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A Theology of Ecology and its Relation to the Pesticidal Exploitation of the Environment

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A THEOLOGY OF ECOLOGY

AND ITS RELATION TO THE PESTICIDAL EXPLOITATION

OF THE ENVIRONMENT

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by

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INTRODUCTION

On January 26, 1970, Newsweek magazine reported in its feature article that man has always been a messy animal. The report noted the complaints of the ancient Romans as smoke pervaded their city. In the first century Pliny lamented the destruction of crops from climatic changes caused by the draining of lakes or the new direction of a river's current. In the past man could leave his ravaged state behind and move to another unspoiled part of the earth.[1] Today a community can destroy its land and still import food. This creates the possibility of desolating ever more distant land without knowing or caring. Modern man is aware of his strength, but he often does not notice his weakness. Man's weakness lies in the fact that his pressure upon nature may provoke revenge.[2]

Man's abuse in his employment of pesticides represents an aspect of his assault upon nature. Residues of DDT in soils of a Long Island marsh revealed an average of thirteen pounds of this pesticide per acre. This same pesticide lodges in many carnivorous birds and fish. The amounts of DDT found in these creatures were comparable to doses that proved lethal in experiments with similar birds and fish. This suggests the sharp reduction of bird populations in various areas of the North American continent.[3] DDT is carried via water and air. The pesticide's concentration throughout the ocean is nearly uniform.[4]

Rachel Carson, a scientist and prophetess of the environmental crisis, wrote in Silent Spring, "As man proceeds toward his announced goal of the conquest of nature, he has written a depressing record of

destruction, directed not only against the earth he inhabits but against the life that shares it with him."[5] As he portrays those who do not fear God, Jude could have been describing the condition of today's environment. Jude says:

> These are blemishes on your love feasts, as they boldly carouse together, looking after themselves; waterless clouds, carried along by winds; fruitless trees in late autumn, twice dead, uprooted; wild waves of the sea, casting up the foam of their own shame; wandering stars for whom the nether gloom of darkness has been reserved forever. (Jude 12,13)

What does man do in the face of an eroding environment?

Barry Commoner, a biologist at Washington University and national ecological authority, mentions that man needs to live in nature rather than attempting, futilely, to conquer it. The professor proposes a great alliance among nations, scientists, and the public in order to maintain harmony in the balance of nature. He notes that the only alternative to succeeding is the destruction of our planet.[6]

The portents of ecological chaos raise deep theological issues for man. Werner Elert, a Lutheran ethicist from Germany, describes man as "the responsible center of creation."[7] Because God reconciled the cosmos, the Christian man especially should be aware of his responsibility. Elert notes that "Christians are the only people who can still rejoice in this earthly life because they are the only people who can still hope."[8] Love is central in man's relationship to the creation. One of the first duties in loving the neighbor is to preserve life in the ordinary physical sense.[9] Part of preserving life is living responsibly with other forms of life around us. The theologian and missionary doctor, Albert Schweitzer, relates in his autobiography, "A man is ethical

only when life, as such, is sacred to him, that of plants and animals as well as that of his fellow men."[10]

The purpose of this paper, then, is to make an attempt to review the stance toward the environment in both biblical and church history, formulate a skeletal theology of ecology, and examine man's responsibility toward nature with particular focus on the use of pesticides in the environment.

The scope of this paper is limited to the study of the threat of an unbalanced ecology and its resulting theological implications for the church. The methodology consists of extensive use of bibliography, personal correspondence, government monographs, and several unpublished articles. All of these are contained in the bibliography.

FOOTNOTES TO INTRODUCTION

[1]"The Ravaged Environment," Newsweek, LXXV (January 26, 1970), 31.

[2]"Fighting to Save the Earth from Man," Time, XCV (February 2, 1970), 57.

[3]G. Woodwell, C. F. Wurster, Jr., and Peter Isaacson, "DDT Residues in an East Coast Estuary: A Case of Biological Concentration of a Persistent Insecticide," Science, CLVI (April, 1968), 821-823.

[4]Justin Frost, "Earth, Air, Water," Environment, XI (July/August, 1969), 15.

[5]Rachel Carson, Silent Spring, (Greenwich, Connecticut: Fawcett Publications, 1962), p. 83.

[6]Barry Commoner, National Audubon Convention in St. Louis, Proceedings, Autumn, 1969.

[7]Werner Elert, The Christian Ethos, (Philadelphia: Fortress Press, 1957), p. 320.

[8]Ibid.

[9]Emil Brunner, The Divine Imperative, (Philadelphia: The Westminster Press, 1947), p. 210.

[10]Albert Schweitzer, Out of My Life and Thought: An Autobiography, (New York: Henry Holt, 1933), p. 159.

CHAPTER I

A BASIC UNDERSTANDING OF THE BIBLICAL STANCE CONCERNING ECOLOGY AND ENVIRONMENT

A Working Definition of Terms

Four different terms will be used, often interchangeably, to denote the concept of ecology. These words are: ecology, environment, nature, and creation. In technical usage these words differ slightly in their meaning. In this paper the four terms are used in a general way to describe the living and nonliving things that surround the life of man.

Time magazine, in an article describing the deterioration of the environment, defines ecology as "the study of how living organisms and the nonliving environment function together as a whole or ecosystem."[1] Ecology can suggest a biological or sociological discipline as well as an undergirding attitude.[2] This word derives its root from the Greek word *oikos*, meaning house. The term, in a broader sense, means environments.[3] Ecology deals with relationships. The word describes the relationships of organisms with their environment.[4]

Environment is frequently used with broader definition than ecology. Henry A. McCanna, a director of the National Association of Soil and Water, describes environment as "the aggregate of all the conditions and influences affecting our lives wherever we are, individually and as a society."[5]

The definition given the word creation by the *Random House Dictionary of the English Language* is simple and useful. The definition reads, "creation is that which is or has been created."[6]

Nature is a word possessing a wide range of meanings. Definition number five in the aforementioned dictionary contributes to the focus of this study. The definition explains, "the material world, as surrounding man and existing independently of his activities."[7] One important change has to be made for the purposes of this paper. The latter phrase of the definition, "existing independently of his activities," is counter to the role nature will have in this study. Edgar S. Brightman, philosophy professor at Boston University, mentions the theme of birth in his etymological description of nature. He notes that nature has an original association with the concept of life.[8]

For the purposes of this paper, the terms ecology, environment, creation, and nature will be used with flexibility to describe those animate and inanimate things that share life with man.

Hebrew View of Ecology

The concept of ecology and nature permeates the Old Testament world. The creation narrative is always visible in Hebrew thought. Eric C. Rust, professor of biblical theology at Crozer Theological Seminary, discusses the relationship of man and nature in the Old Testament. He notes that the biblical approach has no room for pantheism. God stands uniquely over the world He made. He is not an impersonal force that shaped nature and history, but God got involved in history from the beginning with the work of creation. Never does the Old Testament suggest that the created order becomes independent of its Creator.[9] Divine activity was intrinsic to Hebrew nature. Determinism and causality were alien concepts. Everything had a direct dependence on God. Nature

did, however, have a quasi-independence of its own. As Rust informs, "Its life was not the life of God."[10] Nevertheless, the sun, moon, and stars could be summoned to give praise to their Maker.[11] Rust rules out both pantheism and panentheism in the Hebrew concept of nature.[12] A vivid description of the Creator's activity in His creation is Psalm 104.

