ECOLOGY AND THEOLOGY:
CHRISTIAN RESPONSES TO LYNN WHITE JR.
A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Geography
by
Mary Aline Duitsman

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The Thesis of Mary Aline Duitsman is approved:

Elliot McIntire

Robert Hoffpauir

Gordon R. Lewthwaite, Chair

California State University, Northridge
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ABSTRACT

ECOLOGY AND THEOLOGY:
A PROTESTANT CHRISTIAN RESPONSE TO LYNN WHITE JR.

by
Mary Aline Duitsman
Master of Arts in Geography

This thesis challenges widely publicized views, as particularly expressed by the late Lynn White Jr., suggesting that Judeo-Christian concepts of man's transcendence and "rightful" mastery over nature have made it possible for Western man to exploit nature for his own selfish purposes. While it is true that Christians have generally treated the earth no differently than their non-Christian counterparts, it is here suggested that exploitation of nature is neither unique to modern man nor precipitated by religious beliefs. Furthermore, critical biblical interpretation reveals a holistic view of man and nature whereby man is called into a relationship with nature based on careful, nurturing dominion, responsible stewardship and a covenantal co-existence that includes nature in the scope of redemption.

In view of the seriousness of our global environmental limitations, current interest in the impact of very human elements affecting man's behavior, and White's own challenge that science alone cannot resolve our world's
dilemma, the Christian community responded, in considerable measure, by carefully examining White's thesis in light of biblical principles and Christian practice. This paper primarily summarizes Protestant response (though not exclusively) and suggests a potential role for theology in the interface between nature and humanity.
CHAPTER I
INTRODUCTION

Environmental pollution and exploitation of the earth's natural resources have escalated to the point where almost everyone would agree that the world is faced with a crisis. The very phrase, "environmental crisis," has become popular in the past few decades. Concern over exploitation of nature is not, of course, an entirely new problem, for periods of increasing uncertainty and even an assumption of impending doom have existed in previous history. Dr. Bob Goudzwaard, economics professor at the Free University in Amsterdam, has pointed out that during the Industrial Revolution, a century ago, "life in the slums of the great cities was wretched because of pollution."¹ In another work he mentioned that "shortages of raw materials are not new: around 1870 the English economist Stanley Jevons was highly concerned about the near depletion of the coal mines in England."² However, today the situation is different. In times past we experienced environmental problems one at a time; today, we are confronted with many problems all at one time and, according to Goudzwaard,

they are interdependent and mutually reinforce one another. Unemployment and inflation now occur together; a shortage of energy aggravates environmental problems and coincides with predictions of serious food crisis.³

Rapid development and acceleration of technology over the
past two hundred years has clearly upset the balance of
nature to the point where the limitations of the earth and
its resources are causing genuine concern among many sec-
tors of the population.

The 1960s brought a widespread awakening of the Ameri-
can public to the crisis. Rachel Carson's *Silent Spring*,
published in 1962, was perhaps the first major work with
popular appeal. Its publication was timely, for the pro-
fessional and policy-making communities were beginning to
grapple with the crisis, the confusing issues involved in
its consequences, and its potential solution.

Five years later, as environmental concern was gaining
momentum, Lynn White Jr. published an article in *Science* on
March 10, 1967 in which he attempted to uncover "The His-
torical Roots of Our Ecologic Crisis." Originally an add-
ress presented before the American Association for the
Advancement of Science (AAAS), in Washington, D.C. on
December 26, 1966, this paper immediately attracted wide-
spread response from many communities—and it continues to
generate response.

White was widely interpreted as launching an attack
on the Western "Judeo-Christian" tradition which, in his
view, has historically taught that nature is separate from
man and designed exclusively for human use. He believes
that Western ideas about nature are deeply rooted in Gene-
sis 1:28, a Scripture in which man, because of his divinely
-derived nature, was granted "dominion over" the earth and
told to subdue it along with everything that moves upon it. Furthermore, by destroying the animism of the pagans and asserting that man transcended the purely natural, Western Christianity in particular fostered attitudes that encouraged humanity to exploit nature with indifference. As White represented that view

Especially in its Western form, Christianity is the most anthropocentric religion the world has seen.... Man shares, in great measure, God's transcendence of nature. Christianity...not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends.... By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects.... Our science and technology have grown out of Christian attitudes toward man's relation to nature.... We are superior to nature, contemptuous of it, willing to use it for our slightest whim.... We shall continue to have a worsening ecological crisis until we reject the Christian axiom that nature has no reason for existence but to serve man.... Both our present science and our present technology are so tinctured with orthodox Christian arrogance towards nature that no solution for our ecologic crisis can be expected from them alone.

Whether or not that was his intention, White's attack jolted many individuals and groups. He not only impugned the general tradition of Western Christianity but the explicit content of the early chapters of Genesis. As he phrased it,

Christianity inherited from Judaism not only a concept of time as nonrepetitive and linear but also a striking story of creation. By gradual stages a loving and all-powerful God had created light and darkness, the heavenly bodies, the earth and all its plants, animals, birds, and fishes. Finally, God had created Adam and, as an afterthought, Eve to keep man from being lonely. Man named all the animals, thus estab-
lishing his dominance over them. God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purpose. And, although man's body is made of clay, he is not simply part of nature: he is made in God's image.5

Given both the general contents of the statement and the particular rendition of early Genesis which it included, it was virtually impossible for the Christian community to ignore. Whether read as tinged with hostility or as a friendly stimulus, it necessarily involved questions of biblical interpretation and practical action.

White was not alone in such views. Ian McHarg, Richard Means, Harvey Cox and other contemporary writers lent some support to his view, which is not entirely new. One hundred years prior to White, George Perkins Marsh wrote *Man and Nature* (1864), perhaps the first detailed work describing man's destructive use of the planet. While Marsh believed that all of nature, man included, was designed by an omniscient Creator and that man was to rule over, subdue, and cultivate the earth, he also emphasized that man was to do this as a wise steward. Man was given the privilege of using the earth so far as it was compatible with the preservation of the earth: it was not to be destroyed. The earth, as Marsh put it, was given to man for "usufruct alone, not for consumption, still less for profligate waste."6 Marsh also emphasized that man, as a free moral agent, has potential to affect the environment for good as well as for ill, though the purpose of
Man and Nature was to draw attention to, and warn about, the destructive impact that Marsh observed. Forseeing the now-apparent results of man's abusive control, he wrote that the earth was

fast becoming an unfit home for its noblest inhabitants and, another era of equal human crime and human improvidence...would reduce it to such a condition of impoverished productivity, of shattered surface, of climatic excess, as to threaten the depravation, barbarism, and even extinction of the species.7

Marsh's studies gained him fame and wide recognition both in Europe and in America. Yet, according to Glacken, "his work was submerged in the tide of opinion which saw progress everywhere in the beneficient command which man had attained over nature."8 Especially in America, where the need for conservation was not as evident as in the Old World, Man and Nature was not seriously examined for some decades. In the 1930s Carl Sauer and others at Berkeley had carefully reviewed it, in 1955 eighty scholars drawn from various sciences gathered at Princeton University for what Sauer dubbed "The Marsh Festival," a symposium on "Man's Role in Changing the Face of the Earth."9

White's article, unlike Marsh's work, was in tune with the times. By 1967 the public was much more aware of the crisis and academics had begun to concern themselves with this age-old problem, now grown to enormous proportions. Even the professional Christian community had begun to take note. In the fall of 1965, a year and a half before White issued his statement, a group of American Christians and
Jews, the "Faith-Man-Nature Group," stated that they were concerned about religious impoverishment in the face of... environmental abuse and resource use because of intellectual weakness of their theologies and the paralyzed state of their religious ethics.10

Their founding principle was the encouragement of partnership between theologians and environmental scientists in an effort to "provide channels for basic scholarship and creative thought for building explicit, sensitive Judeo-Christian approach to the environment."11

White's article was also timely for another reason: he caught the attention of the nation's scientific leaders at a time when they were gaining respect for, and placing greater emphasis on, the study of historical processes and the impact of very human elements on the pursuit of science. In this, White's emphasis was consistent with trend of thought among geographers and others. Modern geography stands among those sciences which, as James Houston expressed it in his Social Geography of Europe (1963), seeks to "correlate and integrate the relationship of man and his world."12 As Houston goes on to say, human geography is increasingly emphasizing historical methods rather than the "enforced analogies of scientific laws."13 Likewise, Clarence Glacken has graphically expressed the importance of an historical approach for new insights, for

The earth has felt the touch of man in ways which can be understood only by following the devious paths he has taken. The ideas and observations of the past suggest what these paths were - and where they led - and therefore will be a continuing
source of new insights into the historical processes which have brought the earth to its present condition.14

The philosopher of science, Michael Polanyi, in his analysis of the processes of knowing, also stresses that

Since the end of the nineteenth century there has been a continuous philosophic movement on foot claiming that the humanities, and history in particular, must be studied by other methods than those of the natural sciences.15

Unprecedented moral dynamism that has increasingly characterized man's social and political aspirations for the last century or more has created a dilemma for the modern scientific mind to examine. Polanyi, while postulating what he considers a more realistic and workable alternative to the present formalized scientific rules of inquiry, argues that

A humanistic revisionism can be secured only by revising the claims of science itself.... Any attempt to gain complete control of thought by explicit rules is self-contradictory, systematically misleading and culturally destructive.16

Thus White's hypothesis, linking an historical framework of thought to the use and abuse of science and technology, came at a receptive time. It provided a suitable and stimulating matrix which induced many communities, including religious ones, to initiate a search for solutions.

Many fields have begun to deal with the interface between man and nature, and, while the interaction between White's school of thought and theological viewpoints
expressed within the Christian community may not be so central an issue as White thought, it is nevertheless an issue of significance. The interface between science and religion is as old as history and it will doubtless continue to confront us. Even geography students are beginning to be presented with contrasting approaches to the relationship of ecology and Christianity in their introductory textbooks. In distinct contrast to White, Stansfield and Zimolzak present the Judeo-Christian ecological view as essentially responsible rather than exploitative.

The middle of the road view, perhaps the majority view, is that the human race is part of nature, neither passive observers of a perfect, untouched environment, nor reckless users and abusers of it. The Judeo-Christian ethic apparent, if not always recognized as such, in the Western approach to the natural world and its resources features the concept of responsible stewardship. Use is implicit, but so is conscious recognition of responsibility to future generations of people and the protection of life-forms against wanton destruction or oblivion.17

Spencer and Thomas, in speaking of the conquest of the material world, even contend that religions, early Christianity included, obstructed even reasonable use of the earth.

The modern concept does involve altering the ancient dogmas of Buddhism and Taoism, and of early Christianity, that the earth belongs to God and that man is on it to suffer mean and renunciatory existence in the glorification of God.18

However, a different emphasis appears elsewhere in their book. In referring to the ecology of early Southern Cali-
In a familiar setting, the Spanish readily introduced their technology, which made possible a productive agriculture based on domestic plants and animals and the use of gravity-flow irrigation, on Spanish schemes of settlement, their architectural styles, their place-names, systems of water rights, and systems of land tenure. The Spanish evaluation of the natural environment followed Judaeo-Christian thought, which distinguished man from nature as epitomized in the injunction of the Deity that man not only should be fruitful and multiply, but that, in addition, he should: "fill the earth and subdue it: and have dominion..."  

Jordan and Rowntree in their work, The Human Mosaic: A Thematic Introduction to Cultural Geography (second edition), agree with White in their comments on

This Judeo-Christian view of the earth [which] remains with us today. We still refer to even the most blatant butchery of the land as "development" and to the dwindling wilderness areas as "undeveloped." With such a religious heritage, the Western world may be unable to acquire a conservationist outlook quickly enough to prevent an ecological catastrophe. A religious world-view thousands of years old is not easily rooted out.  

However, it is noteworthy that Jordan and Rowntree, in their third edition, toned down their statements considerably—which could indicate some modification of their opinions—perhaps in the light of viewpoints expressed by others, particularly Yi-Fu Tuan whom they cite. In explaining that religious views help determine the extent to which humans modify the environment, they refer to White's thesis, stating that
Teleologists believe the earth was created especially for humans.... Within the teleological view is the belief that humans are not part of nature, but are separate, forming one member of a God-Nature-Human trinity.... Believing that the earth was given to humans for their use, Christian thinkers in medieval Europe adopted the view that humans were God's helpers in finishing the task of creation.... Small wonder that the medieval period in Europe witnessed an unprecedented expansion of agricultural acreage, involving the large-scale destruction of woodlands and drainage of marshes.21

In this they are in accord with White, but they then point out that others such as Yi-Fu Tuan are in partial disagreement with White, arguing that environmental destruction is not so much an expression of religious teaching as an expression of a "discrepancy between the stated ideals of religions and reality."22 Other ecologists too, they say, point out that the Judeo-Christian tradition is not lacking in concern for environmental protection. In the Book of Leviticus, for example, farmers are instructed by God to let the land lie fallow one year in seven and not to gather food from wild plants in that "sabbath of the land."23

Throughout the past centuries Judeo-Christian teleological views concerning man and nature have endured in the face of "The Enlightenment" and the development of modern scientific views. Clarence Glacken, after detailing Judeo-Christian viewpoints concerning God, man and nature in *Traces on the Rhodian Shore*, concluded that:

The influence of religion thus spreads far beyond ethics, philosophy, and theology; gathering evidence of the existence of God from observing the natural order, it brings geography and ethnology within its purview,
often determining the framework within which the great themes of cultural history and human geography have been studied. 24

According to Glacken, the planet's rule by dieties is a very ancient concept going at least as far back as Sumeria, for man has continually sought to account for the order he believes he perceives in the universe and rejected the notion that either humanity or his natural surroundings are the result of random events. 25

What is most striking in concepts of nature, even mythological ones, is the yearning for purpose and order; perhaps these notions of order are basically analogies derived from the orderliness and purposiveness in many outward manifestations of human activity; order and purpose in the roads, in the grid of village streets and even winding lanes, in a garden or a pasture, in the plan of a dwelling and its relation to another. 26

But whether derived from such a source or not, man continually seeks to explain this real or assumed order and Glacken maintains that religion will continue to influence, in one form or another, views on man and nature. And so the interface between geographical understanding and religion continues.

Today, then, at least some scientists are aware of persistent and perhaps irremovable difficulties occurring in the interface between the "scientific" viewpoint, epistemology, and ineluctably human factors, and the world seems in need of a holistic view encompassing man and nature. A deepened understanding of the interface between man and nature is urgent, and closer attention to harmonious functioning with the planet is necessary if we are
to reverse our destructive course. White has stated that man!'s destructive relationship is inherited from Judeo-Christian teaching, and offers an interpretation of the biblical creation story which supports this thesis. His interpretation of that story has been widely challenged, as has his more general point that the Judeo-Christian tradition in general is responsible for the admitted insensitivity of many Westerners to ecological considerations. Several issues are thus entangled, issues of Biblical interpretation, of the Judeo-Christian tradition and Western Christianity in general, and of actual practice. For principles and practice may be very different, though it is White's argument that at least in this matter they are closely linked. According to White, a damaging approach to the earth is "rooted in, and indefensible apart from Judeo-Christian teleology." It is such affirmations that have provoked such retorts as A.R. Peacocke's statement that for proof

It would be necessary to show that men in the Judeo-Christian tradition have uniquely generated the eco-disasters of our planet; that an exploitative view of nature was actually and generally held in that tradition; and that this tradition actually does involve such an exploitative view.

Yet, in view of the seriousness of our global crisis, current interest in the human factors that affect environmental relationships, the acknowledged impact of Judeo-Christian views on man and nature through history, and White's own challenge that science alone cannot resolve
the dilemma, it seems imperative that we take a fresh look at Christian belief and practice.

In fact there is already a substantial body of literature which incorporates some response to White's thesis, in whole or in part. Works written by theologians include *Pollution and the Death of Man* (1970) by Francis Schaeffer, *The Church and the Ecological Crisis* (1972) by Henlee Barnette, and *World and Environment* (1978) by Odil Hannes Steck. A number of professional geographers have also responded: James M. Houston's paper on "Man and the Physical Environment" (no date) and *I Believe in the Creator* (1980); Yi-Fu Tuan's *Man and Nature* (1971), *The Hydrologic Cycle and the Wisdom of God: a Theme in Geoteleology* (1968), "Our Treatment of the Environment in Ideal and Actuality" in the *American Scientist* (1970) along with numerous other writings; David Livingstone's "Natural Theology and Neo-Lamarckism: The Changing Context of Nineteenth-century Geography in the United States and Great Britain" in *Annals of the Association of American Geographers*, (1984); David Ley, Marwyn Samuels and Iain Wallace in *Humanistic Geography: Prospects and Problems* (1978); Henry Aay in "Geography: Calling and Curriculum" (1976) and others. In addition, there were writers from many other fields of study, for instance the Irish geologist, Ronald Elsdon, the Dutch economist, Bob Goudzwaard, and the Nobel Prize-winning biologist, Rene Dubos. These men, along with others, represent a broad spectrum of
Protestant Christian opinion who respond, more or less directly, to White's charges; analysis of Catholic response would doubtless expand the issue much further. Here, we will attempt only to review and summarize the response of the Protestant Christian community to White's attack, a response formulated at a time when cooperation between religion and the secular world seems scarcely a matter of choice if the welfare of man and the planet are in view.

