THE ESCHATOLOGICAL DIMENSION OF ECOLOGY

by Hans Schwarz

Our predecessors have cleared and tamed the wilderness, founded cities, built highways and railroads, developed universities, and enthusiastically embraced the industrial age. These endeavors were pursued with a confidence that we were on the right course and uniquely fitted to succeed. By now we have virtually accomplished this first American dream. However, at the very moment of achievement, we have become surprisingly uncertain.[1] The days of the frontier are over, and many of us are beginning to realize for the first time that we are living neither in a country with unlimited possibilities nor on an earth which provides an infinitely expansible environment. For the first time we are beginning to realize that we cannot have everything. It has become depressingly clear that we must abandon any dreams about a utopian future and concentrate on solving the one basic question which haunts us, namely, Can we afford tomorrow? A great number of people today are convinced that we must make drastic decisions concerning our own future and that of our environment merely in order to survive. In the decision-making process for the future the eschatological dimension of ecology, which is the most influential determinator of the future, is often neglected. However, I want to indicate in this paper that the eschatological dimension of ecology is indispensable to any considerations to secure the future at all. First, I will try to determine whether we really live in an aging world or just in a world come of age, then mention the apocalyptic dimension of the future, and finally address myself to ecological planning as seen in the context of eschatology.

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A World Come of Age, or an Aging World?

With rapid technological expansion the possibilities for good and bad have increased to such a Promethean dimension that none of us can any longer escape the implications of the decision-making process involved in technological progress. Book titles such as *The Second Genesis* or *Come, Let Us Play God* indicate of what dimension such decisions will be.[2] However, the context of such publications generally fails to point beyond the sphere of immanent experience.[3] The myth of man being a mature being who can solve his problems without reference to God seems widely accepted. Most technocrats are convinced that religious values will continue to dwindle away.[4] Yet, we wonder if our problems concerning our future can be adequately dealt with without resorting to religious values. On the one hand, some technocrats foresee a distinct strengthening of selfish values, such as one's own pleasure, physical well-being and comfort, economic security, convenience, and leisure. On the other hand, they assume that mankind-oriented values such as social justice, peace, and internationalism will be strengthened. It does not occur to those predicting these changes that it is difficult to strive for one's own pleasure and at the same time attain social justice. Furthermore, some of the most outstanding technological phenomena of our era, such as automation, the revolution in transportation and communication, and space, are often excluded from causal responsibility for value changes. In asking renowned scientists to spell out what the golden age of A.D. 2000 will be like we are told that science will be able to shape and reshape at will human emotions, desires, and thoughts, and to arrive scientifically at certain efficient, preestablished collective decisions: "They claim they will be in a position to develop certain collective desires, to constitute certain homogeneous social units out of aggregates of individuals, to forbid men to raise their children, and to even persuade them to renounce having any. At the same time, they speak of assuring the triumph of freedom and of the necessity of avoiding dictatorship at any price."[5] Jacques Ellul observes rightly that there seems to be a gap between the enormous power these scientists wield and their critical ability: "To wield power well entails a certain faculty of criticism, discrimination, judgment, and option. It is impossible to have confidence in men who apparently lack these faculties. Yet it is apparently our fate to be facing a 'golden age' in the power of sorcerers who are totally blind to the meaning of the human adventure."[6]

It would be wrong, however, simply to accuse technocrats and scientists of a lack of critical ability. They only show better than any

other group that the myth "of man come of age through an increase in his knowledge is not merely an inaccurate myth theologically. Even more, it is a dangerous myth in applied science."[7] Where man has become man's ultimate measure in the decision-making process, the development and use of technology do not emerge as true servants of man but contribute to his bondage. They are for the purpose of exerting technocratic tyranny (socialist countries) or of stimulating our sinful and greedy impulses, that is, the profit motive, national pride, and national or class paranoia (Western capitalism).[8] It is wrong to assume that man is evolving toward or has already attained a stage where he has come of age. Though his technological advancements are without precedent, his progress leaves no indication that these advancements will lead him to an age without problems and severe crises.