Therefore, nature is directly related to God. A British Old Testament scholar, Henry W. Robinson, amplifies the nature conception growing out of the creation epic. Robinson explains no one conceived of a dichotomy of nature and the supernatural. They were an entity. He continues, "The whole environment consists partly of the visible and partly of the invisible, and the practical distinction is that between the usual and the unusual."[13]

Hebrew thinking moves an opposite direction from that of the Hellenistic, western culture. Greek polytheism moved from the natural to the spiritual; the Hebrew religion advanced from the spiritual to the natural realm.[14] Professor Robinson contends that Yahweh never operated from a transcendent position. He always operated within nature. Yahweh is unique in that He belongs to the area of personal life, and yet He is not an expression of natural phenomena.[15] His power was felt to be operative in one new sphere after another. He was felt in the early and latter rains of the cornfield, and His vigor was salient in the storm that hurled the swollen Kishon on the Canaanites. Nature became a vast panorama of His power and wisdom.[16]

Through all the majesty and glory of the natural world, the Old Testament sees the environment, finally, as "the arena for the moral issues

of human life."[17] God's primary revelation to man is not to show Himself as the Former of the heaven and earth. Rather, He desires to show Himself as the God of covenant and promise. He is the Lord of history. The God working in history, as Robinson explains, necessarily works in the sphere of nature.[18] History and nature are indivisible themes in the workings of Yahweh. God's focal point in the creation is man. The Old Testament places man in clear distinction from the other parts of creation. God's covenant motif in history, then, is in special relationship with men.[19]

The benefits of the earth were especially replete when God's people responded to Him in obedience. Nature did not become a cheap divine bribe, but it was a promise of God's goodness. In A Light to the Nations, Norman K. Gottwald writes that the covenant love of Yahweh is the clue to man when he views the bounty of nature.[20] In the prophetic writing, Gottwald notes, "Hosea regarded the life of agriculture as proper and essential when the land was accepted as a stewardship from the covenant God."[21] Job and Jeremiah wrote of the Lord's order and regularity in nature as proof of His unchanging care for His creatures.[22] It is Second-Isaiah who, more than the other prophets, emerges with a consciousness of God as Creator (Isaiah 45:18). A full creation-faith was becoming apparent.[23] Rust believes the Wisdom writers were very near the truth when they viewed God as the unifying center for the natural order. God was directly active in and through this order.[24] A summary of God's compassion for man and the environment in which he lived in the Old Testament world is made by the Danish systematician, Regin Prenter, when he said, "The concern of the Old Testament is not to explain how the world

came into existence; its concern is that the life of the world may be preserved."[25]

New Testament Thought

The basic characteristics which are exhibited in the Old Testament view of nature also appear in the teaching and ministry of Jesus. His prime emphasis is not about God as Creator but God as Father.[26] New Testament professor, James Caligan, notes that Jesus was not a romanticist who idealized nature.[27] Rather, He employed the expressions of nature with reverent regard for their essential meaning in the created universe.[28] The Messiah makes His clearest reference to the creation in the Sermon on the Mount, as Prenter notes, where He warns against anxiety and refers to the furnishings of the Creator. "Here, as in the Old Testament, creation is understood as a present reality, and not as a past event explaining the origin of the world."[29] Jesus, too, saw no bifurcation between the spiritual and earthly plane.[30] His greatest power in the natural order is a redemptive love.[31] Father Joseph Gremillion of the Catholic Relief Services, in a Vatican II report, sees creation and redemption knit together in Jesus Christ, when he writes, "Because we come from the Creator through His perfect image who is now Man, creation and incarnation are closely at one with each other."[32]

More specifically, Caligan describes the many references to nature attributed both to Jesus' words and to the physical description of the environment surrounding His ministry. A variety of parables and sayings talk about plants including flowers, thorns, reeds, thistles, tares, grain, mustard, vines, and trees. The element of growth is often a key

theme to these natural phenomena. Seven parables use plants as a referent. Four utilize animals. Outside of the parables, Mark 4:26-28, 13:28, Matthew 16:2, and Luke 6:44, 9:58, and 13:34 are some of the references that discuss nature imagery. In surveying several of the major events of Jesus' life, nature descriptions are seen as numerous. Examples of this are: the sky and star at the nativity and later with the Magi, the river and dove at Christ's baptism, the wilderness in the temptation narrative, birds of the air and tree bearing fruit are a few of the many nature pictures in the Sermon on the Mount, the cloud at the Transfiguration, the verdant Garden of Gethsemane, the garden at the resurrection, and the cloud and the Mount of Olives at the ascension. Stilling the storm and walking on the water were two of several events intimately associated with the environment in the life of Jesus.[33]

The other writers of the New Testament differ from the Gospel writers in their handling of natural imagery and in their understanding of nature itself. Some of the keen awareness of nature is not present in other writings as it was in the Gospel narratives. Nature has become more rational and speculative as it is frequently clothed in doctrine and polemics.[34] However, the view is unequivocal that the creation is in close affinity to man's total existence. Like man, nature is subject to imperfection, decay, and death. Nature also bears evidence of the evils and restrictions that vitiate the harmony of the ecology. Apostolic writing, too, gives promise of a restoration of nature.[35]

The apocalyptic writings of the New Testament, including II Peter, Jude, and Revelation, differ radically from the Gospels in the use of natural imagery. The symbolism of the apocalyptics is neither simple

nor natural. Nature is often portrayed as unusual and bizarre. Caligan would say, however, "the over-all picture of nature in the writings of the apostles is meaningful and hopeful."[36]

All of Scripture affirms nature. It does this several ways. God created nature with the spirit of covenant love. God manifested Himself in history in the crucible of man's environment. He eventually became a Man and celebrated man's world with man. The apostolic writings conclude Scripture with a more distant and speculative approach to nature. However, the motif of hope and the restoration of the environment is present also in this writing.

FOOTNOTES TO
CHAPTER 1

[1]"Fighting to Save the Earth from Man," p. 57.

[2]Ibid.

[3]"The Ravaged Environment," p. 35.

[4]The Random House Dictionary of the English Language, edited by Jess Stein (New York: Random House, 1967), p. 452.

[5]A Time for Initiative, edited by Henry A. McCanna, (League City, Texas: National Association of Soil and Water), p. 5.

[6]Stein, p. 341.

[7]Ibid. p. 953.

[8]Edgar Brightman, Nature and Values, (New York: Abingdon-Cokesbury Press, 1945), pp. 30-31.

[9]Eric Rust, Nature and Man in Biblical Thought, (London: Lutterworth Press, 1953), p. 35.

[10]Ibid. p. 66.

[11]Ibid.

[12]Ibid.

[13]Henry Robinson, Religious Ideas of the Old Testament, (London: Gerald Duckworth and Co., 1952), p. 103.

[14]Ibid. pp. 71-72.

[15]Ibid.

[16]Ibid.

[17]Ibid.

[18]Rust, p. 38.

[19]Robinson, p. 98.

[20]Norman Gottwald, A Light to the Nations, (New York: Harper & Bros., 1959), p. 304.

[21]Ibid.

[22]Rust, p. 162.

[23]Ibid. p. 38-39.

[24]Ibid. p. 67.

[25]Regin Prenter, Creation and Redemption, (Philadelphia: Fortress Press, 1967), p. 193.

[26]Rust, p. 161.

[27]James Caligan, The Shadow of Heaven, (New York: Vantage Press, 1956), p. 57.

[28]Ibid. p. 43.

[29]Prenter, p. 196.

[30]Caligan, p. 59.

[31]Rust, p. 249.

[32]Joseph Gremillion, Vatican II: An Interfaith Appraisal, edited by John H. Miller (Notre Dame, Indiana: University of Notre Dame Press, 1966), p. 532.

[33]Caligan, pp. 45-47.

[34]Ibid. p. 34.

[35]Ibid. p. 35.

[36]Ibid.