The volume of Christian literature which seeks to answer White and his supporters is great, and it runs the full spectrum from emotion-packed defensiveness to open-minded, objective evaluation. None of the statements by White's supporters received the volume of emotion-packed response that White's did. In a personal letter, Lynn White stated that:

I wish that I had systematically saved all responses to that essay. They ranged from an Anglican (American) bishop who wrote, "I have read your article with fascination and it deeply disturbs me!" to pieces of brown paper bags scribbled anonymously in pencil and calling me a limb of Satan.29

What many emotionally-involved respondents did not seem to realize was that White was speaking as an historian convinced that peoples' behavior reflects deep-seated thoughts and traditions. They also failed to realize that his statement in Science was a paper compressed for a fifty minute plenary session at the Annual Meeting of the American Association for the Advancement of Science.
According to White, "the time limitation was strict, and on a topic like that much had to be omitted." Yet there was considerable quality research behind the paper, and in spite of the negative emotion and even antagonism that may have been aroused, there was considerable and defensible thought involved, and a careful response was sometimes given. A review of Protestant Christian literature indicates that four issues keep surfacing. What, in fact did White say? What is the Judeo-Christian biblical view? What, in practice, has happened? And how, if possible, can the different spheres of science and religion be joined together? These questions must all be borne in mind as we seek to understand the dialogue.
NOTES


3 Ibid.


5 Ibid., pp. 24-25.


7 Ibid., p. 43.


11 Ibid.


13 Ibid., p. 13.

14 Glacken, op. cit., p. 88.


16 Michael Polanyi, Knowing and Being (Chicago: University of Chicago Press, 1969, pp. 46, 156.)


19 Ibid., p. 550.


22 Ibid.

23 Ibid., p. 185.


25 Ibid., pp. 4-5.

26 Ibid., p. 3.


29 Letter received from Lynn White Jr., 24 July 1984.

30 Ibid.
CHAPTER II

THE HYPOTHESIS STATED: LYNN WHITE'S VIEWPOINT

Before the discussion is fully joined, it may be best to take a close look at White's actual statement. As a historian, White is basically addressing the ecological problem from the premise that all too little is known about what has really happened to the world ecological system in the past. It is a safe assumption that people have generally been a dynamic element in shaping their environment, though, as White himself states, "in the present state of historical scholarship we usually do not know exactly when, where, or with what effects man-induced changes came." But the merging of science and technology about four generations ago has intensified the human impact on the planet to the point where the life-sustaining qualities are changing negatively and life itself is in ultimate danger; no one knows quite what to do about it, but, as a starting point, White proposes an in-depth historical look at "the presuppositions that underlie modern technology and science."

Modern science and technology, says White, are "distinctively Occidental" because they "got their start, acquired their character, and achieved world dominance in the Middle Ages. Therefore, in order to understand the nature and impact of science and technology on ecology, it is necessary to examine the fundamental medieval view of
man's relationship to nature because human ecology is "deeply conditioned by beliefs about our nature and destiny - that is, by religion." Christianity has triumphed over paganism in the Western world and White claims this to be "the greatest psychic revolution in the history of our culture." The possibility of progress, unknown to Greek, Roman or Oriental cultures, is explicitly rooted in the Judeo-Christian tradition.

Up to this point, the argument seems to have provoked little discussion: the little reference that does appear seems to be in agreement with White's statements. However, White goes on to claim that this faith in perpetual progress is the by-product of the Old Testament linear creation account whereby God created all things in stages culminating with man, the crowning element, who was given dominance over the lesser animals, thereby relegating nature to the service of man's purpose. Christianity, especially in its Western form, incorporated a dualism of man and nature and also "insisted that it is God's will that man exploit nature for his proper ends." Through the destruction of the animism and pagan faiths, Christianity made possible the exploitation of nature "in a mood of indifference." When, between the thirteenth and eighteenth centuries, scientific research was undertaken, it was motivated by religion: it sought to understand God's mind through its discoveries of the operation of the universe. Thus, "modern Western science was cast in a
matrix of Christian theology" and this dynamism of
religion, shaped by the Judeo-Christian dogma, gave
science its impetus. Religion, according to White, has
continued to penetrate both science and technology in
modern times. Therefore, Christianity bears a "huge bur-
den of guilt" for the magnified powers that have brought
on the current ecological crisis.9

As far as a solution is concerned, White believes it
must include the religious component since "the roots of
our trouble are so largely religious."10 White believes
the crisis will continue to worsen until we "reject the
Christian axiom that nature has no reason for existence
save to serve man."11 Therefore, we must rethink our
religion or find a new one. In conclusion, he suggests
that the Franciscan "spiritual autonomy for all parts of
nature may point a direction" and proposes Francis of
Assisi as "a patron saint for ecologists."12 Interest-
ingly, according to the New York Times (1980), Pope John
Paul II has indeed formally proclaimed St. Francis of
Assisi as "patron saint of Ecology."13

White's interpretation of early Genesis was the major
issue that evoked response from Christian writers because,
whether or not his words expressed his personal beliefs,
White's paraphrase presented Scripture as teaching that
nature was divinely created solely for man's benefit.
"God planned all this explicitly for man's benefit and
rule: no item in the physical creation had any purpose
save to serve man's purpose."

Since the Bible is, after all, a major source of Christian doctrine and teaching, and since White postulated the inclusion of religion in the solution, Christian writers naturally first turned to a reexamination of the relevant Scriptures and a rethinking of the place of nature in theology. The remainder of this chapter therefore will review Christian responses to White on this major issue. Does White's statement accurately present the biblical account? And does that account indeed support an exploitative approach to nature? There are, of course, further questions as to what some thought the Bible said and sanctioned, but, however significant, that was not the immediate issue in White's statement or the central point in most attempts at rebuttal.

In supporting his thesis, White presented what many perceived, rightly or wrongly, to be a somewhat tendentious interpretation of Genesis 1:26-28, with emphasis on the command to have dominion over and subdue the earth. His paraphrase of this Scripture generated much response from Christian scholars and hardly an article was written that did not address White's interpretation of Genesis. If it achieved nothing else, White's critique impelled those who felt challenged to respond to serious questions. Does the Bible really imply that the earth is designed solely for man to rule over according to his whim as White has charged?
Inevitably the issue turns on what some may view as fine points of biblical interpretation as well as on the presuppositions or disposition of the audience. At a time when Billy Graham could quote a survey indicating that over half of those who said they believed the Bible seldom if ever read it, and Pat Robertson could cite this fact as an explanation of "the strange dichotomy...between our profession of faith and the content of our belief structure," it seems unlikely that many in White's audience, knowledgeable about science but not necessarily theology, would challenge him on a point of biblical interpretation. He was, after all, a distinguished historian of science who happened to be the son of an Episcopalian minister. But Christian scholars could scarcely let White's interpretation pass unchallenged, especially as they viewed it as questionable in its particulars and potentially misleading to the wider audience. There was natural concern in more informed circles that White's interpretation of Genesis 1, which they viewed as incorrect, would be accepted as fact by the many who heard and read his statement, and many writers sought to put forth a systematic biblical account of man's created relationship to nature. Historical setting, literary genre, and textual content all have to be taken into account in seeking the meaning of early Genesis 1.

The Bible is an ancient book with certain qualities and characteristics that tend to differentiate it from
other literature and make it difficult to understand. It has a long, uninterrupted heritage, recording events which span 6,000 years, in essence a library of 66 different books written over a period of 1600 years by 40 different authors. But, in Christian understanding, it centers on one story—the story of God's eternal design for all things and His interaction with man (rather than nature) to redeem a polluted world. This sequence begins in Genesis with the advent of the world, nature and humanity and moves through time to a finale in Revelation.

In attempting to examine the Bible's contents, there are two considerations important to this paper. First, since the Bible is here viewed as a continuous story with a single message, it should be read, like many other books, as a whole. Although not all would agree that the Bible is an absolute unity, the holistic approach necessitates careful comparison of one Scripture with another. One of the evident concerns is that White and those who agree with him do not seem to take such an integrated view. For example, White does not include the doctrine of the Fall which follows closely on the passage he paraphrases: it has been a commonplace in Protestant teaching that "dominion" can have a different impact if coupled with the fallen and unfallen states of man—positive in one and negative in the other. For the holistic approach, a statement interpreted out of context leads to limited and/or distorted interpretation. Second, much of the Bible was
written over 2,000 years ago in ancient languages. For this reason careful and critical exegesis is most appropriately carried out by scholars proficient in the biblical languages.

In light, then, of a widespread lack of familiarity with the Bible as a whole, not to mention its precise text, there is an evident need for scrupulous examination and interpretation of its content. But at least two aspects are evident in the response to White. At one level, the response has focused on the alleged difference between White's restatement of Genesis and the text of Genesis itself, and at another level attention is centered on Judeo-Christian teaching as often understood (or misunderstood) by a significant section of the populace, and the practical consequences of that understanding. At the textual level, some clearly feel that White can be faulted, but at the practical level some have found themselves in at least partial agreement. These two issues are not completely separate. If in fact Judeo-Christian teaching, based on an inaccurate understanding of Scripture, has encouraged exploitation of nature, careful re-examination of the Scriptures could lead to a recovery of original meanings that would help correct negative Christian teaching on man's relationship to nature. And, if Christian teaching has had a negative affect on nature to date, could it not over time have a positive influence if the negatives are corrected?
White's interpretation of Genesis 1 seems understandable when one considers widespread "Christian behavior" involving nature. Judging by published writings this was a widespread consensus, which will be discussed more fully later. Pat Robertson expressed the conclusions of many who responded to White by affirming that there is definitely a dichotomy between the Christians' profession of faith and the content of their belief structure. In Pat Robertson's words, "Our view...of man's relationship to the environment...can only be redefined in light of a clear understanding of all the Scriptures." The challenge offered by White and others definitely sensitized the Christian community to the need for accountability and reassessment in its theology. At least the "thinking class" has responded in force: his accusation has had a positive effect and some interesting redefinition of terms or at least shifts of emphasis have resulted from the search for clarification of early Genesis. This positive response calls for review.

Genesis 1, perhaps one of the most widely known chapters in the Bible is, as has been seen, the focal point for White's hypothesis. In his interpretation, verses 26-28 epitomizes a view which is responsible for an exploitative acceleration of science and technology which has created our present day crisis; questions of mode or origin are not here the issue. Man's relationship with the rest of creation, which has recently come into focus, has
always been included among the themes of early Genesis, as Christian scientists such as James Houston and Richard Bube contend. Houston claims that Genesis 1 "is not a primitive account of 'how' the universe began, but about 'who' brought all things into being." Christians, he believes, have often been misled...by too much emphasis on the doctrine of 'creation out of nothing'.... an emphasis which tends to turn our attention towards how the creation was formed, and to speculate as to the nothingness from which it was formed.

Houston is convinced that many Christians have fruitlessly focused their energies on the wrong issues in Genesis 1 rather than perceiving the central purpose, namely knowledge of the Creator and an understanding of the relationships He has ordained. In his mind the biblical concept of creation is impossible for the human mind to understand in scientific-historical terms, because it can be understood only through the eyes of faith by those who have first come to believe in this Creator. Therefore, he concludes, "the Bible does not defend any particular picture or 'world-views'... Creation thus can never be a rival hypothesis to the latest scientific theories." In this sense, White's attack has successfully drawn Christian attention to the true emphasis on Genesis 1. Hopefully, this focus on relationship will continue to gain acceptance in both the religious and scientific communities and man can begin to unlock the important mystery of relationship,
the links that make things work together and the means by which they can be sustained. Yi-Fu Tuan has stated that without understanding ourselves, our perceptions, attitudes and values, "we cannot hope for enduring solutions to environmental problems, which are fundamentally human problems."²²

Although Genesis 1 was never directly quoted by White, he tersely paraphrased and interpreted verses 27 and 28 using Genesis 2:18-22 to qualify and substantiate his exegesis and thesis. Before quoting and reviewing White's paraphrase, let me first quote the verses in Genesis 1 and 2 as they appear in the Revised Standard Version. Although not necessarily the most accurate translation, it is a widely read version which uses the terms "dominion" and "subdue" utilized by White.

So God created man in His image, in the image of God he created him; male and female he created them. And God blessed them, and God said to them, 'Be fruitful, multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth.... Then the Lord God said, 'It is not good that the man should be alone; I will make a helper fit for him.' So out of the ground the Lord God formed every beast of the field and every bird of the air, and brought them to the man to see what he would call them; and whatever the man called every living creature, that was its name. The man gave names to all cattle, and to the birds of the air, and to every beast of the field; but for the man there was not found a helper fit for him. So the Lord God caused a deep sleep to fall upon the man, and while he slept took one of his ribs and closed up its place with flesh; and the rib which the Lord God had taken from the man he made into a woman and brought her to the man.²³
These are the verses, then, which White adapted as follows:

Finally God had created Adam and, as an afterthought, Eve to keep man from being lonely. Man named all the animals, thus establishing his dominance over them. God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purpose. And although man's body is made of clay, he is not simply part of nature: he is made in God's image.  

The tone of this exegesis, here and elsewhere in White's paper, may have contributed somewhat to the reaction it aroused, but the main point of dispute was a seeming addition to the original thought, White's statement that all was explicitly for man and had no other purpose (writer's underlining) save to serve man's purpose. Coupled with the assertion that Christianity "insisted that it is God's will that man exploit nature for his proper ends" this created the impression that White had given an added twist to the biblical account that was not there, and used that addition to strengthen his argument that Western Christianity in particular "bears the huge burden of guilt" for the ecological crisis. Although this exegesis does not explicitly state that God planned nature solely for man's benefit to exploit, one could easily draw the implication when it is combined with the statements that "no item in the physical creation had any purpose save to serve man's purpose" and "Christianity...insisted that it is God's will that man exploit nature for his proper ends." White's exegesis therefore, not only...
deserves review, it demands one. It could lead to the suspicion that he interpreted the Scriptures to prove his hypothesis, and many have questioned his ability to present Christian dogma faithfully and accurately. In the views of many biblical scholars, discovering the real meaning of the text would involve comprehension of the nuances of ancient languages in the context of their time, or at least recourse to those who had such understanding, along with an effort to relate the text to other portions of the Scriptures. Relevant passages of Genesis need to be put into context, and compared with other passages such as those in the "Wisdom literature," Psalms and Prophets. For many biblical students, interpreting a single text or section by itself inevitably involves a fragmented view of the Bible. This practice is all too commonly used by lay Christians, though White is both a "churchman" and a historian of human thought.27

Because Western attitudes towards nature have developed over the centuries, it is impossible to completely understand the actual conditions of their formation. White himself asserts that "in the present state of historical scholarship we usually do not know exactly when, where, or with what effects man-induced changes came."28 Loren Fisher suggests that it is very easy to see "how this popular first chapter of the Bible has become a 'proof-text' for Christians seeking to undergird their views on man over nature."29 Proof-text interpre-
tation, of course, is all too often used, and White, if inadvertently, may have underscored the need for objectivity in interpretation. Biblical scholars firmly applying the rules of exegesis have recently addressed such questions as the alleged insistence that man was to exploit nature for his proper purposes and that nature had no other purpose than the service of man. Some have raised the question as to whether the reverse may not have been intended—man created to care for the earth and benefit thereby.

Reconsideration of such issues could serve to correct some notions about teleology which have been historically held, and could lead to a more accurate definition of the Judeo-Christian framework for man-nature relationships or prove, by contrast, the validity of any ecological understanding based on the Bible. The implications are notable for both Christian and non-Christian elements in the community. From the viewpoint of biblical Christianity, "God's plan" could scarcely be God's plan if it ensured the planet's exploitation and even demise: His creation would then not appear to be for His glory or the benefit of man and nature. Other biblical affirmations about this world (and the next) would become equally suspect for the Christian, and certainly the Bible would not contribute towards harmony between man and nature or towards a workable solution for the planet. Since White, with his reference to the potentially constructive role of religion, left the
question open as to whether or not the Bible contained positive elements favoring the development of a new attitude and strongly suggested a reconsideration of Western religion, some Christians willingly accepted his challenge.