The assumption of man's autonomy is more a contribution to the aging process of the world than an indication that the world has come of age. It leads to an ever-increasing exploitation of man and his environment and to the depletion of his natural resources. For instance, due to increased waste and improperly treated sewage disposal into Lake Erie, this lake has aged fifteen thousand years within the last fifty years alone. We are also rapidly passing from a phase of energy abundance to one of energy scarcity.[9] Reports indicate that natural-gas supply will be under severe strain until well beyond 1975. How sharply the domestic oil supply is declining can be gathered from the fact that, notwithstanding deep ecological concerns and disasters such as the Santa Barbara oil slick, the oil industry is stepping up off-shore drilling and is building an Alaska oil pipeline. With the increasing demand on electrical energy, blackouts in large parts of the country have shown us that demand outruns supply. Though we are entering a period of growing scarcity in energy of all kinds, industry is still acting as if the ultimate supply were endless. Mismanagement of energy supply and natural resources and mistreatment of the ecosphere are not limited to one nation. They are global, because they are human phenomena, and occur in the East as well as in the West and in the Third World. Coupled with our rapid and gigantic technological progress, they have taken on such huge dimensions that we cannot escape the thought that we might involuntarily bring the eschaton upon us and our environment within the foreseeable future.

Facing an Apocalyptic Future

Our present environmental crisis has taken on apocalyptic dimensions, and many experts are predicting a doomsday for mankind in the near future. This can be illustrated with three examples:[10]

1. *Greenhouse Effect.* Through our rapidly increasing consumption of carbon-base fuels (coal, oil, gas) we release such a great amount of carbon dioxide into the earth's atmosphere that nature will no longer be able to balance this by absorbing carbon dioxide into the oceans or using it up in plants and releasing the corresponding amount of oxygen. Carbon dioxide, being relatively heavy, could easily perform the same function in our atmosphere as the glass roofs do in a greenhouse. They let the sun's rays permeate but prevent the resulting heat from escaping. Of all the CO_2 produced by combustion, one-third remains in the atmosphere. If the current rate of CO_2 deposition in the atmosphere continues, the amount of man-made carbon dioxide remaining in the atmosphere will double every twenty-three years. This would lead to an increase in atmospheric CO_2 of 2 percent per decade. In a climate typical of the midlatitudes that increase would lead to a warming of 0.2° C within fifty years.[11] Though this alone may not account for too much climatic change, we must also consider the thermal pollution through utilization of energy to get the full picture. If the present rate of energy increase is maintained (4 percent per year), we will have increased energy production twenty-five-fold in about eighty years. This artificial energy input into the atmosphere would be sufficient to start melting of the polar ice. Consequently, the sea level would rise by three to four hundred feet. The resultant worldwide flood is not difficult to visualize when we remember that most of Holland is already below sea level and preserved through dikes, and that most of the East Coast and the Gulf Coast, including Florida, is below the four-hundred-foot mark. However, experts claim that, similar to a sun roof, urban and agricultural atmospheric pollutants such as dust, sulfates, nitrates, and hydrocarbons tend to lower the earth's temperature. It is estimated that on the average about 31 percent of the earth's surface is now covered with a low cloud cover. Increasing this percentage to only thirty-six would drop the temperature about 4° C —a decrease very close to that required for the return of an ice age.[12] Which pollution will win in the end? Will we drown or freeze? Or should we continue to obscure the sky in trying to establish a balance of one form of pollution with another?

2. *Pleonexia.* The next phenomenon is pleonexia, or the naturalistic attitude of accumulating an ever-growing and ever-changing amount of disposable material goods.[13] Apart from the ensuing identity problems, this creates an increasing strain on our natural resources. The steeply rising demand on energy supply not only has led to temporary shortages of gas and electric power but will lead in the foreseeable future to the depletion of our natural and global carbon-

based fuel resources. It is estimated that 80 percent of our national resources of crude oil and natural gas will have been produced within the next thirty to forty years (this estimate does not include Alaska).[14] Even increased imports would not provide much relief because the world's crude-oil and natural-gas production would last only ten to twenty years longer to reach the 80 percent mark. Even if we would expand our energy supply through rapid expansion of our present nuclear power plants, which operate on the basis of using uranium 235, we would run into a serious uranium shortage impending within twenty-five years.[15] More promising seems the breeder type of reactor which also uses uranium 238 and thorium 232. Since research and development of large reactors based on breeding has only recently been seriously undertaken, these reactors are not expected to be in operation before about 1985. In the more distant future nuclear fusion under controlled conditions may be a possibility of extending our energy resources. Approximately twenty years of intensive research in this field have brought steady progress, and it seems feasible that in another decade or two we can simulate reactions that are normally only going on in stars, such as fusion of hydrogen into helium or, rather, the fusion of deuterium into helium. Yet we should not forget that from a thermodynamic viewpoint nuclear plants are even less efficient than steam plants since they must reject nearly 75 percent of their energy as waste heat.[16] Thus nuclear reactors must be considered as an eminent source of thermal pollution.

