

THE MEANING OF EVOLUTION

WHAT is the most useful way to think about the Evolution controversy—at present, the debate between the biologists and the creationists? The tensions which becloud and often distort the argument may be partly dispelled by assuming that the contestants—the ones who are wholly sincere—are deeply concerned with the meaning of life and believe that the answer to the question of origins provides its foundation. The creationists trace the beginning of the world, of man, and of all life to the acts of a personal deity, and depend for their understanding of how this happened on the scriptural teaching of the Bible, holding it to be the indisputable word of their God. While here and there this teaching may require interpretation, they maintain that for the most part the statements of the Bible are to be taken literally. The evolutionists, on the other hand, endeavor to read the history of the planet and its inhabitants as found in the Book of Nature, acknowledging that the record is incomplete, sometimes obscure and ambiguous, yet finally reliable in the sense of being the only evidence available concerning our past.

The focus of the debate is on the question of what is to be taught to the young in the schools, since by common consent the meaning of life is of the greatest importance for them, as for ourselves. For religious people—that is, the people of the Creationist persuasion—salvation of the soul is at stake, and what could be more important to a believer? For scientists—that is, biologists faithful in spirit if not in letter to Charles Darwin—the issue is freedom of mind and unconfined practice of the scientific method—as the only way we are able to know as much as we can about the lives of human beings on earth, and how to improve them—is at stake, which amounts to mundane salvation in terms of the common good.

There are of course religious thinkers who see nothing contradictory of their spiritual convictions in the idea that the processes of nature are in some sense a reflection of divine intentions, just as there are scientists—and a few evolutionists—whose conception of scientific knowledge does not rule out transcendental possibilities or spiritual influences. But the members of neither of these groups can be counted as part of the forces of orthodoxy, whether religious or scientific. The controversy about evolution is essentially a war between orthodoxies and needs to be understood as such. It is, moreover, a conflict taking place largely in America, or the United States. Perhaps European religionists who believe in some form of creation do not feel there is much to be gained in attacking public education or attempting to prescribe courses in Creationism. Or perhaps they are less sure of the righteousness of coercive methods in the teaching of religious belief—after all, the Church of Rome recently published its finding that a grave injustice had been done to Galileo in his trial by the Inquisition in the seventeenth century. In any event, the Evolution controversy is an American phenomenon.

While, since the Scopes trial in 1925, a number of books on the subject have been published, some of them attempts at conciliation, others plainly partisan, a volume which appeared earlier this year is the first discussion we have come across which embodies sufficient maturity and impartiality to throw a helpful light on the subject. This book is *The Bone Peddlers*, subtitled "Selling Evolution," by William R. Fix, published by Macmillan (\$18.95). Unlike most creationist and evolutionist writers, the author dares to make synthesizing suggestions in his concluding chapters, pointing to the possibility of currents of spiritual intelligence in the evolution of

man, and offering more than a little evidence (drawn from cultural studies) in support of this idea. The findings of recent psychic research also play a part in this support.

Mr. Fix's title reveals a chief intent of his book—to reprove the paleontologists and archaeologists for what he identifies as a scientific sort of sectarianism, and even dogma. He in no way embraces the arguments of the creationists, although he finds some of them more intelligent than the scientific writers will admit. Fix seems to think that the evolutionists are more deserving of serious criticism by reason of their supposed commitment to the scientific spirit, which he finds violated again and again. His book, in short, seems an impartial text. Its fault—if it is a fault—is his flip and effervescent style, the barbs he aims at some of the scientific writers, although it must be admitted that they usually seem deserved.

What Fix is really after, throughout this volume, is a reasoned and reasonable blend of the metaphysical with the physical. His chief criticism of the scientists is for their determined rejection, "on principle," of any sort of metaphysical causation. They close their minds to this possibility and as a result are actually quite ignorant of the great changes in human attitude toward life and knowledge and truth that have occurred during the past fifty years or so. The biologists still think in terms of a physics that has been outgrown and outmoded by physicists, so that the very ground of scientific materialism is no longer there, where the biologists walk and discourse, as though their claims were still well founded.