Many writers, while agreeing that Christian tradition has not explicitly formulated a theology of nature, concede that exploitative behavior has indeed characterized many Christians. Though they have taken issue with White's exegesis they have also taken issue with the neglect and abuse White castigates and insisted that the Bible be re-examined and applied. In the opinion of Carl Amerding of New College, Berkeley, "it should be noted that many who claim to follow Christian tradition are, in one way or another, supporting the contention made by White." Hence, he remarks, this points to a general need in the over-lapping Christian and scientific communities to consider whether or not the Bible does in fact support an exploitative approach to nature. Similarly Donald Gowan, a professor of Old Testament studies, summons everyone to read the biblical and historical data more fairly:

> Genesis is under fire again — this time from the ecologists. A popular proof-text on which to blame the environmental mess we are in is Genesis 1:28.... I propose a defense, indeed a counter-attack.... It is not, to be sure, an attack on the ecologists and their concerns; on those I am with them all the way. It is rather an attack on an inaccurate reading of the Bible and of history and a plea for a more helpful reading of both in terms of the present environmental crisis.

Such statements indicate that at least some elements in the
Christian world are both aware of the problem and the need for openness and objectivity, willing to re-examine past teachings and enter into dialogue with the wider community. Where fair-minded inquiry prevails, some interesting insights emerge, and the point and counterpoint of the argument—the issue as to whether or not the Bible, and early Genesis in particular, supports an exploitative approach to nature—calls for discussion.
NOTES

1 Lynn White Jr., "The Historical Roots of Our Ecolo­
logic Crisis," in Western Man and Environmental Ethics,
ed. Ian G. Barbour (Menlo Park: Addison-Wesley Publishing
2 Ibid., p. 21.
3 Ibid., pp. 21, 23.
5 Ibid.
6 Ibid., p. 25.
7 Ibid.
8 Ibid., p. 27.
9 Ibid.
10 Ibid., p. 30.
11 Ibid., p. 29.
12 Ibid., p. 30.
13 "Pope John Paul II Formally Proclaims St. Francis of
Assisi the Patron Saint of Ecology," New York Times,
7 April 1980, p. 3.
14 White, op. cit., p. 25.
15 Ibid., p. 28.
16 Billy Graham, "Foreword," in What the Bible is All
About by Henrietta C. Mears (Glendale: Regal Books, 1966).
17 Pat Robertson, "The American Church at the Cross­
p. 8.
18 Ibid.
19 James M. Houston, I Believe in the Creator (Grand
20 Ibid., p. 51.
21 Ibid., pp. 46-47.


24 White, op. cit., p. 25.

25 Ibid., pp. 25, 27.

26 Ibid., p. 25.

27 Ibid., p. 28.

28 Ibid., p. 19.


CHAPTER III
MAN AND NATURE: THE BIBLICAL CONCEPTS

White's exegesis, as previously quoted, makes four assertions: (1) God created Adam, and then Eve to keep Adam from getting lonely, (2) Adam's naming of the animals established his dominance over them, (3) God planned all creation "explicitly" and exclusively for man's benefit and rule, and (4) man is made in "God's image" as well as being part of nature.1

The first two allegations, taken from verses in Genesis chapter 2 seem not to have been questioned, and received, at most, a few passing comments in the literature reviewed. It appears that Christians either agreed with White on these points or saw nothing sufficiently questionable to warrant their attention.

White's third and fourth allegations were taken from the verses in Genesis 1. These statements are functionally related and are usually discussed together in the literature. White himself hints at their inter-relatedness, linking his third and fourth statements with an "and":

God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purposes. And, although man's body is made of clay, he is not simply part of nature: he is made in God's image.2

There may be some ambiguity in this conjunction of sen-
tences: the thought that man is made in God's image is coupled with the thought that the rest of creation had no other purpose but to serve him. But the second statement does not necessarily follow from the first, either in Scripture or in logic. Admittedly, human uniqueness, dominion, and relationship with the natural world are linked together. Loren Wilkinson referred to this interrelatedness with the statement that: "This uniqueness in what humans 'are' is borne out by a uniqueness in what they are told to 'do.'" But does this uniqueness imply, as White asserts, that creation is designed solely for human use? That is another and major issue of biblical inquiry. Does the Bible, in fact, teach that God planned nature explicitly for man's benefit? And did He "insist" that man "exploit nature for his proper ends"? Answers to these questions depend upon initial clarification of the biblical intent concerning man's true created nature.

Throughout the material reviewed, it was evident that some polarization existed between those who placed their emphasis on biblical man as a higher order of creation than the rest of nature, and those who saw him as an integral part of nature moulded from the dust of the earth. Those who emphasized that man was an integral part of nature were generally more sympathetic with White. Those who emphasized that man was superior to nature were generally more defensive, and sought, not always successfully, to play down this inherent dualism to an ecology-
conscious generation. Frederick Elder, in his book *Crisis in Eden* (1969), articulated these two emphases with the terms "exclusionists" and "inclusionists". The exclusionists think of nature as separate from man and view men almost exclusively in terms of their relationships with each other and God and give only scant attention to man's relationship with nature. In spite of attempts to soften this view by an increase of attention to nature, exclusionists remain firm about man's special place in creation. Exclusionists are strongly represented among traditional Christians who cannot entirely merge man (as created in the image of God) with the rest of creation. Inclusionists, on the other hand, place less stress on man's transcendent nature as a separating element and think of man in his environment as an inextricable part of a total nature. They attempt to find their roots in Saint Francis of Assisi, in some elements of John Calvin's teaching, and in the thoughts of Reinhold Niebuhr, each of whom had a healthy reverence for the earth. However, Saint Francis' thoughts can be viewed as hinting at a return to pantheism which, according to most, is incompatible with the Bible. The Bible unequivocally affirms the sole divinity of God. The self-existent God created nature which reflects His "eternal power and deity" (Romans 1:20) but it is a reflection: it is not in itself divine. Man, in a more particular sense, is presented as created "in the image of God," but he is a creature, not inherently divine. Saint
Francis' idea of equal value for all creatures, including man, was substituted in reaction against the idea that man's rule over creation was limitless. However, Francis Schaeffer expressed the opinion that pantheism is not going to solve our international ecological problem. St. Francis' concept, as presented by Lynn White, is not going to solve it—the concept that everything is equal and everything is spiritually autonomous—because it is obvious in practice that man really does have a special role in nature that nothing else has.6

Carl Reidel further argues that pantheism, with its merger of divinity, man, and nature, does away with the categories and distinctions which are essential to a proper ecological perspective. The science of ecology, he says, defines the interrelationships between living organisms and their environment that have given us our emerging environmental understanding. Ecology depends on our ability to define the subtle distinctions that exist in the natural world. We gain a new appreciation for the worth of every individual organism in the creation, from the smallest microorganism to the largest mammal. Pantheism, whether scientific reductionism or White's new religion, is unable to affirm such distinctions.7

Reidel goes on to argue that we can honor the lesser creatures by understanding and respecting their niche in creation, not by romanticizing or seeking a common essence that destroys the distinctions between man and the natural world. John Calvin, another theologian named by inclusionists in support of their views, basically believed that the world was created chiefly for the glory of God and the sake of man, even though he had a great respect for nature
by itself. Therefore, he does not fit squarely in the "inclusionist" category. Carl Amerding calls Calvin's theology "Biblical anthropocentrism combined with the necessary attitudes for dealing with today's heightened concerns." Yet, of all the Reformers, it is Calvin's theology that frames most present-day progressive Protestant thinking on ecology. Neither inclusionists nor exclusionists are able to successfully support their viewpoints from the Scriptures, and their arguments are often considered futile and narrow-minded by others: both seem to be seeking to support preconceived ideas and attitudes. Rather, in balanced Christian theology, man is both transcendent and part of nature. The solution lies neither in defining his transcendence alone as some exclusionists do, nor in "naturalizing" his personhood in inclusionist philosophy. Genesis depicts man as both shaped from the dust of the earth and in-breathed by God, and, according to Gowan.

neither strict inclusionist nor strict exclusionist views are in full accord with the Bible; Genesis affirms both man's lordship over nature...and his inescapable relationship with nature.9

In some respects there is an equality between man and nature but any attempt to downplay or erase the distinction between man and nature is viewed by Christian philosophers as fundamentally inconsistent with both the content of their faith and some elements in the ecology movement. Viewed from Christian perspective, the movement to merge
man entirely with nature is incompatible with experience and Scripture. The sociologist Langmead Casserley challenges the recent tendency to "undermine and overthrow the civilizing and energizing distinction between man and nature by compounding man with nature in a new way": in Casserley's view, primitive man used to "animate the inanimate" and people "the earth and the skies...by beings fundamentally akin to himself"--hence the so-called "pathetic fallacy." But now the "apathetic fallacy" emerges as some social scientists "proceed by interpreting man in terms of nature" and exclude essentially human characteristics recognized by "Greek philosophy and Hebrew religion, with their radical and energizing distinctions between man and nature." Certain questions may logically follow: nature at least appears to be both non-moral and non-rational, and some question whether those who believe man is purely natural can properly appeal to the human sense of moral and rational responsibility for nature's welfare.

In one way, Western thinkers, particularly when speaking from a Christian perspective, agreed with White that the Judeo-Christian tradition did indeed separate man from nature, but evaluated that fact as both logical and valuable. As C.S. Lewis stated, it seemed a "fatal self-contradiction" to claim that reason (and the whole concept of rationality) is valid if it be also claimed that it is simply an accidental by-product of the natural world, "simply the unforeseen and unintended byproduct of a mind-
less process at one stage of its endless and aimless
becoming,"12 In Lewis' view, it was logically incongruous
to use reason to "prove" that reason had a purely "natural"
and unreasoning origin, and the same was inescapably true
of appeals to conscience to preserve the world for future
generations.

There is no escape... If we are to continue to
make moral judgements (and whatever we say we
shall in fact continue) then we must believe
that the conscience of man is not a product...
of non-moral, non-rational Nature.13

In similar fashion, Polanyi, speaking as a biochemist and
philosopher of science, argued that man must be distin-
guished from other objects of study, for the mind is

a comprehensive feature of man. It is the focus
in terms of...whole behavior.... The acknowledge-
ment of [human] understanding as a valid form of
knowledge will...lead to the study of man...
engaged in responsible decisions under a firma-
ment of universal obligations.14

There was thus an uneasy reaction to aspects in White's
paper, and in the environmentalist movement in general,
which seemed to blame the ecological crisis on "the dualism
of man and nature."15 This dualism seemed to be an essen-
tial of both Christian doctrine and human nature. The
distinction of "man" from "nature" seemed basic to geo-
graphy which was historically involved in studying the
interface between two components, man and nature, as was
pointed out by such different geographers as Ian Burton and
Gerben de Jong. Acknowledging that it is often difficult
to distinguish the non-human from what is human, or nature
from culture, de Jong went on to explain that

because in reality, they [human and non-human] are interwoven and interlaced, this distinction is unavoidable, though with some restrictions, if we wish to define the various factors with which geography is concerned.16

Similarly, Ian Burton addresses the inseparable human factors unique to man and the difficulties they pose for quantification in geography.

By far the greatest struggle for the acceptance of quantitative methods has been in human and economic geography.... It is here that the [quantitative] revolution runs up against notions of free-will and the unpredictability of human behavior.... In many geographic pursuits, man is the measure of significance, and spatial variations the focus. But how else can significance to man be measured except in terms of some theory of inter-relationships?17

Christians, in fact, believed that the differentiation of man from nature was consistent with both their bibli-cally-based doctrine and a proper conception of the nature of man based on introspective awareness of personality as well as scientific logic. As Langmead Casserley wrote, "The fundamental concepts of our self-knowledge and psychology are based on introspection," disguise it how we will.18 Efforts, he added, that produce "a reidentification of man and nature revealed a gross philosophical error" which produced "an intellectual fog in which it is impossible to distinguish the one from the other."19 To extend Casserley's point, if man is just part and parcel of nature, would it not follow that his works--felled trees, concrete dams, parking lots, and atomic bombs--are
just as "natural" as a virgin forest? Erasure of the man-
nature distinction need not lift nature up, but man might
be levelled down. Carried to its conclusion, said
Schaeffer, human choices would be "pragmatically made with
no reference point beyond egotism. It is dog eat dog, man
eat man, man eat nature. Man...has no real reason not to
rape nature." More abstractly, Casserley argued that the
confusion of man with nature was "fundamentally anti-
humane" and ultimately destructive of the necessary dis-
tinctions of science as well.

It is one of the characteristics of our culture -
one of the characteristics indeed which has done
most to make our scientific development possible -
that for us the term nature has never been a crude
synonym for everything in general. On the con-
trary it has had a specific meaning precisely
because some realities have been distinguished
from it. In our intellectual tradition the term
nature refers to the created universe, to the
realm of the creatures, the order of secondary
causation. This tradition sets God over against
nature as its creator, and, while fully acknowl-
edging man himself as a creature, and therefore in
some sense a part of nature, it also, in virtue of
certain human characteristics and capacities, sets
man over against nature, as an intellectual being
who knows nature, as a responsible and technical
being who masters and cares for nature, replen-
ishes the earth and subdues it....

As Clarence Glacken significantly wrote,

Essays confidently begin with assertions that man
is part of nature - how could he be otherwise? -
but their argument makes sense and gains cogency
only when human cultures are set off from the
rest of natural phenomena.

And as another geographer, James Houston, has stated:

The reasoning process of man cannot be explained
solely in terms of natural causes. Men do not
treat all their ideas as mere 'feelings' in their
heads, induced by biochemical processes. We assume the validity of reasoning. We live under the assumption that rational thought is independent and not interlocked within the interrelated systems of events we may call 'Nature'... Rather, nature is the context of, and material for, man's transcendent powers. 24

However much they might find to agree with in Lynn White's analysis, Christian thinkers could not welcome his seemingly unsympathetic approach to the Christian dogma of man's transcendence of, and rightful mastery over, nature. This difference was undoubtedly an implicit factor in the reaction to White, and it is quite explicit in the response of some such as Schaeffer.

St. Francis's concept, as presented by Lynn White, is not going to solve it—the concept that everything is equal and everything is spiritually autonomous—because it is obvious in practice that man really does have a special role in nature that nothing else has. 25

While Christian thinkers thus believed there was and is valid distinction between man and nature, and that man has a distinctive ethical responsibility to exercise "dominion" over the earth, they did not necessarily accept White's assertion that, according to the Bible, "no item in the physical creation had any purpose save to serve man's purpose." 26 Responses to White quite generally agreed that he raised significant questions such as: is man to rule benevolently or despotically? And was the earth created solely for man's benefit and was he to rule according to his "slightest whim"? These questions, it was argued, can only be answered by examining the entire attitude and
message of the Bible concerning the earth, and that Genesis 1 or Genesis 2, as mentioned earlier, can best be understood holistically in correlation with other biblical statements about nature.

First, Genesis 1 and 2 are believed by many to be two separate accounts of the creation. Genesis 1 (Genesis 1:1-2:4a) is a "logical systematic report," according to Richard Bube and others.\textsuperscript{27} It is a summary of God commanding creation into existence within seven time-frames called "days." It is a linear account, as White has correctly indicated, progressing in orderly stages and culminating in the creation of man in the "image of God", and lifting man into a special place by giving him dominion over all living things and the right to subdue the earth. However, such an account is incomplete if it fails to take into consideration the "moral implications of man's dominion over nature."\textsuperscript{28} In some Christian circles, there may be a widespread impression that, because man does have a special place of dominion in the created order, nature has therefore been created for man's benefit and purpose. This forms part of the approach White takes objection to, though, in the opinion of his critics, he goes a step too far by asserting that "no item in the physical creation had any purpose save to serve man's purposes."\textsuperscript{29} This concept does not agree with other portions of Scripture. One has only to read Psalm 8 to get man's dominion over the earth into a perspective that is more in harmony with the rest
of the Bible. There the stress is on the counterpoint between man's smallness and greatness and his total dependence on God's grace. As David Jobling puts it, "In himself nothing, he has been made lord of all", and goes on to assert the idea that Stoics convinced the early Christians, either directly or indirectly, that the world was created for man's sake. Early Christian fathers enthusiastically embraced this Stoic concept and felt it was "a valuable piece of common ground for approaching the non-Christian world." And, the expression "for man's sake" has appeared in the retelling of Genesis 1 throughout the centuries. "The fact that anthropocentric teleology can be so assumed...is due to the widespread influence of Stoic ideas." The point is that Genesis 1 has been widely misinterpreted since its early days. Jobling wonders if this Scripture "has been interpreted, historically, so as to encourage technology." He maintains that the term "dominion" is not intended to confer a moral right to exploit, that the Hebrew verbs for exercising dominion and subduing "give little specific content to the idea of dominion." In an effort to clarify the concept of dominion, Jobling goes on to suggest that

A straightforward reading suggests that dominion is a consequence, not a definition, of the imago Dei.... Any light we shed on the meaning of dominion depends on how we understand the imago Dei.... The dominion formulations are by no means a program for human autonomy.... Man's relation to the rest of the creation is a direct correlate, but not the definition, of the divine image.
Another respected theologian, Odil Steck, concurs that it is not the purpose of Genesis 1 to define a reason for existence. Rather, Genesis 1 has simply to do with "God's decision" (1:26) and the execution of it (1:27) as a destiny, which is to be man's from that time on, forever."36 Steck goes on to explain his own belief that creation in the image of God is "a titular and functional term" which qualifies man to represent God to "whatever lives beside him in the earthly and horizontal region of creation."37 God's decision to give man authority over nature in Genesis 1 is thought inconsistent with biblical intent when interpreted to include the moral implications that nature was created expressly and exclusively for man's purposes alone; but a clearer understanding of "dominion" is necessary before conclusions can be fully drawn.