With regard to our energy supplies we seem to be able to switch within the near future from one type if it faces depletion to another. But things are different when we look at other natural resources. In estimating the apparent lifetime of known recoverable reserves of eighteen crucial mineral commodities—such as coal, iron, copper, and aluminum—at currently minable grades and existing rates of consumption, we notice that only eight on a worldwide scale and three on a national United States scale will last beyond the year 2000.[17] Of course, this does not take into consideration the increase in consumption or, on the other hand, new reserves that might be found or the introduction of recycling processes. Many ore deposits are being rapidly depleted, and the search for ores on the bottom of the sea, such as that of titanium, only shows the immediacy of our dilemma and could at the most provide temporary relief. However, a mineral cornucopia beneath the seas exists only in a hyperbole.[18] The ocean basins beyond the continental margin are not promising places to seek mineral resources.

3. *Overpopulation.* The last example I want to refer to is overpopulation.[19] Through our emphasis on extending medical aid

in order to prolong life and to enable procreation, we have disturbed the natural equilibrium between birth and death. However, our earth can sustain only a certain number of living beings. Regardless of new agricultural methods or housing plans, our ecosphere is able to support at the most six to eight billion people. Beyond this number, problems of pollution, nutrition, and depletion of natural resources increase so vastly that only catastrophes can result. The tragic fact is that, taking present age structures and life expectancies of our world population into account, we can be certain that by about the turn of the century we will have reached this limit, regardless of how rigidly family planning is accepted and practiced.[20] From there on, zero population growth is the only way to survive. But it is shortsighted to blame only underdeveloped countries, where population is truly exploding, for putting us in such a precarious situation. To estimate the impact of population growth on the environment we must also consider relative living standards. Thus, one American child is fifty times more burdensome on the environment than is one child from India.[21] This means that the additional one hundred million Americans we add by A.D. 2000, provided that our present population increase continues, would provide as much a strain on our global environment as an additional five billion people from India. This shows what increased responsibility accompanies an increased standard of living.

It is now already impossible to bring the rest of the world up to American standards. For instance, if the world's food supply would be distributed at the present American dietary level, it would feed only about one-third of the human race. While over two billion of the world's 3.5 billion people experience food and water shortages, there is an exclusive luxury club of nearly four hundred million people, half of them Americans, who enjoy a rich and steadily more abundant diet as well as a high standard of living.[22] Not the children of the poor but the children of the affluent are the worst polluters and make the highest demands on the earth's resources. The poor, if left alone, would control themselves through famine, disease, and other factors which shorten their life expectancy. But drastic cutbacks in foreign aid to underdeveloped countries not only would be inhuman; they would not solve the problem because it is we, the rich nations, who are no longer self-supporting. Industrial corporations show us that for highly industrialized nations the supply for natural resources such as natural gas, oil, and ores can no longer be met domestically. It must come from other lands and must be found along other shores. Almost like parasites we are eating away other nations' resources. Thus controlling the poor is not the problem, but controlling the rich. And in terms of the world's population, most Americans, even many of those

who are on welfare, are among the rich. If our present rate of "progress" and procreation continues, the limit of what our ecosphere can endure will be reached within forty-five years.

The question, of course, that many alert people ask these days is, What can be done? One way of arriving at an answer is to look for the causes of our present dilemma. Ritchie P. Lowry, for instance, assumes that at the base of the ecological problem lie three prevailing ethics which predominate Western society: "the Protestant Ethic, the Spirit of Capitalism and the Idea of Progress."[23] While these ethics determine the nature of our present religious, economic, and political systems, they have also made it possible to build a social and cultural system within which the ultimate destruction of the ecosphere is inevitable. Lowry claims that according to some kind of neo-Darwinian ideology all human relationships are seen as essentially competitive. Man is pitted against man and also against nature or the forces of God. Consequently, man and nature are converted into commodities—resources to be manufactured and merchandized —and only the most fit will survive. Since the accumulation of goods is the main goal of this life, the concept of private property plays an important role. I have the right to determine the usage and destiny of my property, and cultural success is measured in terms of growth, size, numbers, and quantity of my property. This sort of thinking is all too familiar to us since it is a fundamental part of our history and of our prevailing religious, economic, and political institutions. It expresses itself in a commitment to rugged individualism and self-determination, in a belief that man was created by God to have ultimate dominion over nature, and a crusading commitment to carry our democratic system to other less fortunate parts of the world. Yet at the same time these very beliefs are helping us to destroy one another and our environment. Unfortunately, Lowry provides only a radical view of the problems but leaves us intentionally without an answer as how to solve our dilemma.