Little by little it becomes evident from Mr. Fix's book that the issue of evolution versus creation is not—or is no longer—a question of scientific fact but a psychological matter: in what way, we are trying to decide, is it legitimate to think about human origins? A key passage in the book is the following:

What we really have is a melange of mostly unsynthesized problems and inadequate concepts from which a singular theme manages to emerge: the repeated insistence by many people of good intelligence that in explaining vestigial organs, odd adaptations, and much else, we are limited in this universe of infinite variety to only two conceivable hypotheses—either God Almighty functioning as his own agent or the latest version of evolutionary theory, however deficient. It is quite as if they felt a moral obligation to put the matter in these simplistic terms. This kind of behavior is a signal that, for many writers, what is ultimately at issue is not a matter of science at all, but something else.

Why, one may ask, should there be *only two* explanations of both human and cosmic origins? The question leads to recognition that these two have a fundamental attitude in common: they both deny any but *outside* influences brought to bear on beginnings and development. For the religious writers, God does practically everything. For science, the raw material of evolution is matter, worked on by external forces which, although definable, are "blind" and operate wholly by chance in producing forms of life which, in time, are called by us "intelligent." As Carl Sagan puts it in *Cosmos*:

The secrets of evolution are death and time—the deaths of enormous numbers of life-forms that were imperfectly adapted to the environment; and time for a long succession of small mutations that were *by accident* adaptive, time for the slow accumulation of patterns of favorable mutations.

Sagan, Fix remarks, "invokes accidents the way others invoke God." From his point of view it seems that "not only man but the entire universe is, in the final analysis, merely the result of a series of billions of accidents over billions of years." Why this aversion to any possibility of plan or purpose as explanation of natural processes? The answer is simple enough: The scientists are determined to keep out of the universe either the hand or thought of a personal creator or deity who by definition is able to do *anything*. Such a being renders all explanation, even all *thinking*, superfluous. The attempt to put reason (scientific causation) in the place of the

Will of God was for organized religious authorities the ultimate crime. The evidence of this view on the part of the Roman Church in the seventeenth century is crystal clear. Writing about Galileo and his trial by the Inquisition (in "Galileo Today," *Reflections on Men and Ideas*, MIT Press, 1968), Giorgio de Santillana says:

When the Pope rose in fury against him, it was not because of his experimental discoveries, surely not. It was because he spotted the pride of intellect that thinks it can establish a true order deductively.

Let me tell you the story. At one point before the trial, the Pope gave audience to the Florentine Ambassador who had come again to plead desperately for Galileo. "I made free to remark to His Beatitude," reports the Ambassador, "that since God could have made the world in infinitely many ways, it could not be denied that this might be one of those ways, as II Signor Galileo thought he had discovered." At which the Pope, red in the face and pounding the padded armrest of his pontifical chair, shouted, "We must not necessitate God Almighty, do you understand?"

Thus the offense of science is the dethronement of God, while the offense of religion is the outlawing of reason, but in this case the "reason" of mechanistic causation which is without the guidance of cosmic purpose and conscious striving. Both "authorities" are firmly against independent purpose and intelligence in the units of evolution, such as human beings. This is a third hypothesis which Mr. Fix proposes, against the embattled orthodoxies of science and religion, but not, he believes, against the trend of the times. The closing paragraph of his book is explicit:

The reality is that there is a deep tide running in the direction of things of the spirit. Unless and until anthropologists and related scientists are able to develop a more holistic approach studying the whole man and taking into consideration the full depth of human nature, they will soon lose their wider constituency. As it is, many are now discrediting themselves, behaving more like bone peddlers than scientists. They imagine their opponents are fundamentalists, but the cultural currents flowing through the United States today—and a great deal else—suggest instead that their deeper problems arise

from their lack of appreciation of the multiple dimensions of man himself.

Fix proposes that humans began as a class of spiritual intelligences—called, perhaps, a hierarchy—which descended and inhabited the proto-human bodies of mankind—beginning a cycle of inner evolution which was never "animal" in the familiar sense. This could be called a Platonic Humanist doctrine, which the author gives in a sentence: "Now, if hundreds of thousands or millions of these human spirits came down to earth together and acted in the same way at the same time, a whole generation of fledgling human beings could have been produced at once," As justification for considering such a possibility, which he names "Psychogenesis," Fix says:

In a sense, psychogenesis is a perfect compromise between evolution and creation, retaining the best features of both. Philosophically speaking, materialistic, accidental evolution is as extremist a doctrine as a completely literal reading of Genesis. Both positions ignore scientific fact, building their respective cosmologies on half-truths. The full truth is rarely found in any extremist position on any question, and it would be surprising if it were otherwise with the basic question of man's origin. Psychogenesis enables us to affirm the spiritual nature of man while also affirming the validity of the concept of evolution. The theory of psychogenesis is not a substitute for evolution, but rather the mechanism behind it. And it profoundly extends the concept of evolution to apply to the human spirit itself. The creationist can have his way, if it is his claim that the essential man, the spiritual man, was created directly by God. That seems to be the claim of the Scriptures of many religions. The advocate of psychogenesis can point out, as does Broom, that the ultimate purpose of intervention by spiritual beings in the ontogeny of an ancient hominid could hardly have been merely for the purpose of converting that hominid to a man. The purpose must have been to provide a vehicle suitable to the further development, refinement, or evolution of those spirits. And if we entertain the possibility of reincarnation it is possible to see this spiritual evolution as an ongoing and dynamic process that is very much alive and continuing in the world today.

The section of the book devoted to this theory is comparatively brief, showing its ground

in ancient myth, and how it might fit with anthropology as a working solution for problems of evolution that have appeared in the geological record. The main body of the work, in some ways its chief educational value, provides a careful review of the scientific proposals concerning the origin of the human species, starting with the book published by Darwin in 1859. Today, he shows, Darwinism has been replaced mainly by question-marks, since the major contentions of the great biologist have proved inadequate, although distinguished evolutionists still call themselves Darwinists and defend their founder's claims by modifying them almost beyond recognition.

Fix does not spend many pages criticizing creationist books, but points out that the better writers in this field have exploited the weaknesses of Darwinism to some effect. He is mainly concerned with the exaggerated claims of scientific evolutionists, who may display as much bigotry as any creationist advocate. Fix believes that the scientific polemicists felt driven to extremes by the apparent successes of some of the creationists, and that the politicalization of the issues in the name of religious "freedom" has been a misfortune for all concerned.

In the early chapters Fix reviews all the major discoveries of fossil remains thought to be ancestors of man, noting the disagreements of the anthropologists themselves and describing the admitted fraud of the Piltdown man, once so eagerly heralded by the champions of this supposed missing link. He quotes from Norman MacBeth's authoritative volume, *Darwin Retried* (1971), praised by Karl Popper, philosopher of science, as "excellent and fair," providing a passage on two eminent evolutionists, Ernst Mayr and George Gaylord Simpson, both of Harvard. Macbeth says:

Mayr, a convinced evolutionist and an eminent member of the synthetic school, says that Darwin was "bewildered," that he was "hopelessly confused," and that he had "a lack of understanding of the nature of species." He adds that Darwin was unable to discover the origin of species: "Darwin failed to solve the

problem indicated by the title of his work. Although he demonstrated the modification of species in the time dimension, he never seriously attempted a rigorous analysis of the problem of multiplication of species." Professor Simpson, Mayr's colleague at Harvard and an equally convinced evolutionist, caps Mayr by saying that Darwin's "book called *The Origin of Species* is not really on that subject."

It is commonplace, today, to note that Darwin, while working on the books expounding evolutionary theory, was reading with admiration Adam Smith's *The Wealth of Nations*, but Fix has found in Bernard Shaw a passage which shows that the Irish critic saw this influence in "the struggle for existence" long ago, saying:

Never in history, as far as we know, had there been such a determined, richly subsidized, politically organized attempt to persuade the human race that all progress, all prosperity, all salvation, individual and social, depend on an unrestricted conflict for food and money, on the suppression and elimination of the weak by the strong, on Free Trade, Free Contract, Free Competition, Natural Liberty, Laissez-faire: in shots, on "doing the other fellow down" with impunity.

Commenting, Fix says:

A few politically conservative biologists still emphasize the competitive aspect of existence, but most now point out that cooperation and ecological balance are far more common in nature than "war. Moreover, there is important though little noticed evidence from the fossil record that not only gives the lie to the struggle for existence but confounds the idea of a sequence of forms arising from that struggle.

Fix is in no sense a disbeliever in evolution, but a critic of the doctrine of Darwinism when presented as an *ideology*. He objects to the tendency among scientists to extend their theories far beyond the areas covered by any evidence they can produce, "so as deliberately to exclude the possibility of any nonphysical agent." The European geneticist, Jacques Monod (in *Chance and Necessity*, 1974), has shown that what Fix says is by no means exaggerated. Monod wrote in his book:

. . . chance *alone* is at the source of every innovation, of all creation in the biosphere. Pure

chance, absolutely free but blind, at the root of the stupendous edifice of evolution: this central concept of modern biology is no longer one among other possible or even conceivable hypotheses. It is today the sole conceivable hypothesis, the only one compatible with observed and tested fact. And nothing warrants the supposition (or the hope) that conceptions about this should, or ever could, be revised.