It cannot be shown, as White assumes, that the Scriptures teach that the earth was created solely for man's benefit: what then do we make of the interpretation White gives for "dominion"? Although there may be problems with the word as used in Genesis 1:28 as it stands alone, Jobling contends that "we find doubts cast on almost any definite answer we try to give.... Our understanding of man's dominion must be rather openended."38 He goes on to a question many of his colleagues ask: "If man is ontologically superior to the rest of creation, why is it, in the biblical account, that he was the last to be created?"39 And the suggestion, which he also voices for
others; "Man was created last as the being needed to bind
together the rational and irrational worlds." It is
fully consistent with Judeo-Christian tradition to affirm
that man was created to bind together and responsibly care
for the earth rather than for his own sake and selfish
pleasure. And, to properly exercise his rule, he was
created from the dust of the earth and in the image of
God so that he could relate to God and care for His crea-
tion.

In the view of some, a second creation account is
found in Genesis 2:4b-25. In this account the style of
writing is different and yet there is consistency with the
first account. Instead of the commander ordering creation
into existence, as in Genesis 1, in Genesis 2 God is pic-
tured as "the sculptor, shaping, forming and bringing to
life." Genesis 2 is viewed as a recounting of the
Genesis 1 story, defining and sharpening its focus as if
anticipating the Fall of man which follows in chapter 3.
In Genesis 2 man's creation is mentioned first, before the
rest of creation, and verses 5-7 suggest that man was, in
fact, created for the earth. Referring to the time when
God created the heavens and the earth, Genesis (Revised
Standard Version) states:

when no plant of the field was yet in the earth
and no herb of the field had yet sprung up--
for the Lord God had not caused it to rain upon
the earth, and there was no man to till the
ground; but a mist went up from the earth and
watered the whole face of the ground--then the
Lord God formed man...
These verses, along with the rest of the chapter, put man's transcendent nature and special privilege into a perspective that more closely agrees with the rest of the Bible. They state that plant life depended not only on rain but a human cultivator and caretaker which could imply that perhaps man was created for the earth rather than the earth for him or possibly both (man and nature) were created for each other. Instructions to have dominion and subdue are replaced with the softer expression "to till." Later on verse 15 repeats "to till" and adds a responsible dimension: "The Lord God took the man and put him into the garden of Eden to till it and to keep it." The idea of putting man into the garden together with instructions to till and keep, according to David Engel, strongly reinforces the idea that "his task in the garden is not exploitation. As a tiller, man's proper function in Eden is to maintain what has been created." This account, then, offers a clearer definition for "dominion" and "subdue" than is offered by a strictly exclusionist man-over-nature interpretation. The "cultural mandate", as man's dominion is commonly called, is limited and defined by a wider purpose.

Although both Genesis 1 and 2 are in agreement that the created order is radically separate from God, man and nature are both God's creations and designed to function harmoniously as part of an ordered environmental system. Careful reading of Genesis 1 lets the reader know that God
was taking matter that had no form and systematically restructuring it into an ordered system: he first introduced light and separated it from the dark (night and day), next he separated water from air and then He gathered the water on the planet all in one place so dry land would appear. Vegetation followed and God put the sun and moon into place to insure growth and seasons. After the earth was carefully prepared in this way, God brought forth birds, fish and animals and placed each in their respective habitats and last of all He created man to be the caretaker of His beautiful and ordered creation. And, as noted by Glacken, the notions of natural order may be "analogies derived from the orderliness and purposiveness in many outward manifestations of human activity." Man innately seeks order; Genesis 1 and history both support the idea that man and nature were created to function harmoniously; and man's present-day concern for bringing his behavior into harmony with nature only adds support. Carl Amerding argues that Genesis 1 portrays a balanced ecosystem with man and nature working in harmony.

Light dispels darkness and we have day. The firmament keeps the waters separated. The dry land provides a platform for vegetation which in turn feeds all the living creatures. The seas become in their turn an environment for the fish and swarming creatures. The two great lights rule (or give order to) the principle parts of the cycle: day and night. And finally man, as the highest of the created order, serves to keep all of the rest in order, functioning smoothly.

The writer of Genesis 1, according to Steck, "thinks of
man's relationship to the earth as being a relationship to a component part of creation, and sees it as something that is expressly regulated and ordered." And Jobling agrees that "the dominion formulations are by no means a program for human autonomy... Man's relation to the rest of the creation is a direct correlate...of the divine image." Thus it is a commonplace of Christian thought that the earth was not created for man alone and that the mandate he was given was not a mandate to exploit for self-centered purposes. Furthermore, the Bible includes other modifying portions which encourage man to keep God's creation in the harmonious and functioning order originally described as "good." In reaction to White, some point to the fact that the Bible has numerous passages referring to the value of and care for nature, passages wholly compatible with ecological concern. Psalm 8, another popular Scripture affirming man's dominion over nature, also pictures man as lowly, in awe of God's work and crowning of man:

When I look at thy heavens, the work of thy fingers, I...what is man that thou art mindful of him?... Yet thou hast made him little less than God.... Thou hast given him dominion over the work of thy hands. (verses 3-6).

Noting the usual interpretation of Psalm 8, Loren Fisher stated that "man is not praised. The psalm is a hymn that begins and ends with the praise of God. It is clearly stated that man is insignificant. It is indeed a blessing
and a gift that man can rule." Scholars agree that this passage clearly expresses humility, rather than superiority, in addition to reinforcing the Genesis 1 directive to have dominion over the earth. Jobling states that "An important theological relationship between the psalm and Genesis 1 is universally recognized, and most scholars conceive of a definite tradition-historical connection." Psalm 104 speaks of God's magnificent handiwork in creation, the harmony manifested between man and nature and how they "combine to praise their creator." Quoting from verses 21-24 and 31 Psalm 104 states:

The young lions roar for their prey, seeking their food from God. When the sun rises, they get them away and lie down in their dens. Man goes forth to his work and to his labor until the evening. O Lord, how manifold are thy works! In wisdom hast thou made them all; the earth is full of thy creatures... May the glory of the Lord endure forever, may the Lord rejoice in his works.

Emphasizing ancient biblical unity, Hugh Montefiore notes that

The ancient unity between man and nature is shown in the creation story in Genesis 2 by the fact that man is vegetarian; as in the vision of Paradise Lost, so also in the vision of Paradise Regained, "the wolf shall dwell with the lamb, and the leopard shall lie down with the kid...they shall not hurt or destroy in all my holy mountain (Isaiah 11:6-7, 9a)."

An ecological theology, according to theologian Henlee Barnette,

will take into account God's covenant relationship to the good universe that he created. His covenant with his people extends to the land (Lev. 25:1-7), as is implicit in the injunction
to leave the ground fallow in the seventh year for conservation purposes (Exod. 23:10-11; Lev. 19:9). God's covenant with nature includes every living creature (Gen. 9:8-17). Trees have their own rights which are to be respected by man (Deut. 20:19-20). Animals are to be treated with kindness (Exod. 23:4-5; Deut. 22:1-4). Domestic animals are thought to have a covenant with man, whereas wild ones do not and can roam free (Job 41:4). The mother bird is not to be caught when nesting or with the young (Deut. 22:6-7). God's covenant extends to the inorganic (the land, the sun, moon, and stars), for they submit to his creature rule (Ps. 148). Whether this is panpsychism or merely a poetic way of expressing the relation of God and man to nature, it is certain that every creature is appointed a place in nature to serve, praise, and glorify God.

Biblical writers, especially the prophets and the authors of the Wisdom literature, conceived of nature as having intrinsic value and significance for God. The earth and all it contains was created by Him, each part for its own purpose: it declared His nature, activity and glory. Psalm 24:1 says "the earth is the Lord's. Proverbs 16:4 says "The Lord has made everything for its own purpose," and Psalm 65:8 declares that "Thou dost make the dawn and the sunset shout for joy." The order and beauty of nature are manifestations of the glory of God and his power and meant to bring Him delight. Summing up the Psalms as putting God, man and nature into proper perspective, Fisher states that:

Now when we move to the Psalms we see... The earth is the Lord's (Ps 24); God's power can be seen in nature (Ps 18:7-15); God makes the earth fertile (Ps 55,67); God is the creator (Ps 93, 95); all of nature praises God (Ps 19,96,97)... and good land is turned into a "salty waste"
because of wickedness (Ps 107:34). It may be important to add that "Man cannot abide in his pomp, he is like the beasts that perish" (Ps 49:12). (However there are other psalms that stress that the Lord has given the earth to man [114:15].) What is man? He is a breath and only the Lord of creation can rescue. Psalm 14:4 puts it this way: "When his breath departs he returns to his earth; on that very day his plans perish." 54

Job, another major portion of the Wisdom literature, concurs with the Psalmist's views on God, man and nature. Job too "asks the same question that is asked in Psalm 8. Job says, 'What is man?' (7:17).... There is no doubt that this God is great in nature (Chapter 9) and that man is nothing (10:9)." 55 Montefiore states that

Man has lost his love for nature.... Man has become the enemy of nature. In the Book of Job man is properly put in his place concerning nature--"Were you there when I created the springs?"--and we are told that nature is created for God to take pleasure in. 56

Furthermore, Job graphically illustrates the concept that nature was synonymous with God--his nature and activity. Referring to H. Wheeler Robinson's work, Inspiration and Revelation in the Old Testament (1946), Nancy Watkins Denig noted in Landscape Journal that "there is no Hebrew word equivalent to our concept of nature." 57 The only way to render the idea of nature would be to refer to God. Job chapters 36 and 37 describe thunder as being God's voice, ice being made by His breath, and lightning declaring His presence. Noting various metaphors from the world of nature to describe God, Denig points out that God answers Job's questions about suffering by speaking to
him in chapter 38:1 from "out of the whirlwind." 58

The New Testament, while not explicitly giving man moral and ethical instructions on caring for the earth, does not supersede or nullify Old Testament biblical content. Rather, according to Odil Steck,

the Old Testament with its dimensions and embodiments of God's activity helps to define the Christ-event theologically in the face of present-day challenges in a new and hitherto unformulated breadth, so that Christians may find their bearings and motivations for their responsibility for the world. This applies particularly to the theme of the natural world and environment, which is considered very extensively in the Old Testament, unlike the New. 59

Therefore, in the New Testament, the natural world and environment are now also perceived in the light of this Christ-event to which the New Testament witnesses. Romans 1 and 8 are the most striking New Testament Scriptures which reveal the essence of both Old and New Testaments. Here God reveals Himself in nature just as He did in the Old Testament: "For since the creation of the world His invisible attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made" (Rom. 1:20). And in Romans 8 the concept of the redemption of man and nature go together. In fact, the New Testament goes a step further than the Old Testament: it includes nature in God's plan of redemption. In a strictly "scientific" world view there is no ultimate value in nature: all is to collapse in either a "heat death" or "cold death" - what Bertrand Russell called the
inevitable "vast death of the solar system." But St. Paul, in Romans 8:19-21, proclaims his faith in a lasting dimension: nature is waiting for the day when it will be delivered from frustration: "For the creation was subjected to futility,... in hope that the creation itself also will be set free from its slavery to corruption." Reinforcing this concept, Houston states that:

The future of the earth is irrevocably linked with the future of mankind.... Humanly speaking, the odds seem stacked hopelessly against modern man being able to avert eco-catastrophe. We live apocalyptically. Biblically speaking, man has been put at the head of creation by the ordinance of God. His failure involves therefore 'the groaning' of the whole creation in travail, as if waiting for new birth. 'We wait for adoption as sons.' While we wait, however, we have this sure hope, says the apostle, that with our adoption, 'the creation itself will be set free from its bondage to decay and obtain the glorious liberty of the children of God' (Rom. 8:21,23).

And in Revelation 21:1 St. John gives a picture of "a new heaven and a new earth" - a "vision, no less, of man and nature redeemed together." According to theologian Eric Rust, Christ (God incarnate in human clay) "completes the whole process of creation. It is not just man who is redeemed and perfected in the Incarnation." Furthermore, if the humanity of Jesus be a full humanity, then his redemptive activity covers the whole man and therefore covers man as a part of nature.... Nature must be reverenced. Christ chose to garb himself in it by becoming man. In redeeming man he gave the promise of redemption to nature too.

The New Testament message of salvation for man clearly has environmental dimensions as well, implying biblical
support for proper use and care of the earth. Summing up New Testament reverence for nature Montefiore stated:

But if all matter has the potentiality of spirit, if human beings with all their talents and capacities consist of matter organized and structured in certain ways, if matter could be so perfectly structured that it was congruous for it to be used as the instrument and expression of God himself, then matter is not to be despised but to be held in honor: Matter is the vehicle and expression of the Holy Spirit. . . . If this is so, then here is a theological explanation why matter should be regarded as having intrinsic worth and why men should not treat it simply as something to be manipulated for their own pleasure and power and prestige.65

Other references to nature in the New Testament also serve to reaffirm nature's value. Barnette says,

God cares for and rejoices in his creation. He feeds the birds (Matt. 6:26) and allows no sparrow to fall to the ground without noticing (Matt. 10:29-30; Luke 12:6). He clothes the lilies of the field (Matt. 6:30) and hears the cry of the animals for food (Ps. 104:21-22).66

Regardless of man's position in the created order, Jesus recognizes that nature shares in divine concern. In Jesus' parables, seeds, soil, rocks and birds find a place, and in Matthew 13:30 even the weeds are to be left in place until the harvest lest grain be pulled with it. These natural elements provide fit parallels for the kingdom of God because, for the Hebrew people, nature expressed the activity of God. Matthew 20 refers to Jesus' hiring of laborers to tend the vineyard, and Matthew 24 speaks of the rewards for faithful stewardship of all earthly goods. Jesus Himself lived simply and harmoniously with nature. He did not accumulate goods but
stated in Matthew 8:20 that "foxes have holes, and the birds of the air have nests; but the Son of Man has nowhere to lay His head." It was also noted that the natural elements used in the New Testament sacraments of Baptism and Eucharist confirm the Old Testament respect for and value of nature's being God's "good" handiwork, able to communicate the Creator's attributes and reality. Commenting on the Eucharist, theologian Henri Nouwen vividly expresses this ethereal quality about nature:

We will never fully understand the meaning of the sacramental signs of bread and wine when they do not make us realize that the whole of nature is a sacrament pointing to a reality far beyond itself. The presence of Christ in the Eucharist becomes a "special problem" only when we have lost our sense of His presence in all that is, grows, lives, and dies.67

There is nothing in the New Testament that invalidates Old Testament concern for careful stewardship of the earth. Rather, New Testament Scriptures reinforce Old Testament man-nature concepts expressing nature's value and man's responsible care for God's created handiwork that expresses His nature and activity. Furthermore, nature is additionally esteemed through the Incarnation and its inclusion in God's completed work of redemption through the Christ. Therefore, any New Testament view of nature as an "expendable" entity is simply not biblical.

In summary, while Genesis 1 affirms man's dominion over the earth, it is very doubtful that this had a harsh connotation. Careful consideration of Genesis 2 and many
other Scriptures gives a clearer meaning to "have dominion and subdue" within the biblical framework of creation, fall, and redemption. White, in his attack on a fragmented concept of man's dominion over nature, has stimulated a re-examination of biblical teaching which, in turn, has brought a corrected, holistic view of creation and redemption involving man and nature. Judeo-Christian biblical concepts do not support the view that nature was created solely to serve man's purposes and be exploited for his own ends.