CHAPTER II

THE DEVELOPING ATTITUDE TOWARD ECOLOGY AND ENVIRONMENT IN THE CHURCH AND WORLD

Early Fathers

The early fathers portray an ambivalent view toward nature. The Gnostic influence had a pervasive effect in the early church. This contributed to a dualism that considered the world, that is nature, as evil. An example of this evil view of the world is noted by Roderick Nash, a biologist at the University of California in Santa Barbara. He recalls Saint Basil the Great in the fourth century. Basil established a monastery and rapturously described the wilderness around it. Nash points out that Basil's "virtual uniqueness in this respect dramatizes the general indifference in his time. On the whole the monks regarded wilderness as having value only for escaping corrupt society."[1] A Roman Catholic nun, Mable G. Murphy, studied the nature allusions in the writings of Clement of Alexandria. She mentions Clement as an example of the mixture of feelings concerning nature that the early church possessed. Clement talks of God feeding the birds and the fish. "But they are irrational creatures...and we are better and wiser than they and have been created not to eat and drink but for the knowledge of God."[2] Historian Lynn White, Jr., from Los Angeles, California, explains the man-centered approach to nature promulgated by the early church:

> Especially in the Western form, Christianity is the most anthropocentric religion the world has seen. As early as the second century both Tertullian and Saint Irenaeus of Lyon were insisting that when God shaped Adam he was foreshadowing the image of the incarnate Christ,

> the Second Adam. Man shares, in great measure, God's transcendence of nature. Christianity, in absolute contrast to ancient paganism and Asia's religion (except, perhaps, Zoroastrianism), 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.[3]

Sister M. Theresa Springer, in a nature study concerning the works of Saint Ambrose, is not as harsh as White in discussing the themes of the nature references in the writings of the early church. Sister Springer notes:

> Patristic literature presents nothing more attractive to students of literature and of the natural sciences than the concepts of external nature shared by the great minds of the early Christian centuries. Interest in physical science and interpretation and appreciation of the physical world are evident in the pages of the serious theological and ethical discussions that form the bulk of the writings of the Fathers...To the student of literature are revealed minds which, for all their other-worldliness in bent and profession, are alive to the charm and beauty of this world, although nature-allusions are employed, for the most part, in patristic literature from pious or didactic motives.[4]

Despite a frequent negative dualism, many of the nature references of the early fathers speak of the ecology around them with a note of affirmation. Counter to Clement's previous quote, he also used nature to strengthen a theological point. He expounds in the Protrepticus, "If we accept salvation all things are ours without cost, earth, sea, heaven, and all things living in them. The creatures that fly and those that swim, all that is upon the earth is ours."[5] In the works of Clement, he made 227 objects and phenomena as a basis for nature allusions.[6]

Saint Cyprian is described by Sister Mary T. Ball as "sensitively aware of the beauty and charm of the world about him."[7] His chief contribution to the literary use of nature was analogous to that of Jesus. He simply used illustrations from the creation surrounding Him to explicate truths.[8]

Saint Augustine rhapsodizes most eloquently about the world he shares.

Sister Mary J. Holman studied the nature-imagery in his works. In his De Catechizandis Rudibus Augustine describes showing beautiful tracts of the countryside to friends. The Bishop of Hippo notes that although the scene may have become routine to use, showing it to friends gives us new joy in the novelty of the scene.[9] An example of the delight Augustine felt toward the creation is represented in this description from De Vera Religione. He writes:

> Furthermore, we should consider the melodious, the delightful sounds with which the air vibrates when the nightingale is singing. This little bird would not fashion these sounds so readily by blowing, even though it desired to do so, unless it had them, so to speak, stamped incorporeally in the very principle of its existence...And it does this, not from any knowledge, but by reason of the hidden ends of its nature, which are regulated by that immutable law of harmonies.[10]

Several of the statements by the early fathers have a contemporary ring to them. The blemishing of the environment evoked anger also in their day. Cyprian talks about the earth being filthy and unsightly--like a "mold of dust."[11] He describes a dry fountain and the famished land. "That the earth mourns is proof of God's angry power."[12] Ambrose bemoans the avarice of men who exploit the sea. "For food was the sea given, not for danger; use the food but not for gain."[13] Augustine pictures a fountain whose stream has become impure because of herds trampling through it.[14] Augustine frequently talked about the purpose of various creatures and elements within nature. That concern is reflected in a comment from De Moribus Manichaeorum. It is this work, one of Augustine's most polemical, that contains much material about the role of nature. The bishop writes:

> Oil is agreeable to our bodies, but to many animals having six feet, exceedingly harmful. And is not hellebore food for one, medicine for another, and poison for a third? Who would not call salt a poison, if taken immediately? And yet who can enumerate the many great benefits

> our bodies derive from it? Sea-water is injurious when drunk by land animals, but when used for bathing it is very suitable and useful for many of them; however, fishes find preservation and enjoyment by using it in both ways. Bread nourishes man, but kills the hawk.[15]

Middle Ages

By the time the Church had reached the Middle Ages, a reverent regard for the environment was at a low ebb. Roderick Nash mentions, "The ideal focus for any Christian in the Middle Ages was the attainment of heavenly beatitudes, not enjoyment of his present situation."[16] Many attempts of appreciation of natural beauty were checked.[17]

Some evidence toward change is seen in the twelfth and thirteenth centuries. A Roman Catholic historian-philosopher, Marie D. Chenu, in a book published two years ago, writes:

> Precisely in the twelfth century we find ourselves in an age when, in the West, Christian people, thanks to the spread of culture and thanks even more to a sensational apostolic awakening, became collectively aware of their environment and sought to rationalize it.[18]

Chenu mentions a few pages later that the whole world of pseudo-nature was finally fading from men's imaginations. Men were growing to see religious significance in earthly reality.[19] They began to picture the universe as an entity. This was an ancient Hebrew view, as described earlier, that was being revived. A clear sign of this was the employment of the word <u>universitas</u> in systematic treatises. It was a concrete noun designating the oneness of the universe.[20]

The men of the twelfth century were seeing nature more as a partner rather than something against which people do battle.[21] Nature's cataclysmic events were no longer the only source of fascination. Rather, the regular and determinate sequences of nature were the foci of much interest.

Nature (with a capital letter) had become personified.[22] This revived ecological awareness "afforded a vision of man's place in the world."[23]

The man who personifies the awakening to the creation during this era is Francis of Assisi. Assuming that birds, wolves, and other wild creatures had souls, Saint Francis preached to them as equals. Francis, however, was still extreme enough in his relish of nature to be declared a heretic by the Church.[24] Nevertheless, this humble saint laid some of the groundwork for the growing celebration of nature as seen in Luther and Bacon.

Luther and Bacon

Nature formed a significant part of Luther's life. Much of his thinking was done while walking through the woods or working in his flower garden. He loved roses particularly and once told a friend, "When you see a rose, tell her I greet her."[25] Luther would frequently spy on birds and watch their ways and manners.[26] Luther saw joy and miracle in the environment. However, he also saw nature as the workshop of the devil. In the field and forest the Reformer sensed the power and presence of the demonic. Lutheran writer, Ewald Plass, also notes that he loved nature, but "the trail of the serpent was over it all."[27] A Luther scholar from Germany, Heinrich Bornkamm, explains that Luther derived many metaphors from the realm of nature. In the last year of his life Luther wrote in a volume of Pliny, "All creation is the most beautiful book or Bible; in it God has described and portrayed Himself."[28] Luther saw nature as a sign of God's wisdom, and it warrants constant exploration.[29] The Reformer had strong thoughts about the creation and

its ability to illustrate the nature of Christ and the questions of human existence. Luther was able to be overcome by a primal wonder and awe as he observed the natural things about him. Once he said, "If you really examined a kernel of grain thoroughly, you would die of wonderment."[30]

Luther frequently grew melancholy over creation's subjection to the very same things that oppress men and to man's ingratitude and greed in his relationship to nature.[31] According to Luther, God's order to man to rule the world resulted in a curse for nature. Man became dissatisfied and the order of creation was disturbed.[32] Bornkamm writes, "God obliged to chastise man with the very possession entrusted to him, i.e. nature. Therefore man is pathetically alone in the world with his guilt.[33] Luther bemoaned man's blindness in appreciating the gifts and miracles of nature, "but man ignores them all and thanks God for none."[34]

Francis Bacon continued to carry the theme into the Renaissance of seeing nature as something not evil, but good. His works have a plethora of short essays depicting many facets of nature. He discusses the nourishment of young creatures in the egg,[35] the care of plants,[36] on the habits of a chameleon,[37] and many treatises about medicinal usage.[38] The Renaissance opened the way to many discoveries in the world of nature and numerous writings that adulated the environment.

Statements that represent more recent history, e.g. Vatican II and World Council of Churches, are interspersed in the remainder of the paper. More current views toward the environment are incorporated in the sections of the paper that develop a theology of ecology.

FOOTNOTES TO
CHAPTER 2

[1]Roderick Nash, Wilderness and the American Mind, (New Haven, Connecticut: Yale University Press, 1967), p. 18.

[2]Clement Paedagogus, ii, 14. 5-6, as quoted by Mable G. Murphy, Nature-Allusions in the Works of Clement of Alexandria, (Washington: The Catholic University of America Press, 1941), p. 48.

[3]Lynn White, Jr., "The Historical Roots of Our Ecologic Crisis," Science, CLV (March 10, 1967) 1205.