If evolutionists share with geneticists (and most do) this conception of a closed system of mechanistic causation as the only source of this "stupendous edifice of evolution," then it will be remarkable indeed if the intelligent and thoughtful segment of the human race does not decide that the time has come for individuals to think for themselves about this great question. Most people long ago abandoned the Garden of Eden story as a reliable account of where we all came from, although its significance as a myth, dealing with the origin of evil and of the human struggle toward responsible knowledge, like the Prometheus story, may still prove valuable. Darwinism, we might say, filled a vacuum in the vital beliefs of mankind, having, as historians have pointed out, a further effect in building intellectual independence of authority, but the teachers of Darwinism have failed to recognize the reality of the spiritual element in human beings, allowing it no role either in beginnings or endings of life on earth. The vacuum, in short, has re-appeared in recent years, and the time is ripe for presentation of a more inclusive and impartial view of both the beginnings and processes of evolution.

It might be noted that filling a vacuum in thought is far easier than displacing widespread belief, but even realizing that the vacuum exists requires a kind of introspection that is fairly uncommon.

But today, the perilous condition of the world, the shock and disillusionment produced by the science-guided technology of war, and the growing sense that humans are losing their feelings of identity in the shuffles of history—these and the concurrent intuitive longings of the

best men and women of our time have made the presence of the vacuum increasingly evident. Interestingly, signs of the movement of thought in a fresh direction may be found even among anthropologists, and the one quoted by Mr. Fix is Robert Broom, colleague of Raymond Dart and himself discoverer of an ancient species now called *Australopithecus robustus*. In *The Coming of Man* (1933) Broom wrote:

To suggest the possibility of a spiritual agency in evolution will of course evoke a vigorous protest from most scientists; but if physicists and philosophers are considering the possibility of a spiritual view of the physical universe a biologist may perhaps be excused for considering whether some spiritual agency or agencies may not be largely concerned in the processes of evolution. When we have a very definite effect we may claim the right to consider all possible causes even though at first sight they may appear improbable. Even those who believe in mutations great or small have to admit that they know nothing of what may have produced them; and Darwin had to admit that what was behind variations was quite unknown.

The Bone Peddlers may not be an epoch-making book—many minds contribute to such great changes—but it is certainly epoch-marking. It should be read by all literate people who are concerned with the meaning of their own lives.

REVIEW

NEGLECTED SOURCES

HOW informing are our introspective wonderings about "morality," about right and wrong? Are there, for example, areas that we don't look at closely, on the ground that doing so would be restrictive and at the same time painful? Even in the privacy of solitary thinking, we may be careful not to go "too far" in such evaluations. "Conscience," Hamlet mused, "does make cowards of us all," and we are likely to agree. Yet there are moments of decision in an individual life which may alter direction and virtually shape another destiny.

An example of this is the career of Marcel Barbu, a Frenchman who grew up in an orphan asylum. As a boy he went to a seminary but at fifteen decided he lacked a sense of priestly vocation and learned the trade of watchcase making. This was in Valence, in the south of France.

After some years of a union man's experience in a factory, Barbu decided he did not like either the way the work was organized or its purpose. He and his wife decided that they would have their own business as a way of shaping a means of liberation. They sold their furniture, bought machines, and started out, sleeping only three or four hours a night. Before long they had a going concern with a factory council and other participatory benefits for the workers. Yet Barbu was not happy with these arrangements. He was, as Claire Hutchet Bishop relates in *All Things Common* (Harper & Bro., 1950), "aiming at more than enlightened paternalism."

He was after a style of living. He tried to enlist his workers in his search. They were not interested. They were satisfied with the conditions in this plant.

It was not until 1940, after the defeat, that Barbu was able to make a real start toward the liberation he had hankered for since childhood. At that time everything in France was so bad that it seemed everything could and must be reshuffled. It was a time when a man could make a choice, and wanted to

make a choice, especially if he had been in the army, where there was no choice at all and where there was only defeat. Barbu tried to find some mechanics in Valence. He could not find any. So he went out in the streets and corralled a barber, a sausagemaker, a waiter, anyone, except specialized industrial workers. The men were all under thirty. He offered to teach them watch-case making, *provided* they would agree to SEARCH with him for a setup in which the "distinction between employer and employee would be abolished." The point was the search.