In the next chapter we will review what has happened in practice and seek to gain a clearer understanding of human relationships with nature in a more cross-cultural, "cross-religious" context.
NOTES


2 Ibid.


4 White, loc. cit.


9 Gowan, loc. cit.


11 Ibid.


15 Schaeffer, op. cit., p. 107.


18 Casserley, op. cit., p. 131.

19 Ibid.

20 Schaeffer, op. cit., p. 91.

21 Casserley, op. cit., p. 136.

22 Ibid., p. 139.


25 Schaeffer, op. cit., p. 42.

26 White, loc. cit.


29 White, loc. cit.


31 Ibid., p. 69.

32 Ibid.

33 Ibid., p. 12.

34 Ibid., p. 25.

35 Ibid., pp. 26, 32.


37 Ibid., p. 103.

38 Jobling, op. cit., p. 22.
39 Ibid., p. 92.
40 Ibid., p. 96.
43 Ibid., Genesis 2:15.
44 Engel, op. cit., p. 222.
45 Glacken, op. cit., p. 3.
46 Amerding, op. cit., p. 7.
47 Steck, op. cit., p. 106.
48 Jobling, op. cit., p. 32.
50 Jobling, op. cit., p. 33.
52 Ibid.
54 Fisher, op. cit., pp. 33-34.
55 Ibid., p. 32.
58 Ibid.
59 Steck, op. cit., p. 106.
61 Houston, op. cit., p. 255.
62 Denig, loc. cit.
64 Ibid., p. 19.
66 Barnette, op. cit., p. 68.
CHAPTER IV
PRACTICE AND PRINCIPLE: THE FACTUAL RECORD

Before a full response to White can be attempted, it is necessary to enquire as to whether exploitation is distinctive to the Christianized areas of the world and expresses biblical principles. White implies and his thesis strongly suggests, that Western technology's "ruthlessness toward nature" is the exclusive, or nearly exclusive, product of Judeo-Christian ideas and beliefs.¹ Believing that "human ecology is deeply conditioned by beliefs about our nature and destiny--that is, by religion," White pointedly stated that:

Our daily habits of action, for example, are dominated by an implicit faith in perpetual progress which was unknown either to Greco-Roman antiquity or to the Orient. It is rooted in, and is indefensible apart from, Judeo-Christian teleology.²

Therefore, in determining what has happened in practice, a fairer test of the accuracy of White's indictment of Judeo-Christian responsibility for exploitative behavior would be to examine man's actions toward the earth in both non-Christian and Christian cultures. This will give a more comprehensive presentation of the impact of belief on behavior and response to White's conclusion that "Christianity bears a huge burden of guilt" for the ecologic crisis because of its victory over paganism severing man from a lowlier nature.³ In this survey two questions will
be touched upon. Firstly, has the Judeo-Christian tradition uniquely generated the ecological disasters which affect our planet, and secondly has an exploitative approach to nature actually and generally been held in the Christian tradition?

Ecological Disaster and the Judeo-Christian Tradition

Although White did not explicitly state that the Judeo-Christian tradition was the sole precipitant of the ecologic crisis, the implication was strong enough to stimulate a significant response in order to investigate the record. Historical evidence on land abuse is substantial and, since White's position is anchored in an appeal to history, this question of historical practice is important for the understanding of the roots of our environmental problems.

But the evidence of history is often ambiguous at best. Although exploitative practices have accelerated in the industrializing Western world during the past 200 years, there is clear and plentiful evidence that man has been destroying at least some elements of his natural environment from Paleolithic times onward: such abuse is by no means specifically or exclusively associated with Judeo-Christian societies. Long before the Old Testament Jewish prophets, or before the advent of Jesus, primitive man had stripped the trees and spread the grasslands
through "fire-drive" hunting methods and practiced unrestrained grazing in even marginal environments, thereby denuding the hills and plains surrounding the Mediterranean Sea. In 1947 Carl Sauer noted that Paleolithic and Neolithic man was in principle as destructive as any modern people. Also commenting on Neolithic land abuse in pre-biblical times, Rene Dubos noted that

>a dramatic extinction of several species of large mammals and terrestrial birds occurred at the very beginning of the Neolithic period, coincident with the expansion of agricultural man.

Clarence Glacken noted that Eratosthenes, in the third century B.C., described the manner in which the island of Cyprus was made habitable: trees were felled to provide fuel for smelting copper and silver as well as timber for ships to navigate the seas and, since these cuttings were not sufficient to clear all the forests, the government allowed people to clear and hold the land. It is also well documented that the deforestation of Europe began under the auspices of Neolithic farmers and continued under the pagan Celts, Romans and Teutons. Carl Sauer described peoples of Paleolithic and Neolithic cultures as quite as imperialistic as any modern people, the only difference being that of scale. The question of scale is only remotely (if at all related) to Christian doctrine: it seems much more closely linked to such factors as timing of economic development, population increase, and a complex of other political and sociological factors.
Yi-Fu Tuan points out that against the background of vast transformations of nature in the pagan world, early Christian influence on nature was relatively modest. The victory of Christianity over paganism cannot be directly linked to human abuse of the land. At best, "for lack of real, as distinct from theologically postulated, power the full impact of that revolution on ecology was postponed." Man's power over nature was not fully realized in Europe until the human numbers were sufficiently multiplied: "Europe had to wait for the growth of human numbers, for the achievement of greater administrative centralization and for the development and wide application of new technological skills." Reinforcing this statement Tuan noted the man-made changes Benedict's order made throughout Europe and pointed out that:

these man-made features lacked the permanence, the geometric order, and the prideful assertion of the human will that one can detect more readily in the Roman road system, aqueducts, and centuriated land-holdings.

Although Europe developed an integrated system of animal husbandry and agriculture which made it possible for agriculturalists to continuously occupy and use the land for over 4,000 years, Sauer believes the introduction of machinery and cash cropping "signaled the beginnings of the breakdown with which we are now struggling." While it is true that this achievement of European agriculture, which is in some respects without parallel, occurred during the 1500 years when European culture was in part
dominated by Christianity, it is also true, as H.C. Darby points out, that after 2000 years of Christendom Europe has retained more forest than any other continuously cultivated land in the world. 14

However, to evaluate this question more fairly, it is necessary to examine other areas of the world that have continuously been outside the orbit of Western Christianity and its strong influence. China, a major civilization with a long recorded history, is perhaps the best example of a culture which has developed outside of Western Judeo-Christian tradition. Yi-Fu Tuan has pointed out that the Chinese environment has fared very poorly in spite of the fact that Taoist and Buddhist traditions, emphasizing man as continuous with and part of nature, have prevailed for many centuries. 15 Ancient Sri Lanka, also a great Buddhist civilization, appears to have succumbed to the effects of massive soil erosion in the farmed-out hills surrounding their cultural centers. 16 Modern-day Japan, with Shintoism and Buddhism the predominant religions and less than 5 percent adhering to any form of Christian faith, has experienced an increase in its gross national product and pollution that surpasses that anywhere else in the world. If monotheism and the Genesis 1 directive to "subdue" the earth are presumed to be culpable for the rapid and destructive effects of technology, then, Issa Khalil poses a question:

Why is it, then, that a country like Japan, with
a Weltanschauung which is in harmony with what Toynbee calls 'pre-monotheism', should adopt a practice which is contrary to its own ideals without first adopting monotheism? Khalil goes on to explain that this question is especially significant when we recognize the speed with which Japan adopted and mastered Western science and technology. The development of science and technology evolved over a period of five centuries in the West, whereas it was assimilated by Japan in less than a half a century.

Reflecting on these discrepancies between principles and practice, and in direct contrast with White's assumption that man's behavior is strongly influenced by his beliefs, Tuan stated that:

A culture's publicized ethos about its environment seldom covers more than a fraction of the total range of its attitudes and practices pertaining to that environment. In the play of forces that govern the world, esthetic and religious ideals rarely have a major role.

If Tuan's statement should be correct, and it could be supported by many an example from Asia and Africa, the Middle Eastern deserts and the Soviet Union, Judeo-Christian beliefs do not conclusively play a major role in the planet's exploitation. Whether these beliefs are unknown or simply disregarded, they can scarcely bear "a huge burden of guilt" for the environmental crisis and White has not identified the most important root. One is then forced to search further for a more universal source common to both Christian and non-Christian peoples.

One suggested factor precipitating our crisis has
been affirmed by Christian scholars and aptly stated by biologist, Richard Wright.

The explanation reveals itself every day, if we care to look for it, because it is present in each of us—human greed, carelessness and ignorance. To solve the ecological crisis, we must come to grips with these very evident and very basic aspects of human nature. The crisis is the result of man working out his potentialities in making use of his environment in the same sense that other species, such as the beaver, also manipulate their environment. But Wright concludes that "this species [man] is unmistakably flawed, for it seems to have the ability to turn its potentialities and activities either way—for good, or for evil." Christians agree that any successful strategy for solving the crisis must recognize these common human traits of greed, ignorance and carelessness, and appeal to other basic human interests that will serve to promote life rather than threatening to destroy it along with all hope for a "good life" and all that brings happiness and satisfaction.

In response to the charge that Judeo-Christian teachings are centrally responsible for the ecological crisis, Christian scholars have raised the question as to whether the decline of biblical faith and practice by a secular society is not more responsible. This is linked to the argument made by Dorothy Sayers, novelist and churchwoman, that man is a created whole which secularism seeks to subdivide, so economic drives are separated from moral con-
trols. Thus, wrote Sayers:

the avaricious greed that prompts men to cut down forests for the speedy making of money brings down a judgment of flood and famine, because that sin of avarice in the spiritual sphere runs counter to the physical law of nature. We must not say that such behavior is wrong because it does not pay, but rather that it does not pay because it is wrong.22

As Barnette quotes T.S. Eliot: "A wrong attitude towards nature implies, somewhere, a wrong attitude towards God, and the consequence is an inevitable doom."23

This thought is developed more extensively in the writings of the Christian economist, Goudzwaard, who argues that the separation of economic principles from a holistic view of man related to God and nature has led to the replacement of the Christian gospel (in practice if not in words) by a gospel of material progress. He argues that the Hebrew principle of "Shalom" (or peace) meant not just the absence of conflict but the deliberate promotion of harmony. Restraint was needed if economic drives and technological advances were not to destroy "Shalom". The viewpoint of classical economics, as developed by the deist Adam Smith, was, Goudzwaard argued, posed "in the specific context of the struggle of man against nature", with value made "tangible in the goods produced."24 This, Goudzwaard believes, is characteristic of the "economistic reduction" which, abandoning the holistic view rooted in Christian doctrine for an "idol", promotes a progressive distortion in man-to-nature as well as man-to-man relation-
ships. Not entirely tongue-in-cheek, Goudzwaard argued for spiritual Aid for the Overdeveloped West, and moved vigorously into the politics of the Netherlands with his incisive book on Nonpriced Scarcity (1970), a study of the nonmarket costs of pollution.

This argument is also developed in more direct response to White's theme. It lies behind the point made by Montefiore, British churchman and ecologist, that since material prosperity seems to have become an end in itself, man cannot control the industrial juggernaut he has created.... How could it be otherwise if man no longer has any clear belief about who he is?... [He] will use his powerful new weapons, industry and agriculture, to do violence to the world of nature.

Elsdon, an Irish geologist, drawing from a wide range of theological viewpoints, comes to the same conclusion: man's drive for material success, so contrary to the injunction to "seek first the Kingdom of God", brings dis-orientation; "there is a complex relationship between God, man and the environment. If the relationship between two of them is disturbed...the third is automatically implicated." Failure to "see that the world bears the stamp of its Creator" leads to the edict "Cursed is the ground because of you" (Gen. 3:17)—a judgment "come true in an alarming way through environmental mismanagement." The drives for material well-being and power take over, and, as Reinhold Niebuhr affirmed, "this lust for power expresses itself in terms of man's conquest of nature, in
which the legitimate freedom and mastery of man in the world of nature are corrupted into a mere conquest of nature." 29 As Elsdon goes on to argue, Christian teaching gives us no reason to hope that fallen man can ever completely reverse his destructive course, for he is driven by motives he cannot fully control, but the healing process can and must begin. 30

This same thought is evident in the geographer Houston's development of the theme in I Believe in the Creator. Rejecting the Christian view that man is made in the image of his Creator, Western man slides into an "obsession with technology", the "appalling mindset of the technocrat [which] assumes that the technical milieu is autonomous in terms of values and ideas." 31 True, Houston argues that theology itself prepared the way for secularization of science" and technology in the post-Reformation era, but he argues also that the healing process calls for clear and consistent theological and scientific thinking. 32

The early postulates of Christian thinkers like Palissey, Gerardius, Galileo and Boyle, that the scientist was the priest of creation, placed in the world to articulate the praise of all created things, has been totally lost... Today, the secularization of science has gone so far [that] deep enquiries [have been replaced] with a... problem-solving style of mind that is hard-boiled and hostile to profound questioning. After all, research grants [now] tend to go only to what is termed practicable and useful. 33

The search for truth is replaced by an emphasis on technological power and material results, an emphasis that screens out a holistic view of man and nature. Not sur-
prisingly, Houston approvingly quotes the Chorus from T.S. Eliot's "The Rock":

Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?
The cycles of twenty centuries
Take us further from God, and nearer to the dust.  

Having previously concluded that Judeo-Christian biblical concepts do not support the view that nature was created to serve man's purposes and be exploited for his own ends, we would further suggest that Judeo-Christian principles, at least, cannot be considered responsible for the environmental crisis. Not only does much historical evidence run counter to the charge, but Christian thinkers have postulated that practical, especially economic, factors have overridden religious or other altruistic teachings, and these motivations are largely independent of both environment and religion. In fact, theologians proceeded with the countering argument that it is precisely the abandonment of the Christian view of stewardship for the secularized approach of the post-Christian age that has intensified the environmental crisis. But practice as well as principle must be taken into account, so let us move on to the concluding question as to whether or not an exploitative view of nature has actually been perpetuated and practiced in the Christian tradition.
This question elicited a large response over a wide spectrum; it is one thing to argue that Christian cultures are by no means the only ones involved, and another to argue that exploitation has not been practiced within the Christian tradition. This question invited the community to investigate theological suppositions and attitudes that have prevailed throughout the past twenty centuries. No one likes to play the role of exposé, but if Christian attitudes and behavior have been destructive, it is important to uncover that fact and take corrective action.

Even before White's statement, but especially after it, conclusions had been drawn among some Christians which were generally supportive of White's position to one degree or another. Survey of Christian literature suggests that White's views came as much more of a shock to the man on the street than to Christian thinkers. Christians were being awakened to the problem, to their responsibility for reassessing current theology and attitudes, and to their need for formulating a theology consistent with biblical principles but pertinent to the twentieth century. To be sure, there were many who concurred with White's analysis of the views held by many Christians concerning nature and of the effect of these views on Western man. However, before reviewing literature on this question, let us qualify the term "Christian tradition," consider the way
ideas and attitudes are formed within that tradition and examine the nature and task of theology as a science.

The term "Christian tradition" has at least two quite distinct meanings. First, there is the exclusive definition which limits Christianity to that specific community of people who are defined by their faith in Jesus Christ and their willingness to apply Christian principles. The second denotes the broader population of "Christendom" which incorporates both those who have Christian faith and the larger community whose only identification with Christianity is cultural. Loren Wilkinson contends that this distinction is a crucial one.

It is not Christianity, but Christendom, which has caused the ecologic crisis of which White speaks. That is, those who call themselves Christians have been guided at times by principles other than Christian.... What White and others have pointed to as the destructive influence of Christianity is, in fact, the destructive influence of pre-Christian ideas, imperfectly transformed by the gospel and too often mistaken for the gospel itself.35

While it may prove to be a fact that the smaller, believing community of Christians within Christendom has generally treated nature no differently than those who consider themselves Christians in the broader sense, this distinction has some important implications as far as this paper is concerned. While White was doubtless addressing issues which he believed to be common to at least Western Christendom, it is the smaller, faith-professing community most sensitive to the criticism that provided the primary
response involving biblical interpretation and Christian teaching. Yet it is the broader sphere of Christendom which is corporately responsible for the problem and which must be involved in the solution. Both smaller and larger circles are vulnerable to principles derived from extrabiblical sources, as Wilkinson has suggested above, and these affect their ideas, attitudes, and even theology. This reality will be examined in the brief review of two thousand years of Christian behavior toward nature. But first let us discuss how ideas and attitudes are formed.

We may note that while ideas and attitudes about man-nature relationships are formed in much the same way throughout all of Christendom, the explicitly Christian community is much more responsive (though never entirely so) to theological assumptions which filter down from scholars through the clergy to the pew. In spite of the seeming finality of some theological propositions, some elements undergo change throughout the centuries as scholars re-evaluate them in light of fresh insight and knowledge and their applicability to contemporary life. However, in the absence of a clearly defined theology of nature, Christian attitudes and ideas concerning the nature of nature are formed in much the same way as are those of humanity in general; they are influenced by the prevailing cultural values, by other ideologies which may or may not have Christian moorings (as Wilkinson has suggested), by the drifting currents of circumstance as
this bears upon human needs and desires, or by any com-
bination or permutation thereof. Not infrequently, con-
cepts derived from non-Christian presuppositions are com-
bined with just enough theology to give them the deceptive
appearance of being "Christian". This tendency towards
theological adulteration— as some view it— poses a constant
challenge to both thought and action when human needs and
desires favor modification of principle to sanction devi-
ation in practice. Hence, all but the most dedicated
members of even the smaller Christian sphere may think and
behave little differently than Christendom at large.