[4]M. Theresa Springer, Nature-Imagery in the Works of Saint Ambrose, (Washington: The Catholic University of America Press, 1931), p. xvii.

[5]Clement Protrepticus, 94, 2, as quoted by Murphy, p. 20.

[6]Murphy, p. 110.

[7]Mary Ball, Nature and the Vocabulary of Nature in the Works of Saint Cyprian, (Washington: The Catholic University of America Press, 1946), p. 275.

[8]Ibid. p. 274.

[9]Augustine De Catechizandis Rudibus, 17, as quoted by Mary J. Holman, Nature-Imagery in the Works of St. Augustine, (Washington: The Catholic University of America Press, 1931), p. 70.

[10]Augustine De Vera Religione, 79, as quoted by Holman, p. 48.

[11]Cyprian Ad Demetrianum, 7.355.23, as quoted by Ball, p. 54.

[12]Ibid.

[13]Ambrose, as quoted by Springer, p. 39.

[14]Augustine Epistulae, 1, 1, as quoted by Holman, p. 98.

[15]Augustine De Moribus Manichaeorum, 12, as quoted by Holman, p. 46.

[16]Nash, p. 19.

[17]Ibid.

[18]Marie Chenu, Nature, Man, and Society in the Twelfth Century, (Chicago: The University of Chicago Press, 1968), p. xvii.

[19]Ibid. p. 5

[20]Ibid.

[21]Ibid.

[22]Ibid. p. 18.

[23]Ibid. p. 33.

[24]Nash, p. 19.

[25]Ewald Plass, This Is Luther, (St. Louis: Concordia Publishing House, 1948), p. 287.

[26]Ibid.

[27]Ibid. p. 286.

[28]Heinrich Bornkamm, Luther's World of Thought, (St. Louis: Concordia Publishing House, 1958), p. 179.

[29]Ibid. p. 181.

[30]Ibid. p. 182.

[31]Ibid. p. 191.

[32]Ibid. p. 192.

[33]Ibid.

[34]Ibid. p. 183.

[35]Francis Bacon, The Works of Francis Bacon, (London: H. S. Baynes Publishing, 1824), p. 287.

[36]Ibid. p. 410.

[37]Ibid. p. 375.

[38]Ibid. passim.

CHAPTER III

ELEMENTS IN A THEOLOGY OF ECOLOGY

Christianity and Matter

The history of Christianity has witnessed two views toward nature. First, it reveres life as a vibrant part of God's creative activity. Secondly, certain themes and movements have nurtured a dualism between the spiritual and material that have made the latter seem evil. Frequently these motifs have been concomitant in the linear movement of Christianity--from the earliest Hebrew origins until now. The two concepts mentioned have been discussed in various ways through the historical overview of this paper. In addition to other areas, this chapter should further amplify the aforementioned views that God's people have had in relation to the environment.

Julian Hartt, a Yale theologian, discusses the ambivalence of the two views. He mentions that despite the fundamental biblical affirmation of the goodness of creation, Christian thought has "entertained ideas" that have made legitimate man's total exploitation of his environment.[1] Hartt continues in mentioning two views that have contributed to the exploitation. One such emphasis has been an excessive other-worldliness. Man has had the tendency to see God as totally transcendent and in the "outside world." This approach carries with it the assumption that Christianity is primarily concerned with man's fate in the next world rather than in this one.[2] The other <u>modus operandi</u> of the Christian grew out of the individualism that was characteristic of theology since the Reformation. Hartt notes, "For many Christians, salvation is simply

a matter between the individual and God and has no necessary connection to his relationship either to other persons or to the world in which he finds himself."[3] In a book that discusses a theology of environment, a Presbyterian pastor, Frederick Elder, stresses the necessary relationship that man has with the nature surrounding him. Elder points to the sparrow example in the Gospels. Jesus said God had regard for the sparrow. The pastor explains, "The point is that God regards the sparrow qua sparrow and not as some bird that man might see or somehow use."[4] Elder argues that it does not stand to say that a blooming flower viewed by no human is worthless. The flower indeed has value because God made it and sees it.[5]

By way of contrast, several of the Eastern religions emphasize a strong man-nature relationship. This is marked by respect and almost borders on love. This is absent in the West.[6] Jainism, Buddhism, and Hinduism emphasized compassion for all living things. Man was not apart from nature. Shintoism in Japan also linked God with the wilderness, and it never contrasted the two as did the Western faiths.[7]

William Temple, the British philosopher, argues that "one ground for the hope of Christianity that it may make good its claim to be the true faith lies in the fact that it is the most avowedly materialist of all the great religions."[8] In his book, Nature, Man, and God, Temple highlights the fact that Christianity's central affirmation is "The Word was made flesh." In theory and theology Christianity is committed to the reality of matter having an essential place in the divine order of things.[9] Werner Elert asserts that central to the faith expression of the new creature is not fear or degradation of the world, but he loves it and

prepares it for the day of liberation.[10]

Care for life has to be a chief concern of the Christian.[11] The writers of the Roman Catholic Dutch A New Catechism continue in their argument by saying that a devotee of God concurs with God's purposes. One great concern is a care for all that lives.[12] The Netherlands group says the Fifth Commandment also means:

> It condemns everything that makes life less agreeable for ourselves and others: pollution of the air, dirt, breaches of traffic laws, the sale of bad goods, working too hard for one's living--ruining one's life and the life of one's family in order to live![13]

Prenter finds agreement in this concern for life when he writes, "It is therefore impossible for anyone who believes the gospel of creation to hold life in contempt."[14] In his book, Ethics, martyred Lutheran theologian, Dietrich Bonhoeffer, gives the reminder that the underlying right of natural life is the safeguarding of nature against any type of injury or killing.[15]

Focusing the previous thought of care for life on the contemporary environmental situation, Lynn White Jr. argues that since the roots of our trouble are so very much religious, the remedy to the crisis must also be essentially religious.[16] Lutheran theologian, Joseph Sittler, corroborates the same theme in saying, "Reason says that destroying clean air is impractical. Faith ought to say it is blasphemous."[17]

Psychic Relation Between Nature and Man

As noted in the previous section, Frederick Elder proposes that man has to be much more in relationship to his environment in order to to be sensitive to its proper balance and its quality. Regin Prenter

explains in Creation and Redemption that man's whole surrounding world is a working together of spirit and matter. These are joined together by God in His creative activity. Prenter notes, "Man's surrounding world is not only the physical-astronomical universe, but also a spiritual universe."[18] Rust describes the psychic bond that existed between nature and people and Yahweh in the Hebrew tradition. This Old Testament scholar points to the Amarna letters in which a writer laments the famine and says, "My field is like a woman without a husband."[19] The implication lies in the reality that what affects the people affects the land. The earth has a psychic life of its own which is, in turn, directly related to the people inhabiting the earth.[20] The parable of Jotham describes talking to live trees, to fig trees, to the vine and bramble--as if they were animate (Judges 9:7ff.). The poetry of Job proclaims the stars singing together, and all the sons of God shouting for joy (Job 38:7). Gottwald, too, writes about Yahweh's dominion over the sphere of nature and agriculture in His sharing of the relationship with nature.[21] Hosea makes fertility and sterility contingent upon faithfulness to Yahweh. Gottwald explains:

> One of the most difficult of all ancient ideas for the modern reader is precisely this attribution of psychic life to nature so that nature participates in human culpability and human felicity. It became a cardinal idea in subsequent Jewish eschatology the transformation of nature to accompany the renewal of man. Mythopoetic as the idea may be, there is much in it that modern sophistication might ponder, to take only so patent a "rationalization" of the ideas as the depletion of natural resources owing to the irresponsibility of man...When Israel is faithless to him, he withholds the rain and the land languishes and mourns.[22]

Luther relates a similar theme of God's relationship with earth and man. He declares that God is substantially present everywhere being in and

through all creatures. Luther continues by saying, "His own divine essence can be in all creatures collectively and in each one individually more profoundly, more intimately, more present than the creature is in itself."[23] French evolutionist-philosopher, Pierre Teilhard De Chardin, carries the psychic relationship of Christ with the world into a hurling world process. Teilhard describes Christ as the principle of vitality Who aggregates to Himself the total psychism of the earth.[24] The psychic relationship between man and his environment involve the intimate actions of God. This has been mentioned. With the belief that God is directly involved in this process, the next paragraph will deal more specifically with the psychic relationship between man and nature.