It worked. He found the collaborators and they all started working together. Their association was a community which took the name Boimondau, and it became known as a Community of Work. To avoid the failures of past communities, the members drew up a common "ethical minimum" to which they all could agree:

The mission of man is to improve, transform, and perfect nature and to draw the best out of it for the good of all men and of himself.

This end is considered sufficient by materialists. Christians accept it as an intermediary goal. They feel they have the same mission, since they know that they will not reach their ultimate goal (to glorify God) without having achieved this intermediary goal. Therefore, there was unanimity as to that goal which was recognized as common to all, and this without misunderstanding, still less compromise.

To make sure the ethical minimum did not become a nominal creed, they added a record of their plan:

We will put down in writing what is our ideal for living and acting. We will strive to conform our lives to it. We will reread it frequently.

We pledge ourselves to belong to a spiritual group [which might be either Communist and materialist or a traditional religious group]. The responsibility of the spiritual group is to see that all members observe the common ethical minimum, and each member his own particular ethics.

Each week we will devote at least one hour to the collective study of spiritual, philosophical and religious problems.

The failure of any one of us in observing the Rule will contribute to the education of all.

The Community is not a selection of the best. It accepts every man as is, and asks of him only to turn, with good will and energy, toward the proposed ideal.

The men were all ordinary French workers who had left school at age thirteen, so one of the first things they decided to do in community was educate themselves. They increased production and worked fewer hours, devoting the saved time to various classes. They paid themselves better than the prevailing scale and produced a product that was increasingly in demand. When, finally, the workers took over both ownership and management from Barbu, they repaid him for his investment and released him to go and teach others this community mode of industrialism, which he did.

How long do such enterprises last? Long enough, as Mrs. Bishop shows, to justify the foregoing description of their accomplishment. The drama of their resistance to Vichy and Nazi rule, as long as it lasted, would make a full-length book. The farm which the members had established became a Resistance Officers' School.

All this grew out of one man's moral decision. What did the decision grow out of? It grew out of Barbu's vision, and from his boredom with conventional acquisitive enterprise. Too often, studies and books on morality and moral development leave out the decisive factor of vision, probably because it cannot be explained, making it an intrusive element in rational discourse. It is natural, in such analyses, to begin by saying (in effect), "All things being equal . . ." but our experience, if not our theory, shows that with hardly an exception all things are not equal, although there seems little if any rational ground for explaining why. So such unexplainable factors are excluded from discussion, with ultimate loss to intelligibility.

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One factor that has been commonly omitted from studies of moral decision is the distinction that may be made between male and female attitudes. A book published in 1982, *In a*

Different Voice (Harvard University Press) by Carol Gilligan, Associate Professor of Education, Graduate School, Harvard University, is especially valuable in drawing attention to the fact that while men commonly define right and wrong in terms of human rights and their support and violation, women respond spontaneously to issues of responsibility to others, to family and community, feeling the obligation of caring and service. Men seem to think on the basis of justice and fairness, women care more about their relationships with others. Mrs. Milligan's book is largely a report of replies by women to questionnaires concerned with moral decision and the factors which affect it at various stages of maturity. On the matter of why there should be this difference between men and women, she says in her introduction:

The different voice I describe is characterized not by gender but theme. Its association with women is an empirical observation, and it is primarily through women's voices that I trace its development. But this association is not absolute and the contrasts between male and female voices are presented here to highlight a distinction between two modes of thought and to focus a problem of interpretation rather than to represent a generalization about either sex. In tracing development, I point to the interplay of these voices within each sex and suggest that their convergence marks times of crisis and change. No claims are made about the origins of the differences described or their distribution in a wider population, across cultures or through time. Clearly, these differences arise in a social context where factors of social status and power combine with reproductive biology to shape the experience of males and females and the relations between the sexes. My interest lies in the interaction of experience and thought, in different voices and the dialogues to which they give rise, in the way we listen to ourselves and to others, in the stories we tell about our lives.

The Antigone of Sophocles was perhaps the first "character" to stress the priority of moral responsibility over the laws of the state; she buried her slain and dishonored brother against the king's decree and accepted the penalty of death. Then, in the nineteenth century, Mazzini declared the sterility of human rights without the practice of the responsibility which creates them.

