional thinking about housing. The architects concerned with such questions found the resourcefulness and ingenuity of poor people in "squatter settlements" so noticeable that the advantages of "technology" for home construction seemed almost irrelevant by comparison. Following are some of the conclusions of this research:

> . . . there are many positive aspects of the squatter environment, especially in the flexibility of the solution and its adaptability to the changing needs of family over time, and in the sense of autonomy and self-determination for both individuals and communities in making their own environment directly. In contrast, the world which we saw around us in the United States, with all its relative economic lavishness and technical virtuosity, often seemed outside the control of its inhabitants, even alien to man.

One of the contributors to these studies, John Turner wrote:

> The squatter barriada-builder who chooses to invest his life's savings in an environment that he creates, forms himself in the process. The person, as the member of the family and of a local community, finds in the responsibilities and activities of home-building and local improvement the creative dialogue essential for self-discovery and growth. The barriada is ground for living that the housing units, marketed or allocated by mass-consumption society, do not provide. . . .
>
> That the mass of urban poor in cities like Lima are able to seek and find improvement through home-ownership (or *de facto* possession) when they are still very poor by modern standards is certainly the main reason for their optimism. If they were trapped in the inner cities, like so many of the North American poor, they too would be burning instead of building. The mass-designed, mass-produced environment for an increasingly homogenized market of mass-consumers are no more than assemblies of goods devoid of existential meaning.

We should not conclude without calling attention to the discussion, "Technocracy: the Enemy of Architecture," by George Molnar, a lecturer on architecture at the University of Sydney. His remarks are pithy and aphoristic. For example:

> Technocracy means the management of a country by technological experts. Theoretically, it is for the good of the whole community. In practice, the good of the whole community is a term which can be manipulated and may not be related to the good of the individuals which compose the community. . . .
>
> The real aim of technocracy is to achieve technical perfection. A dedicated scientist must always want to improve his design, better his products, perfect his invention. The process is never-ending. From his point of view, the question "Why?" has no meaning. Everest was to be climbed because it was there. The summits of technology keep rising for ever. To what extent scaling these summits affects human happiness is not his concern. Yet the proper answer to the question "Why?" must be phrased not from the technical, but from the human angle. . . .
>
> Technocracy has no morals. The concept of morals arises from the human condition. Research on abstract facts is above such a thing. A television technician is interested only in producing better and better television sets. What is shown on the screen interests him only as far as the clarity of the reception goes. If more sets will be sold by appealing to the public's lowest taste and larger sales will produce greater funds for research, so be it. His aim is the better set. . . .
>
> Mass production must have uniformity not only in its products, but in the people who use them. It is the technical process directed to turn out goods in large quantities which requires the sameness of such goods. Standardized products are acceptable only if everybody wants the same things. Mass production is based upon standardized men. Technocracy is against freedom and individuality.

Single copies of *Anarchy* are 30 cents. Annual subscription (12 issues) is $3.50. Orders should be made out to Freedom Press, 84a Whitechapel High Street, London, E.1, England.