We agree with Lowry's analysis but wonder if these three causes he cites do not boil down to just one, namely, a misunderstood Calvinistic doctrine of double predestination. As Max Weber and others have pointed out, this doctrine contributed more than anything else to the rise of Western capitalism. Man is thought to be predestined by birth either to be received into heaven after this life on earth or to be condemned to eternal damnation. Of course, man wants to find out as early as possible what his destiny is. In popular understanding the fact of election could be seen in earthly success. Thus Calvinists worked tirelessly in an ascetic manner to prove to themselves and to others that they were on the right course. The results of this work, of course,

could not be enjoyed but had to be added to the constant increase of the employed capital. With its radical orientation toward the other world, pietism played a role similar to Calvinism. The emphasis on otherworldliness by necessity led pietists to responsible use of time here on earth. Time was not to be spent in worldly joy and amusement but in self-crucifying work. The father who presided over hours of devotion is at the same time the ancestor of many industrial endeavors. The religious convictions of the ancestors led to the splendid industrial success of the grandchildren and at the same time to most of our ecological problems. But what shall we do, knowing that most of these grandchildren have long ago discarded the religious premises of their forefathers? Would it make any sense to tell them that certain religious convictions of their ancestors, which these grandchildren no longer share, may have led them to their present exploitative and self-destructive course?

At this point the penetrating analysis of Lynn White, jr., seems to help a little further.[24] White convincingly suggests that technology is a Western phenomenon and that even in our present post-Christian era our lives are still dominated by the faith in perpetual progress which was unknown to Greco-Roman antiquity or to the Orient. This faith is rooted in and is indefensible apart from Judeo-Christian teleology.[25] Even the Marxist movement could not have developed without its Christian presuppositions. However, when White labels Christianity as the most anthropocentric religion the world has seen,[26] he fails to convince us. White is right when he sees the cause of our ecological crisis in our present anthropocentric attitude (that nature has no reason for existence save to serve man). But this anthropocentricity is not a Christian axiom, as White believes. Though it could develop only within the Judeo-Christian realm (since only there did radical monotheism prevail, centering everything divine into one God and consequently secularizing all other objects, spheres, and powers), it stands contrary to fundamental Judeo-Christian beliefs. It is the result of a process through which the theocentric world view of Judeo-Christian faith was turned into the anthropocentric world view of our present secular age. God was replaced by man and thus not only did the source and direction of history become obscured, but the "for the glory of God" was replaced by the glorification and deification of man. When White finally proposes Saint Francis as a patron saint for ecologists, we wonder if White does not suggest an integration of our secular view of nature and of progress into the context of common religiosity (of a mystic type) instead of its necessary reintegration into the Judeo-Christian context which made the desacralization of nature and the pursuit of progress possible and meaningful.

Like White, Frederick Elder in his stimulating book *Crisis in Eden* distinguishes between an inclusionist and an exclusionist view of man, each of which carries profound ethical implications.[27] The exclusionist view conceives of man as standing over and against nature and consequently carries forth a basic exploitative attitude toward nature. This anthropocentric view is represented by scholars such as Teilhard de Chardin, Harvey Cox, and Herbert Richardson. The inclusionist view conceives of man as living within the context of nature and thus is much more open to a basic theocentrism which could eventually change the exploitative mentality of man.[28] Again, we must agree with the observation that an anthropocentric view of nature or of life is in the long run no viable option. It must, by necessity, lead to exploitation and eventual destruction of both man and nature. But can man really be totally included in the context of nature, except for strictly biological reasons? When paleoanthropology, for instance, distinguishes between man and animal on the basis that an animal uses tools whereas man manufactures them (*Homo faber*), then this indicates that man *has* a world, whereas an animal *lives* in a world. Consequently, man must be distinguished from the rest of nature. For instance, Wolfhart Pannenberg argues convincingly that man's openness to the world presupposes a relation to God.[29] Or, in other words, it is precisely because man is not just part of nature that we can point to his relatedness to God.