Harvard theologian, Harvey Cox, mentions in The Secular City that presecular man lived in an enchanted forest. Rocks and streams were alive with friendly or hostile demons. Their world view understood everything to be alive. Secularized man considers everything dead.[25] The Old Testament world does not reflect a magical pantheism as Cox described. However, Rust notes that domestic animals were a part of man's psychic totality. Those animals belonged to him.[26] The nation of Israel, itself, was a psychic whole. Its life was intimately connected with the land.[27] Job was concerned that the earth be respected by man and that man not treat it lightly. If it is violated, the land will revolt and produce the "flora of the wilderness."[28] The covenant relationship with God was knit to the covenant relationship with the land itself. Rust explains that the Genesis creation story describes God's fashioning of man from the dust. This strongly symbolized man's close tie to the earth.[29] Hosea trumpets the psychic relationship to

nature:

> And it shall come to pass in that day, I will answer, saith Yahweh, I will answer the heavens and they shall answer the earth. And the earth shall answer the corn and the wine and the oil. And they shall answer Jezreel (Hosea 2:21, 22).

A New Catechism explains that man is made of the same material as the earth and plants and animals around us. The very fibers of our beings are so much part of the universe that we cannot think or make a decision without the processes at work in our brain cells that are composed of the world's matter. But this is not humiliation; this is the way we are as God has formed things.[30] Teilhard describes, in part, the "within" of man denotes a "psychic" face of the stuff of the cosmos which has been here from the beginning of time. He notes, "the exterior world must inevitably be lined at every point with an interior one."[31]

Lutheran philosopher-theologian, Paul Tillich, describes in a sermon that sin has caused an estrangement among all things that had been intended to live together. He writes:

> The strangeness of life to life is evident in the strange fact that we can know all this, and yet can live today, this morning, tonight, as though we were completely ignorant. And I refer to the most sensitive people amongst us. In both mankind and nature, life is separated from life. Estrangement prevails among all things that live. Sin abounds.[32]

Creation Reflects God

Men of almost every race and creed have made some connections between creation and God. It is to nature that men have often looked in answers for ultimate questions. Edgar S. Brightman noted in Nature and Values that man has turned to nature repeatedly in history. In ancient Ionia, when the Greeks first began to search for meaning and order, Thales of

Miletus looked to nature. After Plato had divided the world into sensation and ideas, Aristotle turned to nature to find unity. During the Renaissance Copernicus and Galileo resorted to nature to find trustworthy objectivity. Descartes split the universe into mind and matter, and Spinoza countered by putting the two together again in one substance of nature. Revolutions hounded the world, and Wordsworth went to nature for calm and a type of mystical elevation. Modern thought in the nineteenth century turned to nature and science grew. Nature has been a source for authority, unity, and the divine throughout the ages.[33] John Muir, the American founder of several national parks, valued the wilderness as "an environment in which the totality of creation existed in undisturbed harmony."[34] The idea of the countryside as the appropriate site of the conversion experience is common to the Christian tradition. It was the accepted locale in New England Calvinism. The great colonial preacher, Jonathan Edwards, once said, "I walked abroad alone, in a solitary place in my father's pasture, for contemplation."[35]

Chenu explains the creation narrative in Genesis was the recounting of the natural play of the elements as the world emerged. She notes that God was not absent, "but it is the very laws of nature that reveal His presence and His action."[36] Caligan fortifies the same thought by describing nature as the work of God's hand. The visible world reflects the truth and glory of the unseen world of the spirit (Romans 1:20).[37] Elert gives the reminder that finding joy and beauty in the world is characteristically Christian. However, this is no conclusive proof of a life of faith. "Only the pure eye of faith can perceive forgiveness in nature...Faith alone can enjoy the beauty of the world without reservation."[38]

Making the connection, then, between elements in our environment with the theological substance they can carry is the character of the next section.

Creation as Sacramental

William Temple explains that the use of sacramental rites is a common feature of human religion, and it is especially prominent in Christianity.[39] Whenever the idea of the sacramental is present, it is necessary to have a material sign.[40] Temple asserts that the creation itself is a sacramental activity of God toward His creatures.[41] Temple appears to view the concept of sacrament as material sign through which God works. Father Gremillion maintains that man should not meddle too much in nature, because "nature is God's domain and sacral."[42] The symbolism that was prominent during the Middle Ages, Chenu explains, provided for the spirit a nourishment drawn from the "sacramental character of the universe."[43]

Theology writer, Elton Trueblood, mentions that the most profound truths about the human spirit could be expressed in the teachings of Jesus by reference to seeds and soils and birds and stones and lambs. It was Christ's use of parables, Trueblood believes, that applied the reality of a sacramental universe.[44]

Karl Barth sees the Eucharist as a meaningful bridge between natural elements and man. He notes that the Lord's Supper is "the communion of the people gathered around the table to eat real bread and drink real wine, really to make use of the things created by God, of bread and wine."[45] Barth highlights the fact that the Eucharist is God's good creation.

Joseph Sittler mentions in an article in The Christian Scholar the triad of God, man, and nature bound together in a unity in the action of the Lord's Supper. The Lutheran School of Theology professor says:

> God--man--nature! These three are meant for each other, and restlessness will stalk our hearts and ambiguity our world until their cleavage is redeemed. What a holy depth of meaning lies waiting for our understanding in that moment portrayed on the last evening of Christ's life: "And he took bread, and when he had given thanks he broke it and gave to them, saying, 'This is my body.' ...Likewise also the wine...'this cup is the new covenant in my blood.'" Here in one huge symbol are God and man and nature together. Bread and wine, the common earthy stuff of our life when we have it, and of death when we've lost it. Both in the hands of the restoring God--man![46]

In the Lutheran church, the sacrament is seen as the material means through which the real presence and benefits of Jesus Christ are manifested. Luther was driven to defend this concept of real presence against Zwingli, the humanists, and the enthusiasts. In Luther's explanation He portrayed the magnificent details of the material environment. His argument reached its climax in explaining how the eternal God Who rules the world can be present in small material realities as bread and wine and water.[47] In Lutheranism, the material elements of the sacraments signal God's redemption. The next section will attempt to describe the bond of creation and redemption.

Creation and Redemption

In the opening chapter of the book of Colossians is this passage:

> He is the image of the invisible God, the first-born of all creation; for in him all things were created, in heaven and on earth, visible and invisible, whether thrones or dominions or principalities or authorities--all things were created through Him and for Him. He is before all things, and in him all things hold together. Colossians 1:15-17.

This is one of several explicit statements from the New Testament that

unites the work of creation with that of Jesus Christ and redemption. Paul's first letter to the Corinthians describes Christ as the One "through Whom are all things and through Whom we exist" (I Corinthians 8:6). John, in his first chapter, also describes Christ as the agent of creation (John 1:3). The writer of Hebrews expresses the same thought (Hebrews 1:2).