But however difficult it may be, theology seeks to
bring together the supernatural and the natural, over-
arching principles and concrete practice, through rigorous
intellectual criticism. Both human imperfection and an
inadequate grasp of the data have normally been conceded
by theologians. Thus Hugh Montefiore, in his response to
White, stated that "all theological assessments are pro-
visional rather than ultimate."36 In spite of continuities
in foundational principles, understanding and interpre-
tation have changed over the centuries and will doubtless
continue to do so as new knowledge and new needs bring
fresh assessment and application. With this awareness,
then, let us review the Christian theological framework as
it has related to man and nature through history, and seek
to determine whether or not an exploitative view of nature
has been inherent to, or generally held in, the Christian
tradition.

Research into this question has suggested elements of both enlightenment and embarrassment within the Christian world. It has consistently indicated that modern theology has been man-centered in its orientation during the past two hundred years, years which have concurrently experienced the rapid acceleration of technology leading to the current eco-crisis. Speaking of Karl Barth, who rejected traditional "natural theology" as a pathway to the knowledge of God and championed the post-Kantian "the-anthropological" framework, H. Paul Santmire (from a somewhat anti-Barthian perspective) claims that Barth "thought of theology as 'the-anthropology,' as a confession and exposition of God's special relationship with the human creature."37 Santmire goes on to say that this "is the theological framework that has dominated ecumenical Protestantism...for the last three decades or more."38 God and man were primary; nature was left to the naturalists. Many leading theologians, while they did not completely ignore the question of natural theology based on their understanding of nature, did not consider a theology of nature an urgent concern and tended to neglect the subject. This allowed man-centeredness to develop to the point where many felt theology could not deal adequately with nature, and, this being the case, White's challenge was salutary. It assisted the re-advance of theology into this area! But if man was the center of theology, it followed that
nature would be interpreted in terms of what it meant for man; the outcome, according to Richard Baer Jr., was "a theology of man's environment rather than a theology of nature" per se. 39

This subtle twist may have had far-reaching implications, especially in the Neo-Orthodox camp, for it reinforced a dualism which served to rob nature of any independent, intrinsic value, and relegated it to the stage-setting where the human drama is lived out. According to Baer, Emil Brunner went so far as to state that "the cosmic element in the whole Bible is never anything more than the scenery in which the history of mankind takes place." 40

This view, which takes cognizance of the world as merely the home for man--commonly though erroneously presented as the teleological view through the years--could perhaps be responsible for sowing some of the seeds of exploitation which White claims as traceable to Judeo-Christian teaching. There is significant evidence that not all theologians are happy with the role accorded nature by other theologians during recent decades, let alone during the past 200 years.

However, as suggested in the previous chapter, the evidence also suggests that the source of exploitation may lie with man's economic needs and motives rather than with any Scriptural mandate. White himself suggests this in the following statement:

Especially in its Western form, Christianity
is the most anthropocentric religion the world has seen.... Christianity...not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends.41

As has been seen, there is reason for concern with the earlier part of this statement. It is paradoxical—an overstatement—to claim that Christianity asserts that no physical item exists save to serve man's purposes, and White is justifiably challenged. But White is undoubtedly right when he states that Christianity encourages man to use (why "exploit"?) nature "for his proper ends."42 The end, for White, seems not to discard Christianity altogether but to reject the supposed Christian axiom "that nature has no reason for existence save to serve man."43 This is a misunderstanding on White's part, a non-issue for most if not all theologians; even though they insist that man uniquely bears God's image. In fact, White also affirms that because "the roots of our trouble are so largely religious, the remedy must also be essentially religious," and suggests that rethinking begin with St. Francis of Assisi's approach to nature.44 These comments suggest several things: that science and technology need to be conjoined with religion in the search for a solution, that some elements in Christianity have evinced some positive attitudes, and that theology should become involved in questions about man's relationship to nature, questions that have not yet been fully explored. The remainder of this chapter will chronologically review
relevant Christian attitudes, teaching and practice.

Christianity, while born out of the life of Jesus Christ as recorded in the New Testament, is rooted in and inseparably linked to Judaism. It originated in the Jewish community and appealed to the Jewish Scriptures, hence the "Judeo-Christian" tradition. But Christianity was a missionary faith and persecution scattered its followers so the early Church soon included converts from the Greek and Southern European cultures. Jewish Christians shared their faith but, along with the Gentiles that joined them, almost inevitably absorbed non-Christian ideas and practices from the cultures around them. Although Christian efforts to resist assimilation and corruption led to crystallization of their central creed, Christianity was nevertheless influenced by external philosophies to varying degrees in different times and places. Greek, Roman and Teutonic ideas were accommodated, particularly where they seemed compatible, as the new religion spread from Judea throughout the Western world, and attitudes and practices that touched on nature were no exception. To separate the foundation from later accretions, it is necessary to trace the development of teaching and practice back to Old Testament Hebrew roots.

The Old Testament Jews were inseparably linked to the land, as the geographer Denis Baly put it, chosen land and chosen people went together. The Hebrews, according to James Houston,
saw the world as theocentric: God given and God centered. There is no word, no concept of 'nature' in Hebrew thought. Yahweh is the transcendent sovereign of all creation to whom is attributed all of reality. This view established a moral link between man and his environment and postulated a personal and rational reason for the existence of the world vis-a-vis a purely mechanical one. In contrast with our compartmentalization, the Hebrew world view was integrated. Responsibility to society and responsibility to the land were not divided, and one was simply an extension of the other. According to the anthropologist, Marvin Mayers, "The laws of society and the laws of the environment were interlocked... God was concerned with the whole of life, and so God's covenant was tied into the land." One law could encompass man in society and man in his environment. Deuteronomy, chapters 22-25 for example, refers to laws relating to people as linked to planting, to mammals, and to birds. Leviticus 25 gave specific instructions that the land was to lie fallow every seven years. As the land rested so did man, and, in the fiftieth year, following seven-times-seven years, the laws demanded a balancing of both the social and environmental systems. The land was to lie fallow and unharvested, the slaves were to be freed, and debts to be forgiven. The three kinds of festivals in the cycle were the main Hebrew mechanism for maintaining the environmental system: national festivals, such as the Passover;
national humiliation or Day of Atonement; and the festivals of the Sabbath (namely, the Seven Days, the New Moon, Seven Years, and seven-times-seven years or the Year of Jubilee) provided a means for the total nation to pay attention to the recycling of the environmental system.48

Everyone in the Jewish community participated in these festivals, thus guaranteeing the effectiveness of the recycling regulations. Along with many other Old Testament laws concerning society and the environment their effectiveness was, of course, contingent on compliance by the people. Violation of moral laws resulted in corresponding pollution of the land and disturbances of natural processes, as indicated in Isaiah (24:5), Jeremiah (3:1-2, 9) and Deuteronomy (11:13-17). The welfare of man and land was thus dependent on Israel's obedience to the regulations that were divinely established in the law and the prophets. The Old Testament is replete with many specific instructions on how to care for the land.

Another concept in Hebrew consciousness was the view that, though the promised land of Caanan was given for the nation's possession, it still belonged to Yahweh their God (Leviticus 25:23, 38). They envisaged their role as a partnership with Yahweh, as stewards of His property, not as owners of the land in the ultimate sense. Leviticus 25:23 specifically states that the earth should not be sold in perpetuity because it belongs to Yahweh. Psalm 24 begins by asserting that the earth and all of its fullness belong to the Lord. As earlier indicated, the Hebrews were
to care for the land according to God's statutes and, in so doing, bless the land and receive its benefits in return.

As the story of the Hebrew people unfolds in the Old Testament, these laws were gradually ignored and abandoned until finally the Jews were scattered as a society and their land became desolate. In such passages as Leviticus 18 the land is envisaged as vomiting out its inhabitants because of disobedience; neither moral nor environmental laws were kept and concern for nature diminished in the process. Such was the condition that prevailed at the close of the Old Testament era when New Testament Christianity began to unfold.

Thus, consciousness of nature may well have been at a low level when the Founder of Christianity was born, explicitly (in Christian faith) to solve the human dilemma rather than any still-future natural crisis. Christianity was naturally "anthropocentric" right from the beginning. But as Elsdon points out, the emphasis on man's salvation in the New Testament has all too often been presented without due comprehension of the incorporation of nature in its range. The biblical idea of redemption has always included the earth, and the new faith was to affect human actions toward the earth. Elsdon stated that:

Since the Old Testament portrays a broken relationship between man and nature, it is valid to inquire whether the New Testament says anything about a new co-operation between man and nature.... There is, therefore, an
environmental dimension to the gospel. The unity which is in God himself and which he makes possible in human relationships through reconciliation extends not only to the way we relate to other people but also to the world.49

Of course the focus was on man, and the Christian doctrine of the incarnation of God in the man Christ Jesus served to reinforce this focus. As theologian Gabriel Fackre stated, "this Old Testament anthropocentric premise is confirmed in the New Testament. God chooses to enter his world in the form of man."50 Thus, in both the Old Testament and the New, man enjoys a unique status as White has accurately implied. But White's seeming disapproval is not shared by Christian writers. They argue that man's transcendence over nature has also left a positive legacy. A creed which insists that man is made in God's image and therefore above nature also involves the recognition of unique human value. In Fackre's words, "the life of a starving child takes precedence over a sacred cow," and, as Church historian Cyril Richardson views it, Western progress is not all bad.51 To the latter, a negative view of the concepts of image and dominion such as White may have fostered is superficial, and the situation calls for deeper probing. Pollution, Richardson says,

is only one side of the picture. What we have produced in the Western world by our passion for dominion has had its rewards.... If we have made our air unbreathable, we have also conquered polio and TB. If we have made our rivers undrinkable, we have extended the span of life and cut infant mortality.52
But however such questions of value are viewed, the point remains that Christianity had a man-centered rather than nature-centered beginning, and nature was largely in the background.

Another element which may have increased Christianity's anthropocentric character is the fact that the New Testament contains fewer and less explicit "nature texts" than the Old Testament. The Old Covenant incorporated specific laws for man to observe, laws touching on nature as well as the vertical relationship of God and man. By contrast, the New Testament gives only implicit attention to nature with scattered references in the beatitudes, parables, sacraments, and letters to the Churches. Ultimately this New Testament solution is presented as a new covenant destined to incorporate all creation. But the Christian message has generally focused on the links of God to man, and man to man, and this lack of explicit teaching on the role of nature in New Testament and the Church may have left the common man with a creedal vacuum susceptible to entry by the pagan cultures it penetrated and the secular forces apparent in a "post-Christian" era.

In an age of rejection, persecution, and struggle against pagan ideologies and "nature gods" it was highly unlikely that much attention would be given to the relationships of nature to man, and who then found cause for concern about an environmental crisis? Christian faith was Theo-centric and anthropo-centric, and the man-
centered matrix White refers to was cast. While doctrines relative to man and God might be firmly defined by Catholics and Protestants, a doctrine of nature was not systematically formulated.

From the beginning, then, Christianity had no firm doctrines about nature save that it was created by God while man was created in God's image, that it was inherently good though subject to "vanity" or frustration, and in the eschaton, the fullness of time, it would be perfected. Pagan Greek and European philosophies could not consistently be assimilated into Christianity in their entirety, though certain elements might be compatible with the faith. Thus, Greek religion was polytheistic in contrast to Old Testament monotheism and Western Europe was considered barbaric in its pre-Christian history. But this did not prevent the medieval Church from appealing to Greek philosophers or using week-days named after Teutonic gods. Elements of Greek culture, in particular, influenced Hebraic Christianity in its formative years; the New Testament was originally written in Greek or Aramaic. Thus various ideologies of man and nature evolved in juxtaposition as Christianity interacted with the pre-Christian cultures it penetrated. And it becomes a delicate and discriminating theological task to separate the non-Christian from the biblical elements. Of course Western man was influenced by Christianity, and Christianity was influenced, at least peripherally, by pre-
Christian Western ideology. Christianity and Western culture became partially identified with each other and Western culture generated the Industrial Revolution with its accompaniments of rising living standards and increasing ecological pressure, as White has correctly stated. But deeper understanding calls for the separation of the different elements that have been interwoven with Judeo-Christian convictions. As Cyril Richardson graphically put it:

To understand adequately the roots of the ecological crisis, it would be necessary to survey the whole history of Western culture... to that formation of culture in which Greek, Teutonic, and Christian modes of thought and life were inseparably fused.53

The Hellenic culture, which Christianity first penetrated, had its numerous nature-gods but gave little attention to nature per se: Greeks denuded their forests in the interests of building navies and the engines of war. In spite of the belief in the intrinsic value of nature which may have been inherent in the thought of Greek philosophers such as Plato (427?-347 B.C.) and Aristotle (384-322 B.C.), Greek philosophy was essentially anthropocentric. Plato seems to have failed to see the connection between human abuse and environmental deterioration in Attica. Referring to Glacken's Traces on the Rhodian Shore (1967) James and Martin noted that "Plato missed the chance to change the whole history of speculation concerning man-land relations by identifying man as
destructive agent."\(^5^4\) Greek philosophy did little to further the cause of nature in Christian development and practice. In the opinion of some, it rather contributed to the development of a dualism which involved man-over-nature concepts. As Fackre stated, Greek thought exalted man's mind and power to reason, and this served to heighten the concept of man's superiority over nature. In Greek thought, he alleges,

\[
\text{Goodness was located in reason, the purpose of which was to order the recalcitrant vitalities of life. God himself was conceived as Mind that gave form, and therefore significance, to a low-grade pre-existent stuff.}^5^5
\]

Thus, the earth became thought of as second-class and inferior matter, not derived from the will of the Creator. In addition, Greek thought included the idea that religion's purpose was to extract the soul of man from materiality and help him through the realm of spirit to escape from the burdens of fleshly experience. This man-against-matter philosophy, introduced at a time when persecution and the burdens of life seemed insurmountable to many early Christians, helped give New Testament teaching on the redemption of the soul an "other-worldly" emphasis which enabled the believer to separate the material from the spiritual and heavenly. In this "escapism" from the physical life nature was inadvertently overlooked and Christianity's God-and-man focus was reinforced. At least in some circles, holistic Christianity has never fully recovered from this one-sided understanding
in spite of a few notable theologians somewhat influenced by Plato and Aristotle.

Platonic views of nature equated being and goodness: "to be is to be good, and a thing is good insofar as it is." The fact of existence was a good, a thought compatible with the first chapter of Genesis in that God continually referred to His creation, each step along the way, as "good." Theological interpretation suggests that everything, in its own way, imitates God. "And to the extent that it does this, it is good with a goodness that does not depend on human purposes, but is grounded upon its relation to God." This view of nature, in spite of a lack of definition, prevailed among Christians and continued to be latent through the Reformation era. It simply was not highlighted or given the firm theological grounding which would have rendered it less susceptible to erosion throughout subsequent centuries.

Aristotelian views also supported nature's intrinsic value, but this was more dependent on processes and purpose. Aristotle is considered the father of teleological interpretation wherein the whole of nature was viewed as a vast number of processes, with each component moving towards its proper final purpose. When it reached its intended goal and fulfilled the wider purpose, it was seen as objectively good. Even though Aristotle supported the intrinsic value of nature, his emphasis on the final state implicitly further opened the door for nature to be
viewed as serving the higher purposes of man. By rooting ultimate goodness in achievement of a goal, it subtly opened the way for questioning the value of individual parts and processes for their own sake.

The views of Aristotle and Plato could be used to support either theism or non-theism, but both, particularly Aristotle's, had considerable influence on early Christian thought about nature.

Nor were the early Church fathers blind to the value of nature. Clement of Alexandria (150-215 A.D.) referred to God as ordering all living things and appointing them to helpful co-existence. In his first epistle he wrote:

The fruitful earth, according to His will, brings forth food in abundance, at the proper seasons, for man and beast and all living beings upon it, never hesitating, nor changing any of the ordinances which He has fixed.... All these the Creator and Lord of all has appointed to exist in peace and harmony.\textsuperscript{58}

While Clement viewed man and beast as both provided for, Irenaeus (120?-? A.D.) spoke about the divinely established harmony whereby all creatures were created with a nature suited to the kind of life decreed for them: "on angels an angelical nature, on animals an animal nature, on beings that swim a nature suited to the water, and on those that live on the land one fitted for the land."\textsuperscript{59} In essence, Irenaeus adumbrated the doctrine of God as the designer and maker of a whole harmonious functioning ecological system.