We have seen that man's anthropocentric view of nature and his own life is the main cause of his exploitative enterprises. Essentially, this is also the underlying motif of a popularized version of Calvinism in which man attempts through industriousness to find out whether *he* is elected. But what steps can be taken to improve the situation?

We have seen that we live in an apocalyptic age and that we must take immediate and drastic steps to avoid a global catastrophe. Most alert men agree with this premise. But when it comes to guidelines, goals, and limitations of such measures, there is a great deal of disagreement. It seems relatively sure that a purely cosmetic approach, if it were at all successful, would leave most crucial long-term problems unsolved. It is not enough to treat sewage better, to curb automobile pollution by eliminating dangerous gases from the exhaust of our cars, or to ban certain pesticides. Such steps are surely desirable, but taken alone they would only prolong the agony since they do not take into consideration that most natural resources are irreplaceable. If they are consumed at an ever-increasing rate, we further an eventual selling out of our planet within the foreseeable future. We must go to the roots of our ecological crisis, and our approach must be radical.

It is tempting to leave everything up to the technocrats since they presumably know best what steps should be taken. But such reasoning forgets two things. First, many believe, not totally without warrant, that the dominance of technocrats is already in part the cause of our present dilemma.[30] Second, technocrats are not totally free in their movements. They are mostly employed by industry which is still profit and progress minded. Another possibility would be to opt for a dictatorial regime because it could best enforce any necessary measures. But some object correctly that the prospect of a dictatorship does not always include just beneficial features.[31] A dictatorship tends to deprive man of his dignity and freedom and is usually more concerned about the welfare of a leading minority than about the common good of all people. Finally, some say that private enterprise has always been the American way to solve problems. But others observe correctly that our present dilemma is too complex for an individualistic approach. Above that we have noticed that the emphasis on private enterprise has led in the past to ruthlessness and exploitation, the exact symptoms we want to overcome.

Looking for the direction in which steps must be taken, we again face several, mutually exclusive possibilities.[32] There is the aesthetic approach which asks, How can we preserve the beauty and dignity of nature? There is the utilitarian approach which wonders, How can we best use the available resources? And there is the conservationist approach which queries, To what degree can we preserve the naturalness of our environment? Though each of these aspects must be considered, each of them is unsatisfactory if taken exclusively, and, if applied together, they lead to conflicting approaches. However, the basic question underlying all of these approaches is, How can we justify a particular conception of the good without merely resorting to legal authority by which such conceptions can be enforced? When we come to the limitations of the steps taken, again we face the dilemma of a multiple choice: Do we want a mankind of robots who do exactly what is best, or do we want, within certain limits, an approach of free enterprise with all its possibilities of failure and disobedience?

Confronted with this variety of choices, we find it good to remember that we live in an apocalyptic age. Since an apocalyptic age is one in which man thinks of himself as being able to periodicize world history and thus concludes that the end of this history is at hand, hope in an apocalyptic age can come only from understanding apocalyptic thinking in the broader context of eschatology. This would mean that, in being confronted with our possible doom and with a multitude of choices as to how to escape this doom, we find that a helpful directive

as to where we should go from here can come only from the Judeo-Christian tradition out of which this apocalyptic prospect originated.

Ecological Planning as Seen in the Context of Eschatology

The Christian understanding of the anticipatory power of eschatology can reintegrate the secular drive for progress into its original Judeo-Christian context and can at the same time provide man with the incentive and the possibility of stopping the exploitation of his environment and of preventing his own self-destruction.

Man has a peculiar world openness (Pannenberg) and constantly attempts to transcend the present conditions of his existence. His technical reason is not satisfied with administration of the given but strives for expansion of knowledge and of his own possibilities. Yet Paul Tillich has pointed out that technical reason left to itself dehumanizes man.[33] Technical reason has emancipated itself from ontological or, rather, metaphysical reason and determines the means and the goals of its own progress. But it has become increasingly clear that we cannot give technology a carte blanche. As long as technology is a human enterprise it must serve humanity. This means that those who direct technology—for instance, stockholders, top management, and technocrats—must serve the essential needs of man, including his needs for a quality environment.[34] Man, of course, must not be understood here as one privileged individual selection of mankind but as the highest possible percentage of men in any given society. Ecology has shown us that no living entity can exist for itself. All living entities are inextricably related to each other in a great web of being. It has become evident that we can no longer isolate state, national, or continental boundaries: "The pollution emerging from one city becomes the common pollution of all cities when mixed with the gaseous effluents being poured into the air shed. The dumping of chemical waste in one river system has the effect of polluting the general quality of the hydrosphere. Everyone's environment merges into everyone else's. We can no longer treat the problems of environment in a piecemeal fashion; our efforts must be intercommunal, interstate, and international in scope."[35]