E. C. Rust explains that the New Testament writers discovered the activity of the Triune God in the work of creation.[48] Rust notes later in his book that the Son is the instrument of creation and also the goal of creation. The universe exists for Christ and also finds its meaning in Him. In this posture Christ is also intimately concerned with the creation and existence of the world.[49] Biblical theologian, C. R. North, writing in The Interpreter's Dictionary of the Bible, explains that Paul, the Letter to the Hebrews, and the Prologue to the Fourth Gospel all speak of Christ as the agent of creation.[50] Abbe Francois Houtart, writing for Vatican II, notes that "From the very beginning the Word is associated with creation."[51] German theologian, Rudolf Bultmann, writes:

> In harmony with that tradition the Christian message did by and large hold to the idea that the world is the creation of the one true God, and hence that the creator-God and the redeemer-God are one.[52]

Regin Prenter becomes specific in relating the creation with the redemption. He affirms Jesus Christ as the agent of creation. "This means," claims Prenter, "that the cross is at the center of creation... God brings His creative work on behalf of man to its realization through man's death and resurrection with Jesus Christ."[53] Prenter mentions that Christ the Redeemer came not to a strange world, but to His own. The idea

of Christ as Creator is meaningful. It means that the Creator is revealed through Christ Himself.[54] Elert buttresses this theme when he says, "We know that God's forgiveness extends to the whole cosmos because He loved it in its totality and reconciled it unto Himself in its totality. Christ is reconciliation for the whole cosmos."[55] Sittler continues on the same theme when he explains the central assertion of the Bible as being the action of God driving, loving, and suffering His world toward restoration. This restoring Word actually identifies himself with his "cloven and frustrated creation which groans in travail."[56]

Karl Rahner considers grace as the most perfect fulfillment of nature.[57] He continues by recognizing the relationship between the creation and incarnation. Rahner elaborates:

> And who can produce fully convincing arguments to refute the man who holds that the possibility of the Creation depends on the possibility of the Incarnation, which is not to say that the reality of the Creation (as nature) necessarily involves that the Incarnation should happen...The incarnate Word come into the world is not only the actual mediator of grace through his merit (which is only necessary because Adam lost this grace), but by his free coming into the world he makes the world's order of nature his nature, which presupposes him, and the world's order of grace his grace and his milieu.[58]

Prenter sees the redemption as the second creation. As such, he sees redemption connected with all God's delivering activities in the Old Testament. All of these workings are God's creative and redemptive hand at work.[59] Prenter says succinctly, "In the proclamation of redemption there will therefore always be a strong affirmation of creation."[60]

Creation Continues

Creation, as described in the previous section, has not reached its

terminus. It is a constant, ongoing activity. Prenter describes it as a creatio continua. This, he notes, includes both creation and the preserving process. No sharp differentiation is made between the two in either the Old Testament or the New Testament.[61] Father Joseph Gremillion, in his Vatican II report, asserts that creation has not reached its end point. He notes, "God expresses himself in new ways in his unfinished creation; creation continues in this world."[62]

Pierre Teilhard De Chardin sees the creation process as a movement powerful enough to carry man with it. The French Jesuit suggests that man is not actually mastering nature. Rather, man is reacting to this awesome power that transports man on its way to the Omega point. The Omega point is Christ, Who draws all creation to Himself.[63] Romans 8:19 touches a similar thought when it mentions the creation waiting with longing for the revealing of the sons of God.

Prenter strongly emphasizes man's crucial role in the continuing creative activity of God. He views creation as God's ongoing struggle against the powers of destruction.[64] Central to this dynamic is the unfolding of God's creation in a world "in which the rebellion of the fall is constantly challening God's creative victory."[65] God and man are co-workers in this activity. God never relegates man to the role of a spectator.[66] It is more specifically man's action and responsibility in the creation process that this study pursues in the following chapter.

FOOTNOTES TO
CHAPTER 3

[1]Julian Hartt, as quoted by Edward Fiske, "Ecology Becoming Form of Theology," St. Louis Post-Dispatch, (January 11, 1970), 4-I.

[2]Fiske, p. 4-I.

[3]Ibid.

[4]Frederick Elder, Crisis in Eden, (New York: Abingdon Press, 1970), p. 133.

[5]Ibid.

[6]Nash, p. 20.

[7]Ibid.

[8]William Temple, Nature, Man, and God, (London: Macmillan and Company, 1934), p. 478.

[9]Ibid.

[10]Werner Elert, p. 314.

[11]Bishops of the Netherlands, A New Catechism, (New York: Herder and Herder, 1967), p. 422.

[12]Ibid.

[13]Ibid.

[14]Prenter, p. 211.

[15]Dietrich Bonhoeffer, Ethics, edited by Eberhard Bethge (New York: The Macmillan Company, 1962), p. 112.

[16]White, p. 1206.

[17]Joseph Sittler, as quoted by Fiske, p. 4-I.

[18]Prenter, p. 232.

[19]Rust, p. 51.

[20]Ibid.

[21]Gottwald, p. 304.

[22]Ibid.

[23]Bornkamm, p. 189.

[24]Pierre Teilhard De Chardin, The Phenomenon of Man, (New York: Harper & Row, 1959), p. 294.

[25]Harvey Cox, The Secular City, (New York: The Macmillan Company, 1966), p. 21.

[26]Rust, p. 54.

[27]Ibid. p. 50.

[28]Ibid. p. 52.

[29]Ibid. p. 95.

[30]Bishops of the Netherlands, p. 6.

[31]Teilhard, p. 72.

[32]Paul Tillich, The Shaking of the Foundations, (New York: Charles Scribner's Sons, 1948), p. 78.

[33]Brightman, pp. 28-29.

[34]Nash, p. 128.

[35]Jonathan Edwards, as quoted by Leo Marx, The Machine in the Garden, (New York: Oxford University Press, 1964), p. 232.

[36]Chenu, p. 16.

[37]Caligan, p. 8.

[38]Elert, p. 315.

[39]Temple, pp. 482-483.

[40]Ibid.

[41]Ibid. p. 495.

[42]Gremillion, p. 528.

[43]Chenu, p. 35.

[44]Elton Trueblood, The Common Ventures of Life, (New York: Harper & Bros., 1949), pp. 26-27.

[45]Karl Barth, Deliverance to the Captives, (New York: Harper & Bros., 1961), p. 97.

[46]Joseph Sittler, "A Theology for Earth," The Christian Scholar, XXXVII (Sept., 1954) 373.

[47]Bornkamm, p. 188.

[48]Rust, p. 296.

[49]Ibid. p. 212.

[50]C. R. North, "The World," The Interpreter's Dictionary of the Bible, edited by George Buttrick (New York: Abingdon Press, 1962) IV, p. 876.

[51]Francois Houtart, Vatican II: An Interfaith Appraisal, edited by John H. Miller (Notre Dame, Indiana: University of Notre Dame Press, 1966) p. 550.

[52]Rudolf Bultmann, Theology of the New Testament, (New York: Charles Scribner's Sons, 1951), I, p. 168.

[53]Prenter, p. 208.

[54]Ibid. p. 198.

[55]Elert, p. 313.

[56]Sittler, p. 372.

[57]Karl Rahner, Nature and Grace, (New York: Sheed and Ward, 1964), p. 117.

[58]Ibid. p. 127.

[59]Prenter, p. 197.

[60]Ibid. p. 200.

[61]Ibid. p. 199.

[62]Gremillion, pp. 527-528.

[63]Teilhard, p. 214.

[64]Prenter, p. 194.

[65]Ibid. p. 200.

[66]Ibid.

CHAPTER IV

THE ROLE OF MAN IN A THEOLOGY OF ECOLOGY

Man's Rape of Nature

Harvey Cox describes modern man's seizure of nature like a child suddenly released from parental constraints. He takes savage pride in smashing nature and brutalizing it.[1] Cox feels this is a kind of revenge caused by a former prisoner against his captor. The Harvard theologian states, "The mature secular man neither reverences nor ravages nature. His task is to tend it and make use of it, to assume responsibility assigned to The Man, Adam."[2] As this study indicated in the introduction, Rachel Carson saw man writing a depressing record of destruction directed against the earth and the life that shares it with him.[3] Newsweek magazine mentions the compulsion to grow as being a critical factor in the current ecological crisis. America has nurtured the belief that growth is success. This land offered its colonist natural resources in wild profusion and great spaces in which to move around. Prodigality occurred. The society's system rewarded the man who could produce more, who found new ways to exploit nature.[4] The magazine article continues with this statement: "This worship of growth is one of the critical obstacles to the replenishment of the environment."[5] This thought finds agreement with Roderick Nash who evaluates the American attitude toward the wilderness. The biology professor believes Americans saw the wilderness as a "moral and physical wasteland" fit only for conquest and self-centeredness in the name of progress, civilization, and Christianity.[6] A vignette from

William Faulkner's "The Bear" forms a parable to young America and its relationship to its natural environment:

> Then the little locomotive shrieked and began to move: a rapid churning of exhaust, a lethargic deliberate clashing of slack couplings traveling backward along the train, the exhaust changing to the deep low clapping bites of power as the caboose, too, began to move and from the cupola he watched the train's head complete the first and only curve in the entire line's length and vanish into the wilderness, dragging its length of train behind it so that it resembled a small dingy harmless snake vanishing into weeds, drawing him with it too until soon it ran once more at its maximum clattering speed between the twin walls of unaxed wilderness as of old. It had been harmless once...It had been harmless then...But it was different now. It was the same train, engine cars and caboose...running with its same illusion of frantic rapidity between the same twin walls of impenetrable and impervious woods...yet this time it was as though the train...had brought with it into the doomed wilderness even before the actual axe the shadow and portent of the new mill not even finished yet and the rails and ties which were not even laid.[7]