Augustine too (354-430 A.D.) found good in all crea-
tured; to exist is to partake of goodness. Commenting on St. Paul's passage in I Corinthians 12:20-25, he said:

But what the apostle thus praises in the measure and form and order of the members of the flesh, you find in the flesh of animals, alike the greatest and the least; for all flesh is among earthly goods, and consequently is esteemed among the least.60

His view of the independent goodness of nature apart from man is clear throughout his writings. Even "thorns" and "thistles" were good in their proper place in God's plan, and in speaking of goodness as relative to a plan, Augustine suggests a purposive relationship for all things as well as biological relationships between all living creatures and their environment.61 But, at this point Augustine may be taking another direction. He believed that all things in creation, taken by themselves, are good, but it is the relationship with the whole which makes them better. This idea may indicate the incorporation of Aristotelian views on the value of processes and especially corporate purpose as well as Plato's view that all things are good simply because they share in the goodness of existence. Nevertheless, Augustine's views regarding the intrinsic goodness of nature are clear in his statement that "All things that exist, therefore, seeing the Creator of them all is supremely good, are themselves good."62

At least as early as the Gnostic heresy, orthodox Christians were reacting to elements in Greek thought
that elevated the mind and denigrated matter, and by Augustine's time the lines were sharply drawn. Man had become too "god-like" in pagan Greek thought, and man, in Christian thinking, was not to be so elevated even though he was created in the image of God. Greek science and technology were largely separated from each other and, although technology was admired, it was relegated to a secondary place because science exalted intellectual reflection rather than material improvement. Some Christians saw science and philosophy as opposed to revelation and doctrinal purity and began to react negatively. But while many leading Christians were reacting against scientific inquiry, they shared Greek admiration for technology and were not opposed to its development. In fact, some saw technology as the substitute or alternative to science. Thus the way was paved for Christian acceptance of technological advance once science and technology merged during the Renaissance; the vigorous acceptance of both science and technology by some who followed the Reformation—it was largely Puritans who established the English Royal Society, the prototype of national scientific societies that were in formation. But Christianity, credited with aiding the birth of science in the first place, later lost a good deal of the influence it might have had on science by ignoring it, and many Christian groups are plagued to this day with a mixture of apprehension and hostility toward science. Hopefully, however,
this attitude is being quietly reversed; for example, Donald MacKay, physicist and Christian spokesman, sees the scientist as an important map-maker for Christian stewardship of the land. He views the scientist as having a special privilege and responsibility in the common task. Our primary aim, says MacKay, "is to become sufficiently clued-up with respect to the structure of our Father's world—to learn the 'go' of it sufficiently—to be able to operate reliably in it as faithful stewards." Science has an important place in understanding the content and operation of the universe and men like MacKay, Houston and others have effectively highlighted the need for scientific comprehension among lay Christians.

According to Houston, Christian rejection of science "prepared the way for the secularization of science." And Richardson further states:

Scientific speculation on the origin of the universe, on the development of man...was decisively hindered by the conviction that the last word in science had been spoken by Moses.

Thus the origin of the rift between science and religion was clearly established by the fourth century. While not intentionally relegating nature to a lower status, Augustine could see no connection between the truth of scientific inquiry and the truth of religion and, according to Dooyeweerd, Augustine argued that "God and soul, that is what I desire to know. Nothing more." The rift between secular science and other-worldly Christianity
deepened the neglect of nature, for nature was pre-
eminently the subject of science. For the most part
Christians at this point left the study of nature up to
science and concentrated on doctrines relating God to man.

The separation of religion from science did not have
any immediate radical affect on Christian attitudes
towards nature. In other words, nature was not overtly
rejected just because some Christians rejected science.
Christianity did not explicitly relegate the study of
nature to science either; rather it fell to science by
virtue of neglect. Early theologians still had consider-
able respect for nature's goodness; it was, after all,
created by God who is good. Fackre contended that it was
against the rationalism of Greek philosophy and the
de-emphasizing of the material world that the early Church
fathers included creation in their Creed and doctrinal
statements. In one of the foremost statements of Chris-
tian doctrine, the Apostle's Creed reasserts that the
world was made by God, and, as such, it "bears His
stamp." God invented matter, it was His idea and He
pronounced it "very good" in Genesis 1. It therefore
enjoys a derived dignity. However, these attempts to
acknowledge the importance of nature were not explicit
enough to offset the general direction; matters of the
soul and heavenly things continued to be the focus and the
study of nature was left to science.

Following Augustine, the Italian monk St. Benedict
(480?-543? A.D.) joined the ranks of theologians who supported an interest in nature. Perhaps a better exemplar of the role of "patron saint for ecologists" than the saint of Assisi proposed by White, he believed that "true conservation means not only protecting nature against human misbehavior but also developing human activities which favor a creative, harmonious relationship between man and nature." As several writers have pointed out, Benedict seems more realistic in his attitude towards nature because he and his followers accepted active intervention in nature as farmers, builders, and scholars. The biologist and Nobel prize winner Rene Dubos credits the order Benedict founded, the Benedictines, with combining practical and theoretical skills "in such a wise manner that their management of nature has proved compatible in most cases with the maintenance of environmental quality." Thus they achieved an intimate, harmonious relationship with the world around them, and during the early Middle Ages their influence was so successful that monasteries burgeoned all over Europe and their number reached many thousands.

St. Francis of Assisi (1181?-1226? A.D.), the most widely known exemplar of Christian ecology, came six centuries later. He sought to live simply and humbly, following Christ's example as closely as possible. Appreciated by today's conservationists, he would, Lynn White affirms, provide a good starting place for a rethinking of
ecology and theology. While probably contributing little to the theological framework for ecology, St. Francis has contributed to a critically needed reassessment of nature. In his own right he played a pivotal role in an attitudinal shift, and takes his rightful place in history for his call to give nature its rightful place. It is for this that he stands out, and we may well think it unfortunate that his radical teaching and example were not successful in gaining the attention of his contemporaries and bringing medieval Christianity back into balance.

Following St. Francis came Thomas Aquinas (1225?-1274 A.D.), more in line with Augustine than with his nearer predecessor. It is surprising that St. Francis' emphasis on and reverence for nature did not have a great influence on Aquinas, for Aquinas believed that every creature is good though some may also do evil and thus destroy greater good. His reasoning, much like Augustine's, was that what God creates is good in its own created nature; nothing therefore, is to be lightly destroyed. Much like St. Francis of Assisi's view, this was a concept with important implications for conservation; the preservation of the natural environment had value for all creatures per se as well as for human beings. However, Aquinas' belief that the life of animals and plants is preserved not just for themselves but also for man also strengthens the idea that nature exists for man alone. While not a deliberate endorsement of exploitative atti-
tudes towards nature, the emphasis on processes and purpose (rooted in Aristotelianism) continued to develop in Christian theology throughout the Middle Ages and on into the Reformation era.

The Reformation, while bringing major changes to the Church and having a strong cultural impact, initially did little to correct the preexisting direction of the Church (either Catholic or Protestant) concerning nature. Reformation of thought in this respect was largely missed or at least postponed. While the reformers, especially Calvin (1509-1564 A.D.) and Luther (1483-1546 A.D.), maintained a healthy respect for nature and thought about the world as intimately involved in the whole created order, their thinking and theological emphasis lacked any pronounced and pervasive ecological dimension. Luther felt God permeated the whole world of nature, and nature, in turn, reflected God. Calvin saw all of creation as the evidence of God's glory and even went so far as to say in his Institutes that, "it can be said reverently...that nature is God." But this applied only in a strictly limited sense, with reference to the manifestation of His glory, and nature was not to be confused with God. Nature was not the Reformation issue; God and man were, and the cause of nature was not directly aided. Luther was concerned about salvation by faith and Calvin emphasized the knowledge of God, but concern for nature per se was far from central. As a result, their renewed interest in God and
humanity further reinforced the thought of man's dominion over nature. When combined with the Renaissance emphasis on man, and the discovery of the New World and technological development, the Reformation appears to have further strengthened theology's anthropocentric direction through its emphasis on man and neglect of nature. The theologian Karl Barth claims that during the Reformation Christianity took on a formal "the-anthropological" (God/man centered) status. 73

This renewed emphasis on God and man, together with the prevailing direction of Christianity since its inception, was reinforced by the humanistic emphasis of the Renaissance; man and his potentialities were highlighted. Several factors were merging in history and the entire Western world, Christianity included, was launched into the present-day exploitative patterns of behavior. The discovery of the New World was opening men's minds and challenging science, and Galileo (1564-1642 A.D.), Newton (1642-1727 A.D.), and Descartes (1596-1650 A.D.) were forging a new tradition of autonomous science that viewed nature autonomously apart from religion. Science and technology were joining in a marriage under the influence of Cartesian principles, opening up the possibility for the Industrial Revolution that has accelerated environmental exploitation to present-day proportions. This new science, reaching its zenith with Kant (1724-1804 A.D.), began to compartmentalize nature, giving it
quantitative mathematical treatment; natural processes were viewed mechanically rather than purposefully as Aristotle saw them. As a result, intangible relationships in nature continued to elude both science and religion, further eroding a sense of the value of nature for itself. Together, the Reformation and the Renaissance failed to accentuate the value of nature for itself, and, however unintentionally, their influence reinforced the conditions for technology to develop without restraint. And, of course, four hundred years ago, no one could foresee the results of the Industrial Revolution.

But this was only part of the story. During the seventeenth and eighteenth centuries, interest in, and respect for, the created order remained in the hearts and minds of Christians. A general feeling for nature as a source of moral refreshment and as a realm capable of independent praise of the Creator persisted in the Church into the Romantic period. For example, Isaac Watts wrote "Joy to the World" which expressed nature's capacity to rejoice in creation and praise to the Creator. However, in spite of sentiment and reverent attitudes towards nature that continued down through the centuries, nature was largely ignored in theology and, as a result, regard for nature was not consistently strengthened within the Christian community.

And the remaining links were further eroded by developments in secular philosophy and science. The
Enlightenment sought to pry science loose from its religious framework, and Immanuel Kant, rejecting traditional cosmological proof for the existence of God, reinforced the view that questions of nature and God should be kept separate. God, for Kant, became a subjectively necessary reality that is always transcendent and not to be employed in reference to objects of our experience. The mechanistic approach to the world of nature may therefore have been strengthened, the more so as theologians elected to leave scientific speculation to the secular (and increasingly separate) community. Following Kant, the quantitative (and perhaps mechanical) aspects of nature were viewed as decisive and some elements of Christian tradition were susceptible to the absorption of mechanistic views. Since the Enlightenment, some Christians became almost as vulnerable to positivistic, mechanistic and countervailing humanistic presuppositions as were non-Christians.

Some elements in 20th century theology, influenced by Karl Barth, have come to deny any direct, independent revelation of God in the natural world or in human history. Adopting the principle that the revelation of God Himself came only through Christ, Barth emphatically rejected "natural theology," the traditional belief that man could learn directly about God through observing nature. While Barth himself did not discount the importance of the created world (he devoted four volumes of Church Dogmatics
to creation viewed Christologically and maintained that "the goal of creation...is to be the theatre of His glory"), his theological shift on the revelation of God in nature has been considered by some to have considerably furthered the neglect of reverence for nature. H. Paul Santmire, a leading critic of Barth, has stated that

Karl Barth thought of theology as 'the-anthropology,' as a confession and exposition of God's special relationship with the human creature.... That is the theological framework that has dominated theological reflection about humanity and nature in international ecumenical Protestantism...for the last three decades or more.

Emil Brunner, Rudolf Bultmann, Paul Tillich, Reinhold Niebuhr and other leading twentieth century theologians have also been accused of furthering the neglect of nature. The world was brought into theology merely as a stage-setting where human history was played out. Man continued to be the central focus and theology concentrated exclusively on the New Testament remedy for the specific problems of human existence. Others tended to stress the social, human and individual aspects of theology. As some critics see it: twentieth century man has become almost totally absorbed in questions that have to do with self, personal meaning, self-discovery and man-centered problems. Certainly, in some circles of thought, the "me-generation" seemed to be preoccupied with the state of the human mind, emotions, and body. Some phases of theology progressively centered on man and his quest for purpose and meaning to life, and "popular theology" (over-
lapping with psychology), looked towards self-esteem and healing for the whole man, body, mind and emotions. One has only to turn on "Christian TV" to experience this emphasis!

Without denying the importance of nature, the explicit focus of much religious thought was thus on man, and issues relative to the value and preservation of nature were neglected in theological works. This left the contemporary Church, as a whole, somewhat isolated if not alienated from movements pressing for such conservation. It is not surprising that White and his supporters, pondering the deep convictions that shape our surface actions, are wondering if Christian tradition is not the root cause of our problems. Even Santmire concedes that the Church has turned away from nature and become indifferent and alienated from it, having no clear theology of nature and "uncertain about its relation to the earth." Some branches of twentieth century theology have focused totally on man as a cultural rather than natural being. The sharp theological division that has become common between nature as a realm of necessity and history as a realm of human choice and value has created a subtle erosion of our perception of nature's value. Sin, whether characterized as individual or social, tends to be viewed solely in terms of man's violation of his relationship with God, forgetful of the view that this is a covenant relationship including a relationship of stewardship to
the non-human world. So viewed, nature can become only a stage where human history is played out.

In summary, some Christian thought and much action, in spite of a few notable attempts to highlight the principle of stewardship and preserve created nature, has exhibited an attitude which permits or encourages an exploitative attitude. White has correctly noted that the Judeo-Christian tradition, in its accommodation of "dominion" as exploitation, has been congenial to exploitative views and behavior regarding the earth.

However, even with this qualification, the Judeo-Christian tradition can scarcely be considered the central, let alone the sole, precipitator of Western (or other) man's behavior, a behavior which it usually seeks to correct. Similar attitudes have also been evident in other societies, and secular ideas have become dominant throughout much of Christendom. Some would go so far as to say that modern Christianity has been as vulnerable to the absorption of non-Christian ideas as Christian ideas have been successful in influencing secular minds. Indeed, one of the persistent convictions among Christian thinkers such as Schaeffer and Goudzwaard is that it is the secularization, not the Christianization, of thought which promoted plunder. Christians neither bear "the huge burden of guilt" for our ecologic crisis nor have they explicitly or implicitly insisted that man exploit nature for his own purposes. Rather, the world's problems have been
inadvertently, and almost innocently, aggravated by
lopsided concentration on individualistic salvation
coupled with neglect of broader concepts including explicit
attention to nature.

In the opinion of this author, White's forceful attack has had a positive effect on the Christian community in spite of the negative emotions elicited in some quarters. Without challenge from White and others who shared his views, it is doubtful if so considerable a reassessment would have been evident in the nature/theology interface. Through investigating White's assumptions, the Christian "thinking class" has become aware that the doctrine of redemption has not been viewed holistically, and that, by failure to give due attention to the place of nature in the eschatological hope of Christian faith, they have left an opening for mechanistic, exploitative attitudes towards the earth. Even Schaeffer, one of White's most trenchant critics, agrees that White has "brilliantly traced the origin and consequences" of "a moral crisis...involving man's history and culture, expressed at its roots by our religious and ethical views of nature--which have been relatively unquestioned in this context." Schaeffer further confirms that "on the American scene, the Calvinistic and the deistic concepts of God were peculiarly alike at this point. Both envisioned God as absolutely transcendent, apart from the world, isolated from nature and organic life." Of course Schaeffer does not agree
with White on every point, but he does join White in condemning both the "technological arrogance" and the "political realism" that disregard nature with its created value, a system which variably "interacts with man and culture."80 "If nature is so perceived," he concludes, then Christians will develop something more than a subjective and romantic individualism. Then they will develop "a love, a sense of awe, and a feeling of empathy with nature" which is firmly grounded in their faith.81 In parallel fashion, Santmire has boldly postulated that Christian faith, hope and love have been weakened because the concept of redemption has not been perceived as inclusive of man's whole experience and environment.

Men cannot easily live lovingly in a world which has not been claimed wholly by God's love. Why, it may be asked, care for the bodily existence of a starving brother if that existence is doomed to ultimate annihilation?... It seems likely that his ability to relate himself positively to all bodily beings, including man, will be diminished, eventually perhaps curtailed altogether.... Our relation to nature and our love for our fellows are intimately related. When the first suffers, the other will very likely suffer too.82

If Santmire and Schaeffer are correct, the Christian community has everything to gain by acknowledging and correcting any past neglect: faith lived out would demonstrate belief in the divine order involving man and nature. The Christian living which White claimed to see in St. Francis may never have been fully exemplified, but perhaps the pressing nature of the environmental crisis will alert
the community to see all of nature, man included, as involved in holistic living and mutual relationship.
NOTES

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2 Ibid.

3 Ibid., pp. 27, 24.


5 Carl O. Sauer, "Early Relation of Man to Plants," 
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13 Carl O. Sauer, "The Agency of Man on the Earth," 
Man's Role in Changing the Face of the Earth, ed. Wm. L. 
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p. 65.