To deal effectively on an ecological basis with the delicate web of being, two notions must be ruled out. First, we act irresponsibly if we confine ourselves simply to a cosmetic approach toward our environmental crisis.[36] We might be successful, for instance, in solving the problem of automobile pollution by cleaning up the exhaust of the car, but the long-term problem of depletion of natural resources would still be unanswered. Let me cite another example. We are

unable to resolve slum conditions simply by cleaning up the inner city and improving garbage collection and other city services. Even a low-cost housing program would be of no help. What is also needed is a basic restructuring of the city and an understanding of the city as a place to live and not just as a market for consumption or production. What is also needed is a fundamental rehabilitation program for the city at large as well as for the slum dwellers in particular. It has been proven in the past that often signs of "progress," such as the construction of new superhighways or sewage treatment plants, have caused deterioration of neighborhoods. A piecemeal effort can provide only temporary relief. Second, if we envision the new era as a "grand slowing down" we do justice neither to man nor to the problems he faces.[37] By his very nature man is a forward-looking being who reaches out beyond the things at hand. To confine him to a static existence would mean imprisonment for his enterprising spirit. It also seems that in wrestling with our ecological crisis realistically we will need at least as much progress as we encounter now, though, of course, on an altogether different level. But is there actually hope for the future or should we simply resign ourselves to our fate?

The Christian gospel tells us that we already participate in a proleptic way in the new creation which was initiated in and with the resurrection of Jesus Christ. First, this promise of our proleptic participation in the new creation enables us to arrive at a positive evaluation of human reason. It is unbiblical and unrealistic to condemn all human enterprises as basically self-centered and therefore wrong. Man can come up with the tools and the knowledge of how to provide a better world. He can design and implement agricultural reform and social and economic legislation or even redirect our understanding of the basic family structures. Even the necessary reorientation of human progress, from providing more and more material goods at an ever faster and greater rate to the understanding of progress as a fulfillment of human abilities, lies within the possibilities of human reason. Man is endowed with the privilege of exercising dominion over the world, and through his endeavors he can anticipate proleptically the new world. Thus, the Social Gospel Movement was both right and wrong when it attempted to establish the Kingdom of God here on earth. It was right because it provided a positive evaluation of human abilities. And it was wrong when it claimed the secular realization of a better future as a substitute for the God-provided eschatological fulfillment.

Second, the fulfillment of the eschatological promises envisioned in the Judeo-Christian tradition enables us to bring into focus the goals

and limits of all human endeavors and of our involvement in the ecological crisis.[38] The very fact that eschatology is essentially directed toward a God-provided eschaton shows us the limits of our possibilities. It shows us that, no matter what techniques we devise or how hard we try, our ecosphere has no eternal value in itself but is subjected to transitoriness. But the resulting interim character of our present situation does not necessitate a deterioration of present conditions and a subsequent attitude of resignation.[39] On the contrary, because we know that the New Creation started with Jesus Christ, and because we are invited to participate in this New Creation in a proleptic way, the transitoriness of our present condition can mean a transition toward the better and not the worse. It is realistic and shows a responsibility resulting from our own involvement to envision a state approaching perfection. However, since our present situation is clearly marked as interim, it would be futile to expect any perfection from our efforts. To transcend this limitation would ultimately result in a denial of God because it would attempt to replace the eschaton being provided by God through one provided by man. Instead of bringing about a better world, however, such aspiration in the long run would only magnify the ecological problems because the present ecological dilemma resulted precisely from the basic neglect of the theocentric aspect of Judeo-Christian eschatology.