COMMENTARY

WORKING WITH THE BEST

A LONG and musing letter from a reader has in it this brief paragraph:

The greatest difficulty is to deal with people who were born in an ambience which gave them the wrong habits and concepts when young, which became subconscious and therefore unsuspected, finally becoming conscience, so-called.

To whom, one wonders, looking around the world, would this *not* apply? It seems "problem-specific" for the conflict between the Jews and the Arabs, and equally so for the suspicion and hate between Protestants and Catholics in northern Ireland. Southern racists in the United States could also qualify. But then, anyone less than perfect must admit to having at least a few blind spots, some of which he may have cleaned up, while others still remain.

For discussion, the extreme cases are the most useful. Take, then, the Pathans of India as an example. (Here we borrow from material scheduled for a future MANAS.) The Pathans are probably the most martial of all the tribes of India. For centuries fighting has been virtually a part of their religion. The more of them the British killed, the more furiously they fought back. They could be killed but they could not be conquered; their honor would not permit it.

Then one of their heroic leaders, Abdul Ghaffar Khan, saw the point of Gandhi's effort to free India through the moral power of *ahimsa* or harmlessness. He became a follower and devoted advocate of non-violence, but how could he possibly convert his countrymen to a way that seemed the very opposite of *their* moral tradition, which was honorable war? Khan, however, figured out how to do it. He created a non-violent army, with rank and discipline—everything an army should have except weapons. The drilled, they marched, and on their honor they were pledged to do no one harm. For a goodly number of Pathans, this worked. Abdul Ghaffar Khan

found a way to work with the best in his countrymen—their sense of commitment to honor, which he was able to turn to the service of life instead of death.

So, if conscience has been badly conditioned, even twisted around to belie a central article of faith, as in the "Christians" who glory in war, the conscience is still there, and reason and intelligence may change its admonitions. By reliable report, the Gandhi film is now doing this.

CHILDREN

. . . and Ourselves

QUESTIONS BY COMMAGER

No excuse is needed for printing here an extract from Peter Baida's contribution to the August *Atlantic*. High school students and older elementary children would find something to think about in the bit of history he repeats. In 1884, in America, he says—

No one fretted about the size of the government, but the federal surplus caused great concern. Revenues exceeded expenditures every year from 1875 through 1893. To avoid withdrawing large sums from circulation, the Treasury was compelled to retire the public debt at an unprecedented rate. This is one trend we have managed to reverse: total federal expenditures grew from \$244 million in 1884 to 728 billion in 1982, and the public debt grew from \$1.62 billion to \$1.14 trillion.

There is more from history on the size and character of government in the August *Harper's*, in an article on the genius of Alexis de Tocqueville by Henry Steele Commager. (Commager edited an edition of Tocqueville's *Democracy in America* and is said to be finishing a study of the author.) Tocqueville, he says, "had an almost congenital distrust of central authority," but in reviewing the achievements of the federal government of the United States he saw so much good that his suspicion of centralization was relaxed. Arguing for a page or two along the same lines, Commager presents a scoreboard listing the accomplishments for democracy of the government in Washington compared to those of the governments of the states:

From the beginning, it has not been the states that have been the chief instrument of democracy but the central government in Washington. It was the states that maintained slavery, the national government that abolished it. It was the states that maintained slavery and tried to reinstate it through the "black codes," even after Appomatox. It was the national government that intervened with the Thirteenth, Fourteenth, and Fifteenth amendments and a succession of civil rights acts designed to emancipate and free. It would be asking a great deal

to expect blacks to look to the states or to their communities for the protection of their rights.

It would also be asking a great deal to expect women so long denied not only their political and property rights but even access to the professions and control over their children, to look to the states for their equality. . . .

Further, it would be asking a great deal to expect labor to take its chances with state rather than national legislation. It is Congress that, over more than half a century, has enacted various charters of freedom for labor. . . . Nor should we forget that it was Congress and the Supreme Court that, over the vociferous opposition of state economic interests, put an end to the disgrace of child labor.

This record of the role of the national government in promoting justice and the general welfare is mirrored in federal efforts to encourage the conservation of natural resources it was Jefferson who celebrated the providential blessing of "land enough for our descendants to the thousandth and thousandth generation." Alas, the people nullified that prediction, often with the connivance of the states. Theodore Roosevelt launched a conservation movement early in this century, and Franklin Roosevelt reinvigorated it. FDR did more to save and restore America's natural resources—through the Civilian Conservation Corps, the hundred-mile tree belt on the border of the Great Plains, and the Tennessee Valley Authority—than had been achieved in a hundred years. . . .