14 Darby, op. cit., p. 203.


18 Tuan, loc. cit., p. 244.
19 White, op. cit. p. 27.

21 Ibid.
22 Ibid., p. 38.


28 Ibid.
29 Ibid., p. 113.
30 Ibid., p. 114.


32 Ibid., p. 167.
33 Ibid.
34 Ibid., pp. 179-180.


38 Ibid.


40 Ibid., p. 45.

41 White, op. cit., p. 25.

42 Ibid.

43 Ibid., p. 29.

44 Ibid., p. 30.


48 Ibid.

49 Elsdon, op. cit., p. 131.


51 Ibid., p. 118.

53 Ibid., p. 464.


55 Fackre, op. cit., p. 120.


57 Ibid.


59 Ibid., II (ch. 2), p. 361.


61 Ibid., (ch. 36), p. 359.


64 Houston, I Believe in the Creator, op. cit., p. 167.

65 Richardson, op. cit., p. 465.


67 Fackre, op. cit., p. 121.

68 White, op. cit., p. 30.


70 Ibid., p. 132.

71 Ibid.
72 John Calvin, *Institutes*, 1.5.5.


76 Santmire (1977), op. cit., p. 98.


79 Ibid., p. 124.

80 Ibid., p. 125.

81 Ibid.

82 Santmire (1968), loc. cit., p. 300.
CHAPTER V

ECOLOGY AND THEOLOGY: TOWARDS COLLABORATION?

What hope, or need, is there for a convergence of interests in ecology and theology? The facts are that there is a global concern over an environmental crisis that is not self-correcting, the evidence that a biblical theology promoting harmony with nature is not fully developed, and the conviction expressed by Lynn White that science alone cannot solve the crisis. These things leave one with the hope that science and religion can move back into a cooperative phase that will benefit both man and nature. The world is in trouble and the future of man is threatened. The past two centuries have seen science objectively concerning itself successfully with the mathematical and quantitative investigation of nature, religion little concerned (apart from the vexed question of origins) with man's relationship to nature, and religion and science popularly viewed as in opposition. In this chapter we shall attempt to indicate the limitations of science, its need to incorporate extra-scientific ethics in regard to nature, and to suggest a potential role for theology in helping to solve the dilemma. The crisis has brought with it a nearly universal awareness which has penetrated every discipline, and almost everyone would agree that greater light on man's subjective nature—that which determines his values and attitudes—would be helpful. For man has
been, and presumably will continue to be, the principal agent of environmental change. This is the premise that White and others have used as they postulate Judeo-Christian attitudes as the root of our ecologic crisis.

Science has, of course, been invaluable in historical progress, having a positive influence in both the quality and quantity of human existence; no one would deny this. However, the consequences for the natural environment have been serious, and inevitable questions involving ethics and the quality of human life are now being asked. Science, which has been solely concerned with objectively ascertaining data by separating the human subject from the natural object, is being forced to take into account the ethical side of human nature, since man is the principal agent of negative or positive change. Science rightfully seeks to be objective, to view its data from the outside and dispassionately; but, when it comes to dealing with objects that are affected by human interaction, the subjective whole, including the psychology behind man's behavior, must also be taken into account. Theologian Eric Rust, while concurring with Paul Tillich's philosophy that science is God's gift to man and encouraging Christian's to make the proper use of it, also stated that "Science cannot give us ethical direction, for moral categories do not fall within its scheme of things." Science as such has never been able to explain the ultimate "why" of things. James Houston, geographer become theologian,
underscored the limitations of science by pointing out that behind and outside science is an unexplainable pre-existent experience, and therefore science cannot box the whole of reality "within a closed system." The world existed as a whole before it could be subject to dissection according to analytic scientific method and the pre-existing world ultimately cannot be wholly dissected according to scientific method. As Houston points out, hundreds of years ago Pascal recognized the final stage of reason as the recognition that there is an infinity of things beyond it. One of the prevailing trends in current thought about science is recognition of its social and theoretical context. Modern scientists are coming to recognize that by excising critical elements in a holistic experience they have isolated analytical science from the wholeness of human experience. The very rules for scientific analysis limit its ability to measure that which is subjective. Ron Elsdon has stated that though "important scientific and technological advances have been made in recent years [this] is not enough unless the basic question is also answered - why does man behave as he does"? Geographer George Carter, in his textbook Man and the Land (1975) stated that the discussion of geography today "is much more concerned about how men make their choices." Geographers Spencer and Thomas in their textbook Cultural Geography (1969) argued that "There has been perhaps too great a tendency to seek a quantitative
solution to human problems, whereas, in truth, the total answer can be given only in qualitative terms.\(^6\) The field of environmental perception has been investigating human elements since the early 1960s. Objectivity has its limits, and many in science are now realizing its limitations and inability to solve the crisis alone. Ron Elsdon has stated that

In spite of much popular opinion, there is now an increasing realization that science alone does not have all the answers. This conclusion has been reached by scientists as well as others. Thus the final report of the 1968 UNESCO Biosphere Conference contains the following statement: 'Natural science and technology alone are inadequate for modern solutions to resource management problems.'\(^7\)

As Elsdon added, political, social and economic factors were in view, but the issue was pointedly addressed also to theologians, especially by the "U.S. National Academy of Sciences and National Resources Council."\(^8\) Their joint Committee on Resources and Man included, among other things, religious aspects as potentially significant, and called for study of the question: "What is the effect of religion and religious differences on the nature of and demand for resources"?\(^9\)

Others such as Odil Steck agree, in part, with White that the reason for our crisis does not lie simply in the fact that we lack the technologies to reverse the crisis. The evidence is clear that it is not industrialization and mechanization alone that have created the problem but—in this White is undoubtedly correct—the
human presuppositions producing them. As Steck says

The goals, attitudes, models, ways of behavior, values and norms of a society, in individuals and collectively, are accordingly the domain where the determining causes are to be found. And this exposes man, in his social character and because he is stamped by the history of his civilization, as being the true originator of the situation. 10

Science, Steck continues, in seeking to know and understand the laws that govern individual parts of nature,

rests on the essential separation between the perceiving human subject and the object of his cognition.... Man as the perceiving subject is in principle detached from the object of his cognition. What he establishes as being real in the external world he is investigating is whatever emerges as the logical explanation according to the laws about which he is inquiring. 11

While it cannot be doubted that truth emerges from this attitude towards knowledge which dominates our scientific and technical world, Steck also sees it as a problem central to our situation. "Rationality" perceives and extracts dangerously little about the world and its perceiving subject, man. As a result, the objects of investigation lose their wholeness and inherent unity because scientific questioning, by its very nature, divides, isolates, classifies and catalogues, destroying the original link between subject and object "which binds the two together in a total event of encounter and living association comprehending both." 12 The dilemma of the modern scientific worldview, according to Houston, is that "the [supposed] intelligibility of the physical universe
has eclipsed any sense of morality in the phenomenal world." And, as White has correctly intimated, the roots lie in man's moral and ethical attitudes toward nature.

As has been ascertained, this logical, mechanistic division between man and nature has affected both scientific and religious communities and it is impossible to conclude that one bears a greater burden of guilt for the crisis than the other. It is impossible to trace the roots of this mechanistic thinking to Judeo-Christian principles involving man's transcendence of nature. Not only were those principles far from mechanistic, but man has universally been the dominating force, cultivating and modifying nature through his labor. Does this mean Judeo-Christian teaching is at fault for the misuse of the earth? Can it mean that somehow man must surrender his unique position of influence, or that some illusory return to St. Francis' doctrine is necessary? Or, as Steck and others suggest, does the task rather lie in redefining man's undeniable special position, and seeing his role within, rather than parallel to, "the overriding, total framework of the natural world and environment as an overriding complex of life." Steck's suggestion would rule out any assumption that nature exists solely for man's purpose without rejecting the fact that man occupies a unique and unquestionable role of influence in relationship to nature. It puts nature back into its rightful place without either roman-
ticizing it or imparting divine attributes to it. Nature will always, whether for good or ill, be affected by man's actions.

Therefore, as man is the principal agent of change, it is imperative that we further our understanding of the basic beliefs and values that underlie the attitudes and goals that affect behavior. No solution for the environmental crisis can be found until we can correct or at least curb the propensity to abuse nature. Just as Christianity cannot assume the burden of guilt for the crisis, neither can science alone. Science has been only one of many influences that, in a complex web of circular causation, have molded the minds of people and encouraged the attitudes, aims, and expectations behind human activity. The roots go wider than either science or specific religions. Propensities that are present in all mankind, Christian and non-Christian, surely need to be reckoned with and disciplined if we are to check the problem at its source.

In addition to bringing a heightened awareness of the ecological problem, the 1960s also brought a concomitant renewal of interest in humanist principles, secular and religious. In the wake of the crisis, as geographers David Ley and Marwyn Samuels stressed, "the long ignored and unfashionable issue of values and value-loaded science was reopened to examination from both within and outside the halls of academe."15 "Humanist Geography" began to
focus intently on a holistic geography of man. An interest in self-realization and human potential, which goes back at least as far as the early Greek philosophers and the Renaissance, is linked to the thought-world of geographers such as Paul Vidal, John K. Wright, David Lowenthal, Carl Sauer, Donald Meinig, Yi-Fu Tuan and Clarence Glacken. In the search for humane, ethical paradigms, Judeo-Christian values have continued to resurface and be re-evaluated. Society is troubled, and tolerance of continuing environmental abuse has its limits. New values (or at least applications of old values) are necessary if man is to live in reasonable harmony with nature. A new philosophy involving man in proper relationship to the environment would hopefully have broad appeal across cultural and ideological lines, but as the geographer Iain Wallace has boldly stated,

the most coherent account of man's nature and his appropriate relationship to the natural environment is, in fact, a Christian one, rooted in biblical understanding of creation and salvation history.¹⁶

While this claim that the disputed biblical view of man and the world might provide the necessary direction could strike many readers as archaic, arrogant, or both, we cannot ignore the fact that Lynn White himself postulates that if the crisis is rooted in the Judeo-Christian tradition, its remedy also could lie within that religious tradition. In its pure form, Judeo-Christianity is clearly ethical in nature; man's economic drives and
appetites are powerful, but the Bible has much to say about the value of simple living and the perils of heaping up riches. The prophets, including Jesus, condemned a lifestyle based on unnecessary and conspicuous consumption and were themselves examples of modest living. In this respect at least, St. Francis could (as White proposes) be a good starting point.

In practice, though not necessarily in principle, the indictment that White has brought against the attitudes of many in the Christian community is all too accurate, but it is also true that his attack has served to awaken a renewed ecological awareness and stimulated that community to investigate the biblical relationship of man and nature. What is emerging is a mature, holistic biblical view where creation is both good and abiding and included in God's plan of redemption. This view sees Christianity as a religion incorporating the promise of redemption for both man and (in the Pauline phrase) "the whole creation."¹⁷ As Christian writers are apt to point out, no secular world-view promises more than postponement. James Houston, for instance, points to Bertrand Russell's eloquent statement that man and his universe, almost beyond dispute, were nothing but "the outcome of accidental collocations of atoms" and that all human genius, labor and inspiration throughout the ages are destined to extinction in the inevitable demise of the universe.¹⁸ Such pessimism, Houston asserts, is the inevitable outcome of
the severance of a "scientific" world-view from Christian faith. All that a purely secular conservationist can hope for is to postpone the end - to polish the brasses on a sinking ship. But in the Christian hope the earth will be renewed, and, "far more profoundly than the ecologists and environmentalists generally realise, the future of the earth is irrevocably linked with the future of mankind.... Environmentally, man has the power and the choice to destroy this planet earth or to preserve it in wise stewardship." But "we have this sure hope that 'the creation itself will be set free from its bondage to decay and obtain the glorious liberty of the children of God'," and there is no place for the ultimate pessimism that clouds all secular hope. To say "I believe in the Creator" is to affirm an energetically hopeful attitude to the earth. This holistic view of man and nature has initiated a new level of eco-consciousness at both the theoretical and practical levels. At the theoretical level, Christians are increasingly discovering that the Bible implicitly and explicitly promotes the principle of stewardship in the care and proper use of the earth. At the practical level, influential people in the Christian community are strongly concerned with education and concrete action to exemplify ancient biblical truth. There is a new challenge to view and influence culture in a positive way rather than accommodate it or separate from it.
In summary, White was correct in implying that Christianity had mainly concerned itself with God and man. However, it is quite unrealistic to expect theologians (or anyone else for that matter) to deal with issues before they become issues. At best, they can perceive principles which may become significant in the future. When Marsh wrote *Man and Nature*, one hundred years before White addressed the same subject, neither the secular or religious communities heeded the warning, because environmental abuse was not then evident to them as a major issue. The origin of Christianity lay in a pre-industrial age, and its purpose, then and thereafter, was a divine-human relationship. That objective may be timeless, but today, the environmental issue is major, and all sectors of society are now forced to confront it. White has successfully drawn (or provoked) significant elements of the Christian world into action. Science and religion are faced with a new issue that is independent of the question of origin. Solving mysteries of origin cannot resolve today's concerns; this pursuit leaves man with vast ignorance of that which makes him truly and self-consciously human, with a unique relationship to nature, or the rest of nature if you will. Solving the questions of origin, as Houston states, "cannot help us explain why man, unlike all other animals, is one genus and one species, unique as no other creature is unique." Thus in both the subjective awareness and objective, practical action, man
recognizes both his uniqueness and the economic drives that have thrown the world into a crisis, and here Judeo-Christian biblical views may well be relevant to the understanding of human nature. Two human geographers, Iain Wallace and James Houston, affirm biblical relevance to human issues. James Houston stated that "what the Bible has to say of man's relationships is revolutionary in relating a true understanding of his nature and responsibility." Iain Wallace, in seeking an authentically human economic geography, stated

I propose what many readers will regard as the disingenuous thesis that the most coherent account of man's nature and his appropriate relationship to the natural environment is, in fact, a Christian one, rooted in the biblical understanding of creation and salvation history.

Relationship is clearly the issue, and the Christian community is uncovering new biblical truth about man's relationship to nature that will undoubtedly enter more firmly into its attitudes and behavior in the future. Western civilization has, to some degree, acted upon a distorted and incomplete view of man's "dominion" of the earth, a concept that has not, to date, been consistently and positively applied. However, some historians and cultural geographers suggest that exploitation is too deep-rooted and widespread for even "spiritual" forces to control. Some argue that environmental abuse is neither unique to Judeo-Christianity nor essentially religious (in the popular sense of that word) in its inception.
Economic motives, including the drive for improved living standards as well as pride and greed, have seldom been checked by ecological considerations. Goudzwaard, a Dutch Christian economist, is convinced that Western man's drive for economic expansion is essentially religious at root. It generally "emanates from a desire to be recognized and to become emancipated in a society whose primary values are money and material prosperity."24 The notion that money and material goods deliver happiness lies at the root of man's thirst for progress--it continually drives him on for that which will supposedly make him happy, free, recognized or successful. This quest for happiness through progress, according to Goudzwaard,

has penetrated western society so profoundly because it was able to present itself as a 'faith' in progress, as a religion of progress. That is also why the present-day crisis of the idea of progress has the depth of a crisis of faith. There is more at stake than a somewhat reduced confidence in 'progress' on the part of western man. His whole life perspective has undergone a shock. The unfulfilled promises of progress have brought about an emptiness, a vacuum, with the respect to the meaning of life and society.... The very thing in which we had placed all our trust is turning against us to devour us.25

The Western world's economic order is governed by an expectation of happiness initiating drives that denude and pollute the environment and threaten to destroy mankind along with his hopes for "the good life." Goudzwaard is hopeful that "human societies can experience ever anew a liberating and healing power" if men will allow a conver-
sion in their mental outlook with respect to the meaning of life and society. This will require a shift in mentality that transcends the ethics of survival and maintenance; to do this we must go to the roots of the meaning of life and society and, at this point we clearly "touch upon the religious roots of human life." Clearly, a solution necessitates a basic reapplication of both scientific and religious values. Stimulated in part by White and other critics, the Christian community has probed more deeply into its theological roots and developed a greater awareness of its holistic implications, a viewpoint that could inform modern man's understanding of both his humanity and his manifold relationship to the world he inhabits.
NOTES


3 Ibid.


7 Elsdon, op. cit., pp. 9-10.

8 Ibid., p. 10.

9 Ibid.


11 Ibid., p. 35.

12 Ibid., p. 37.


14 Steck, op. cit., p. 44.


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18 Houston, I Believe in the Creator, op. cit., p. 270.

19 Ibid., p. 255.

20 Ibid.

21 Ibid., p. 73.

22 Ibid.

23 Wallace, loc. cit.


26 Ibid.

27 Ibid.
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