Apart from showing us the limitations of our human possibilities, eschatology can also direct our attention to the goals of our ecological concern. Eugen Rosenstock-Huessy once said very appropriately, "Christianity is the founder and trustee of the future, the very process of finding and securing it, and without the Christian spirit there is no real future for man."[40] In building upon the Jewish tradition, and at the same time in a significant modification of it, the Christian faith knows about the first perfect man, the first complete human being who made the transition from fragmentariness to completeness, and thus Christian faith is compelled to proclaim this transition as a possibility for all of us.[41] In delineating our appropriate attitude during this present transitional stage, we must point to Jesus of Nazareth who completed this stage. We can learn from the way he lived that we should live as God-responsive and God-responsible beings within the matrix of our environment. This would rule out an understanding of progress as accumulation of material goods or as an emphasis on the quantity of life. It would also rule out a technocratic relinquishing of human responsiveness and responsibility, or a neglect of this responsiveness and responsibility through a carefree day-by-day living. However, it would require the semidetached attitude of asceticism

from civilization by emphasizing the quality of life and in finding human fulfillment in an equilibrium between enjoying and providing pleasure.[42]

It is one of the consequences of man's anthropocentricity that progress must be measured in terms of an increase in the gross national product and in providing man with the bigger, the faster, and the more frequent. Since we have seen how much a constantly increasing standard of living infringes upon the quality of life, we wonder whether such "progress" deserves its name. The term "progress" should rather be restricted to accomplishments from which mankind as a whole benefits, such as a deeper awareness of oneself, a deepening of interpersonal relationships, an increase of the common welfare (including that of future generations), and an enhanced sensitivity for the beauty that surrounds us. To strive for such progress might relieve part of the pressure we place on our environment. It might also slow down the frivolous pace at which we exploit ourselves and our environment. The realization of such a future would also mean an increase in responsiveness and responsibility to God within our environmental matrix. While the dimension of God would come only indirectly into focus for non-Christians, when they reintegrate technical reason into the all-encompassing ontological reason by discovering their responsibility for the whole web of life, this dimension would be obvious for Christians. They would see in a unique way that the realization of true progress coincides basically with the imitation of Jesus of Nazareth.

However, we must also keep in mind the limitations imposed upon any future which can be realized through our own endeavors. But above all we must remember that the incentive to strive for a better future is derived from our hope for a final realization of this future in the eschaton. This means that the goals of our ecological concern can be derived from the imitation of Jesus of Nazareth, while the incentive and the limitations for our involvement can only appropriately be derived from the expectation of Jesus Christ. The proper understanding of the interrelatedness between the imitation of Jesus and the expectation of Jesus Christ can lead us to an appropriate evaluation and to a proper attitude toward our present ecological crisis. It shows that we presently live in an apocalyptic age and that there is reason for hope and not for despair.

NOTES

1. J. Irwin Miller, "Changing Priorities: Hard Choices, New Price Tags," *Saturday Review*, January 23, 1971, p. 36.

2. Albert Rosenfeld, *The Second Genesis: The Coming Control of Life* (Englewood Cliffs,

N.J.: Prentice-Hall, Inc., 1969); Leroy Augenstein, *Come, Let Us Play God* (New York: Harper & Row, 1969).

3. Augenstein (pp. 135–38) is a noteworthy exception. He affirms very strongly that our decisions must be based on fundamental values which are associated with the belief in a creator.

4. Cf. Nicholas Rescher, "A Questionnaire Study of American Values by 2000 A.D.," in *Values and the Future: The Impact of Technological Change on American Values,* ed. Kurt Baier and Nicholas Rescher (New York: Free Press, 1969), pp. 135–36.

5. According to Jacques Ellul (*The Technological Society,* trans. John Wilkinson [New York: Vintage Books, 1964], p. 434) from a survey conducted in 1960 by the Paris weekly *L'express* among notable American and Russian scientists.

6. Ibid., p. 435.

7. Langdon Gilkey in his stimulating study, *Religion and the Scientific Future: Reflections on Myth, Science, and Theology* (New York: Harper & Row, 1970), p. 95.

8. Ibid., p. 94.

9. Cf. Donald Imsland, *Celebrate the Earth* (Minneapolis: Augsburg Publishing House, 1971), p. 17.

10. Cf. the instructive essay by Bruce Wrightsman, "Man, Manager or Manipulator of the Earth," *Dialog* 9 (1970): 213–14. Cf. also the source book compiled by Thomas R. Detwyler (*Man's Impact on Environment* [New York: McGraw-Hill Book Co., 1971]) and the one compiled by William W. Murdoch (*Environment: Resources, Pollution & Society* [Stamford, Conn.: Sinauer Associates, 1971]).