Prenter gives a reminder of the theological dimension of man's harsh utility of his environment. Under the rule of the Creator man is a sinner. Man rebels against creation and seeks to destroy it. The real rebellion against the law of creation occurs within a man. The soil within is the source of the curse in man's world.[8] The Old Testament writers speak, in various contexts, of the spoilage of the land. Job cries out about the land crying against him and the furrows weeping. He says he has eaten its yield without payment. Now thorns are growing instead of wheat (Job 31:38-40). Biblical scholar Hugh Montefiore writes in Theology, "Man's lordship of nature has changed only in degree, and not in kind, since the days of Job."[9] Jeremiah talks of the plentiful land the Lord had given. However, it was defiled by man and the heritage of bounty became an abomination (Jeremiah 2:7). Prominent New Testament theologian, Rudolf Bultmann, talks about man's exploitation of nature in a sermon based on the classical creation text in Romans 8:18-27. Bultmann

mentions that nature does not exist for its own sake, because man's history is experienced in the middle of it. He notes, "Nature becomes involved in the fate of man, is violated and despoiled by man. Do we not see this today, sometimes with a feeling of horror?"[10] Bultmann raises the question about the mentality that ruthlessly exploits nature and "regards every forest from the point of view of the productive timber it contains...for the service of technics."[11] He sees the source of this ravaging attitude as sin. The German theologian feels man's violation of nature is most possible when human life is most removed from the sphere of nature. "The very longing of the city dweller to take refuge in nature from time to time is an indication that in his normal environment nature has been driven out, or trampled on and killed."[12] A specific crisis in man's prostitution of nature today is occurring in the use of pesticides. This problem will be amplified in the following section to represent one example of man's rape of the environment.

The Pesticidal Exploitation of Nature

Of the pesticides used in our environment, the one used most comprehensively is DDT. Because of its popularity, too, it is causing the most damage to man's ecology. DDT is the shorthand term for the chemical name dichloro-diphenyl-trichloro-ethane.[13] It was first synthesized by a German chemist in 1874. Its properties as an insecticide were not discovered until 1939 by a Swiss chemist, Paul Mueller. He subsequently won the Nobel Prize in 1948 after this insecticide proved of such great value in World War II.[14]

This chemical is usually dissolved in oil. In this form it is

highly toxic. Once it enters the body, it is stored largely in organs rich in fatty substances--especially the glands.[15] It is a very stable substance and, thus, does not break down easily.[16] This is part of its boon and part of its bane.

Because of DDT's solubility in fatty tissue and because of its stable nature, it builds up in vital organs and retains its toxicity.[17] Four years ago, a United States Public Health Service study showed that the average American has gathered twelve parts per million of DDT into his human fatty tissue. Nursing mothers now yield .08 parts per million of DDT in human milk given their infants.[18] Studies show that the average person is already storing potentially harmful amounts of this substance.[19]

From 1962-1967 the United States pesticide production jumped from 729 million pounds in 1962 to over one billion pounds in 1967.[20] A Department of Agriculture Economic Report in 1968 indicated that thirty-seven percent of the farmers growing crops were using herbicides and twenty-nine percent were using insecticides. The use of insect and disease control chemicals is also increasing on some crops.[21] The majority of the substances used are either DDT or derivatives of DDT.

H. D. LeGrand, a geologist for the United States Geological Survey, described the sequence through which a pesticide moves as it spreads through the environment. He notes the five steps:

> 1. Soil surface. 2. Zone of aeration or the zone between the soil surface and the water table. 3. The zone of saturation, or the zone of groundwater movement. 4. Stream course. 5. The sea.[22]

Scientist G. M. Woodwell, writing in the Scientific American, mentions how DDT also spreads in the higher atmosphere and travels great distances. The fallout of the pesticide is proportionate to the rainfall.[23] A study

by a Michigan conservation group shows that up to half of all DDT spread by airplanes does not settle, but it escapes into the atmosphere. These particles may be carried around the earth in as little as two weeks. They eventually are deposited through rainfall.[24] As DDT spreads, it builds up in content with each consumer. Woodwell describes the chain. Typically, DDT absorbs in an ocean plant. This plant is eaten by a herbivorous fish. This creature is consumed by a carnivorous fish. A carnivorous bird, in turn, preys on the fish. At this last stage, the DDT content has substantially built up in its content.[25] The same process occurs in food chains. The end product is consumed by man. In the diet of the average home, meats and any products derived from animal fats contain the heaviest residues of these chlorinated hydrocarbons.[26]

At this point, the question arises: what are some of the harmful effects of DDT on man and his environment? Of the numerous tests and experiments that have been done, several study reports will be cited in this paper. J. J. Hickey and D. W. Anderson, scientists for an eastern university, revealed that raptorial bird populations have suffered severe population crashes in the United States and Western Europe during the past years. Reproduction failures have been due, largely, to calcium metabolism irregularities. This causes a thin eggshell that breaks easily or is broken by a parent. As a result, the peregrine falcon is nearing extinction in Northwest Europe. It is already absent from the eastern half of the United States. Bald eagles and ospreys are in danger. Golden eagles, red-tailed hawks, and great horned owls are also declining.[27] The Hickey-Anderson study reports:

> In the eggshell testing over a long period of time, the phenomenon of thinner shells began occurring from those tested one year after the chlorinated hydrocarbons came into general use.[28]

Environment magazine reports, in an article by Harmon Henkin, that coho salmon in Lake Michigan were discovered to have DDT deposits of nineteen parts per million. The federal law allows a maximum of five parts per million. The fish was taken off the market.[29] Biologist Kevin Shea reports that the San Francisco crab production has been affected by DDT. A decade ago the annual harvest was nine million pounds, but it has now declined to one million pounds annually. Again, DDT was found to be injurious to the reproductive system of crabs.[30] A great ecological disturbance has been caused in some Pacific island areas. The once rare Crown of Thorns starfish is eating its way through a great amount of living coral that surround and protect the islands. The main predator of the Crown of Thorns, the triton, is not as numerous as it once was. The triton population decreased at approximately the same time as the advent of DDT.[31] Other experiments with DDT show that the size of combs and testes on roosters reduced three to five times when fractional portions of DDT were mixed with the feed.[32] A potentially grave danger of pesticidal usage occurs with the photosynthesis process of the large seaweed phytoplankton. A New York University scientist used specimens of this plant from four different areas of the world's ocean. After the experiment with DDT, the photosynthesis process diminished from sixty to eighty percent.[33]

These experiments have raised critical questions concerning human consumption of DDT. Though science has produced fewer data dealing with the human intake of DDT than that of other organisms, many studies are

rapidly surfacing. University of Wisconsin scientist, James F. Crow, says, "there is reason to fear that some chemicals (including pesticides) may constitute as important a (mutagenic) risk as radiation, possibly a more serious one."[34] Dr. Osny G. Fahmy of the Chester Beatty Research Institute in London says, "the amount of pesticide chemicals man is now absorbing from his environment is enough to double the normal mutation rate." He mentions that they are capable of disrupting the DNA molecule, the effects are cumulative, and the mutations may not show up for generations.[35] Shea asserts that DDT interferes with secretion of hormones from the pituitary gland. Since the secretion is controlled by the brain, it is quite possible that the nervous system is actually the site at which all the trouble begins. DDT attacks the central nervous system by becoming bound to nerves and preventing their proper functioning.[36] Carson notes the sharp rise in hepatitis and leukemia since the comprehensive use of DDT and other chlorinated hydrocarbons.[37]

The ecological crisis has been created by a wide spectrum of causes. The use of pesticides is merely one of the many determinants. In light of man's historical view toward the environment and in awareness of the natural pillage that has occurred, what is man's responsibility to the problem? It is to this question that the final section of this study is devoted.