In the arena of education the story is much the same. Ever since Massachusetts Bay enacted the first education laws in modern history, education has been the responsibility of local communities. But not all communities have fulfilled that responsibility. Our greatest educator, Thomas Jefferson, drafted ordinances making land grants to help support public schools and universities. . . . Those who now assert that education is a purely local matter are as wanting in logic as in a familiarity with history. . . .

Well, this makes a fairly impressive case for strong central government, giving reason to appreciate Abraham Lincoln's absolute devotion to the Union and its preservation. Yet we might also say that both conditions and national policies have changed. The national vision, today, has become a *nationalist* vision, dependent upon military prowess and nuclear clout, while the

moral insight of the times is found almost entirely among the decentralists, and those who think ecologically instead of politically. We might remember, too, as Peter Baida reminds us in the *Atlantic*, that in 1884 an army of 26,000 men was deemed sufficient to guard our shores, while a navy of half that size patrolled our waters.

But why did the national government serve us so well for so long? Commager recalls the ardent belief of the Founding Fathers, that only virtuous people could make democracy work. He quotes both Washington and Jefferson on this, then adds:

The Founding Fathers were realists—even, with John Adams and Alexander Hamilton, somewhat cynical realists. They knew human nature and did not think highly of it. Most of them were closer to Edmund Burke than to Tom Paine. History had taught them that all men were creatures of ambition, passion, pride, envy, intemperance, greed, and inconsistency. How then could they be expected to conduct themselves collectively with prudence, dignity, honor, virtue, and magnanimity?

Tocqueville confronted that problem at its most troublesome. Only a virtuous people could make democracy work, and the American people were no more virtuous than any other people. How could America succeed where so many had failed?

The performance of America, he decided, looked good because "in America it is not virtue that is great, but temptation that is small." But would our good fortune continue? Commager gives his view:

Yes, Tocqueville believed, but only if Americans could overcome the seductions of majority tyranny, the menace of militarism, the threat of an industrial oligarchy, and the dangers of centralization. Only if Americans were ready to embrace what he called "enlightened self-interest."

In his conclusion, Commager adds some warnings of his own:

It is not only the same formidable threats that Tocqueville saw in the 1830s that now confront America, but a host of new dangers. Alas, we can no longer count on those dispensations and immunities that we enjoyed when Tocqueville contemplated our destiny. We no longer have limitless resources or immunity from attack; we are no longer confident

that our democratic system works or that our system is indeed democratic. Nor, no matter how audaciously our leaders declaim it, is there any reason to believe that we are "God's chosen people."

Do we have the ingenuity to adapt to the realities of a global economy? Do we have the common sense to adjust our nationalism to a world of technology and science that is totally indifferent to national frontiers? Do we have the wisdom to realize that our fate is inextricably bound up with the fate of all the peoples of the globe? Can we practice a self-interest that is enlightened?

FRONTIERS

Bioregional Development

IN a recent *Annals of Earth Stewardship* (Vol. II, No. 2—issued by Ocean Arks International, edited by Nancy Todd), Donella Meadows, co-author of *Limits to Growth* (1972), tells about the work she is now doing with the Balaton Group, an international association concerned with ways of putting an end to world hunger. She begins with quotation from two of the speakers at a Balaton workshop. One of them, Vernon Ruttan, agricultural economist at the University of Minnesota, said:

Each agroeconomic region is so unique that the concept of transfer of technology is irrelevant. What's relevant is the transfer of the capacity to develop technology and institutions that are consistent with the cultural endowment and the resource endowment of each region. Until that's done, a sustained solution to the problems of hunger and poverty will not be attained.

We have to understand how to develop local capacity to screen ideas from the rest of the world and to invent technologies that are region-specific, and also to invent the kind of land tenure system that will work for whatever population density and land conditions prevail. In both the invention of technology and the invention of institutions I see an interaction between the resource endowment of a particular area and its cultural endowment.

How, Mrs. Meadows asks, can all that be accomplished? How can the society of a region learn enough about what is going on elsewhere in the world to add to what its people are already doing? How will the people be able to manage their own resources and the environment? Who knows about such things—knows enough to get something going? John Todd, the other speaker she quotes, provided part of an answer. She calls it "a way of thinking":

We need [Todd said] a broad theoretical base for looking at sustainable food production systems that could be implemented in a valley in Vermont, or Nepal, or anywhere. I mean a system of thinking, not particular knowledge of particular regions, which is

also necessary. People need to know how to think about complicated biological and social systems.