11. Gordon J. F. MacDonald, "Pollution, Weather and Climate," in Murdoch, pp. 330–31.

12. Ibid., pp. 333–34.

13. With reference to these problems the term "pleonexia" seems to have been used first by V. A. Demant (*The Idea of a Natural Order: With an Essay on Modern Asceticism* [Philadelphia: Fortress Press, Facet Book, 1966], p. 39), who advocates a practical asceticism which witnesses to the truth of the maxim: Production is for man, not man for production. According to Demant, such asceticism would be a testimony to the old teaching "that the really satisfying life does not depend upon the number of commodities one can acquire, but upon the fruitful exercise of our inner powers" (p. 39).

14. M. King Hubbert, "Energy Resources," in Murdoch, pp. 102–4.

15. Ibid., pp. 110–12.

16. Ferren MacIntyre and R. W. Holmes, "Ocean Pollution," in Murdoch, p. 250.

17. Preston Cloud in his sobering report, "Mineral Resources in Fact and Fancy," in Murdoch, p. 73.

18. Ibid., pp. 85–87.

19. Most alert men are convinced that overpopulation lies at the root of our whole present ecological crisis. Cf. Frederick Elder, *Crisis in Eden: A Religious Study of Man and Environment* (Nashville, Tenn.: Abingdon Press, 1970), pp. 108–9; and William E. Martin ("Simple Concepts of Complex Ecological Problems," *Zygon* 5 [1970]: 305) convincingly points out that the real problems are population growth and economic growth.

20. Cloud, p. 82.

21. Imsland, p. 74.

22. Cf. ibid., pp. 75–77.

23. Ritchie P. Lowry, "Toward a Radical View of the Ecological Crisis," *Environmental Affairs* 1 (1971): 355.

24. Lynn White, jr., "The Historical Roots of Our Ecological Crisis," first published in *Science* 155 (1967): 1203–7, and reprinted in Detwyler (pp. 27–35) and many other publications.

25. Ibid., p. 31.

26. Ibid., p. 32.

27. Elder, p. 19.

28. Ibid., pp. 160–61.

29. Wolfhart Pannenberg, *What Is Man? Contemporary Anthropology in Theological Perspective,* trans. D. A. Priebe (Philadelphia: Fortress Press, 1970), p. 12.

30. The power of the technocrats and of big business was first eloquently exposed as the cause of our environmental crisis by Rachel Carson in *Silent Spring* (Boston: Houghton Mifflin Co., 1962).

31. Cf. Hans Schwarz, "Theological Implications of Modern Biogenetics," *Zygon* 5 (1970): 260.

32. Cf. Wrightsman (n. 10 above), p. 211.

33. Paul Tillich, *Systematic Theology* (Chicago: University of Chicago Press, 1951), 1:73.

34. Cf. Imsland (n. 9 above), p. 69.

35. Ibid., p. 68.

36. Cf. Lowry, p. 356.

37. We agree with Frederick Elder ("A Different 2001," *Lutheran Forum* 4 [1970]: 10) and with others that the new era will be a time of the "grand slowing down" if measured in terms of increase in material productivity. But this is certainly not the only scale on which progress can be measured.

38. The eschatological dimension of ecology is very clearly pointed out by H. Paul Santmire in his book *Brother Earth: Nature, God, and Ecology in Time of Crisis* (New York: Thomas Nelson, Inc., 1970) when he talks about "the foretaste of the New Creation" (pp. 174–76). He asserts that the overall matrix of the Kingdom of God and his righteousness will allow us to have dominion without exploitation (p. 191). No longer will either nature or civilization provide the ultimate norms of human life, either explicitly or implicitly. Both will be subordinated to the Kingdom of God (p. 182). But again we wonder what he means when he says that nature and civilization will be fellow citizens of the kingdom. Does he, like Elder, advocate an inclusionist view of man?

39. Elder, "A Different 2001," p. 10.

40. Eugen Rosenstock-Huessy, *The Christian Future: Or the Modern Mind Outrun* (New York: Harper Torchbook, 1966), p. 61.

41. Ibid., p. 66.

42. Elder (*Crisis in Eden,* p. 145) has advocated this new asceticism very eloquently. However, he cautions that unlike medieval asceticism this would not involve a withdrawal from the world but simply a new way of acting toward and with the world. The basic elements of this new asceticism are restraint, an emphasis upon the quality of existence, and reverence for life. Unlike Albert Schweitzer, Elder does not understand this reverence for life as a mystic and religious dedication to life, but as "an appreciation for *any* expression of life, based on scientific, aesthetic, and religious considerations" (p. 152).