Each person needs to be the bearer of the kind of knowledge that allows a person to be a steward of the planet. The closest model I can think of is cooking. It's the kind of knowledge that a cook has when he or she approaches a meal. There are the oil, spices, meat, plants, freshness, a constellation of untaught but experienced knowledge about things. If one tries to make a computer model of French cuisine, one would be bogged. There's more information than can be dealt with. But there's an unstated theoretical basis in the cook's head that lets him or her confront the ingredients and produce the appropriate results.

It's a tuning in to the world's complexity in both an intellectual and non-intellectual way. And if you think such a capacity is beyond third-world peasants, look at the crafts, the useful objects, the technologies they have developed out of local needs and local materials.

These generalizations, given some imaginative attention and use of the free association process, are all understandable, yet they need illustration. Thinking about the hard-to-find individuals who have shown that they had "the capacity to develop technology and institutions that are compatible with the cultural endowment and the resource endowment" of a given region, we recalled the work of Arthur Morgan in helping to develop the town of Yellow Springs, Ohio, during the 1920s, where Antioch College was located. In 1921, when his reorganization plan for Antioch went into effect, there was almost no industrial activity in the village. The college, believe it or not, had a total annual budget of less than \$15,000, with about sixty students of high school competence. The buildings had no plumbing. Morgan obtained some modest grants and began rebuilding both the plant and the educational program. In a small volume, *Industries for Small Communities*, published by Community Service, Inc., in 1953, he tells about the role of the college in building community:

During the reorganization it was hoped that small industries might be developed adjacent to the college. They might be useful in supplying work experience and income to students on the work-and-

study program, as a laboratory for instruction in business administration, to add to the income of the college, and to add to the range of occupations available to the young people of the village, so that they would not need to leave Yellow Springs in order to make a living.

As a result of his effort in this direction, in which the science faculty of the college became involved, a number of productive small industries and businesses were developed, over the years, in Yellow Springs. Morgan describes these enterprises, one by one, showing how they transformed the life of the town. The industries fitted Yellow Springs, met its needs, and enriched its cultural life. The businesses were started from a variety of effort, but Morgan says in conclusion:

By and large, what has attracted outsiders to start their little industries in the village is its general atmosphere. They like the village. They like its variety of outlooks and interests, Its spirit of adventure and inquiry. They like the old-time neighborly friendliness, which the Community Council and other groups are trying to keep alive. Many a person in business for himself wishes to be more than a manufacturer. He would like to be an intelligent and interested human being as well. When he finds a community where a considerable number of people have similar goals he and his wife are inclined to go there.

These are some of the intangibles back of what was made to happen in Yellow Springs. Morgan knew their importance and was not embarrassed to write about them. He was also an engineer devoted to making things work well—a rather extraordinary combination of traits. While industry for small community may not be directly related to food supply, it is complementary and a part of all necessary growth. We know of no one with better understanding of how to go about technological and cultural development. His life was an example of what Vernon Ruttan was talking about. (*Industries for Small Communities* can be purchased from Community Service, Inc., P.O. Box 243, Yellow Springs, Ohio 45387.)

John Todd's article on the sail-powered trimaran he and Dick Newick have developed for

coastal fishing, in the same issue of *Annals*, is a splendid illustration of appropriate technology development and transfer. Fishermen in Guyana waters, where the craft has been thoroughly tested, showing impressive sailing speed, adequate storage of maximum catches, and negligible fuel cost, all want it, and Todd has located boat builders in Guyana eager to construct a fleet of Ocean Pickups, as the trimarans have been called. Only political delays by the Guyanese government are holding them up.

In her *Annals* article, Donella Meadows speaks of her dream of centers around the world where plans would be developed for technology transfer and development. Each center would be responsible for a particular bioregion.

The people in these centers are at ease with farmers and miners and planners and heads of states, and they can listen to and learn from them all. . . . Above all, the job of these centers is to hold clear and true the context, the values, the ways of thinking, through which all development plans and resource management schemes proceed. The values they hold are:

- sustainability,
 - efficiency (meaning high productivity and low waste),
 - true human welfare,
 - appropriateness (to the culture and the ecosystem),
 - and beauty—
- all defined within the local culture, but also, according to my vision, universally recognizable.

At the end she names several research centers already in existence which qualify in some ways for these requirements.