Man's Responsibility

According to Genesis 1, Rust contends, man was given dominion over all created beings. As "viceregent" in the earthly domain, man must subdue the earth and make the living creatures serve Him. An evidence

of this is man's choosing of the creatures' nomenclature. Implicit in man's dominion is responsibility. Stripping the trees was likened to circumcision. The trees were respected. Leaving the corners of the field unharvested was perhaps done with the same motive (Leviticus 19:9,10).[38] English theologian, C. F. D. Moule, in his book Man and Nature in the New Testament, reminds that man has dominion only for God's sake. Man should be like Adam in the garden, cultivating it for the Lord. Moule adds, "As soon as he begins to use it selfishly and reaches out to take the fruit which is forbidden by the Lord, instantly the ecological balance is upset and nature begins to groan.[39] Sittler describes man's role as steward when he says:

> Man and nature live out their distinct but related lives in a complex that recalls the divine intentions as that intention is symbolically related on the first page of the Bible. Man is placed, you will recall, in the garden of earth. This garden he is to tend as God's other creation--not to use as a godless warehouse or to rape as a tyrant.[40]

Elert, too, affirms that man is "the responsible center of creation."[41] Cox adds a dimension to man's role when he suggests that neither man nor God is defined by his relationship to nature. "This makes nature itself available for man's use."[42] The World Council of Churches evaluates modern man's responsibility as great and complex in his contemporary response to the environment. At Uppsala, Sweden in 1968, the Council said:

> As man begins to cope with the new control over his environment, which technology brings, he needs to understand the changes in attitudes toward nature, work, leisure, human relations and community, and the social, legal and institutional patterns which are required if he is to live creatively.[43]

Man has confronted serious problems in his efforts to be a responsible participant in God's creation. His efforts to be an intelligent steward

have gone seriously awry. Elder elucidates this:

> Man has pushed up to limits inherent in the given system. He has been able to claim ever-increasing control because the limit was not yet in sight. This ability has deceived him into believing that there is no limit to his control or at least no countervailing force against his activity. But as the ecological indexes show, the limitations are there.[44]

Rachel Carson feels this problem is quite recent in its development. She recognizes this century as the first span in history in which man has had the power to alter the nature of the world. And she is convinced he is doing exactly that.[45] Newsweek touches a familiar pulse in the man/nature relationship when it states, "Man was the lord and nature was his subject; all too often life seemed a struggle of man against nature, not a joint venture."[46]

When man sees the predicament he has erected, a dangerous option is the path of hopelessness. Carson asks whether we have fallen into a "mesmerized state" that causes us to accept as inevitable that which is inferior or detrimental. She considers it hazardous when men lose their will and vision to demand things to be better.[47] Werner Elert gives man the theological sense of hope in the midst of his dilemma with nature. The ethicist asserts:

> If a Christian can no longer feel joy in God's creation because he, too, has lost hope, the visible beauty, along with the joy, will disappear forever. Christians are the only people who can still rejoice in this earthly life because they are the only people who can still hope.[48]

Francois Houtart believes hopelessness is not the issue. He sees God calling man to associate himself with His creative work. Each new generation makes its unique contribution. He moves in the thought world of Teilhard in considering today's "mutation of mankind" as a living step

of creation itself. The world's entire development possesses a profoundly religious meaning.[49] Barry Commoner, as mentioned previously, believes man's role is to live in nature rather than vainly trying to make conquest of it.[50] Regin Prenter, too, does not see the creative process ceasing. No man has final knowledge concerning God's creation activity. Prenter highlights the fact that man does not and cannot have a spectator role. He is, rather, a co-worker in creation.[51]

Part of the partnership process in creation is knowing and loving all being. Joseph Gremillion's Vatican II statement also mentions that part of this "knowing and loving" is to search the interrelations of creatures with each other and with man himself.[52] Rezneat M. Darnell, in an editorial on ecology in Bioscience, sees man working in creation to protect nature out of respect for mankind. He says, "The future of mankind on this planet depends upon his maintaining a balanced harmony with nature."[53] Respecting one's environment, Darnell mentions, is loving what the neighbor mutually shares.[54] As cited in the introduction to this study, Schweitzer says that life is sacred. In the context of man's environment, we should not differentiate the worth of life in plants, animals, and man.[55] Emil Brunner, in The Divine Imperative, elucidates the design of God as He works through nature's laws to govern His creation. Brunner writes:

> If we are to serve our neighbor "in life"--how can we do this without paying attention to the biological laws which govern life, without listening to what they have to tell us about the preservation and destruction of life? The Will of the Creator approaches us through them; and if we are to serve our neighbor as a fellow-creature--how can we do this unless we know what is due to man as man? Natural biology and anthropology have their definite place within a Christian ethic.[56]

The challenge to help alleviate the crisis that is developing in the

environment is, of necessity, a world-community problem. It will not be remedied by the insular action of specific countries. Newsweek mentions briefly, "Every nation, large and small, is confronted with environmental hazards. The Rhine River may be even more polluted than the Ohio."[57] Pollution has no boundaries. Elder explains that "man is both apart from and part of the environment."[58] Man is able to express his uniqueness in a variety of ways--music, art, poetry, philosophy, literature, worship of God, even other types of invention within limits. But, Elder warns, "man cannot pose as unique in the area of the biological, for he is of the earth, earthly."[59] This ecologist-theologian believes the churches can be a strong part of environmental renewal. The churches maintain the view that man is made in the image of God. Thus, they assert the biblical position that man is made of dust. He, too, is earthly. While the churches proclaim Jesus as the Savior of the world, they can also undergird the fact that Jesus spoke of lilies in the field and sparrows falling to the ground. Elder underlines the fact that man has to enter "a new era of human restraint."[60] The Presbyterian pastor gives a loud call to man and his necessity to weigh the issue of the environment as a life and death matter. One of the concluding paragraphs of his book, Crisis in Eden, reads as follows:

> The human race probably has no more than a generation left in which to decide whether it will live in a diversified, balanced world or one either biologically devastated or imperialistically controlled in order to avoid biological devastation. This means that environmental theology and its concomitant, environmental ethics, must emerge. It means that now is the time for the proclamation of the new asceticism through which man at last becomes biologically sophisticated and materially reverent. The time is now; a failure to proceed properly insures a future that is bleak.[61]

The chronological urgency of the nature crisis gives a grave test to the responsibility of man. As cited, God gave His creation to man for his responsible dominion and enjoyment. Perhaps man's most critical challenge to balance mastery with reverent wisdom has now begun.

FOOTNOTES TO
CHAPTER 4

[1]Cox, p. 22.

[2]Ibid.

[3]Carson, p. 83.

[4]"The Ravaged Environment," p. 32.

[5]Ibid.

[6]Nash, p. vii.

[7]William Faulkner, Go Down, Moses and Other Stories, (New York: Random House, 1942), p. 143.

[8]Prenter, p. 205.

[9]Hugh Montefiore, "Man's Dominion," Theology, LXVIII (January, 1965), 44.

[10]Rudolf Bultmann, This World and the Beyond, (New York: Charles Scribner's Sons, 1956), p. 72.

[11]Ibid.

[12]Ibid.

[13]Carson, pp. 28-29.

[14]Staff Report, "Diminishing Returns," Environment, XI (September, 1969), 3.

[15]Carson, p. 29.

[16]Robert Metcalf, "Metabolism and Fate of Pesticides in Plants and Animals," Scientific Aspects of Pest Control, edited by National Academy of Sciences, (Washington: National Research Council, 1966), p. 243.

[17]Ibid.

[18]Michigan Conservation, The Case Against Hard Pesticides, (Washington: United States Government Printing Office, 1968), p. 1.

[19]Carson, p. 30.

[20]United States Department of Agriculture, Extent of Farm Pesticide Use on Crops in 1966, (Washington: United States Government Printing Office, 1966), p. v.

[21]Staff Report, p. 3.

[22]H. E. LeGrand, "Movement of the Pesticides in the Soil," Pesticides and Their Effects on Soils and Water, edited by United States Geological Survey, (Madison, Wisconsin: Soil Science Society of America, 1966), p. 73.

[23]G. M. Woodwell, "Toxic Substances and Ecological Cycles," Scientific American, CCXVI (March, 1967), 43.

[24]Michigan Conservation, p. 2.

[25]Woodwell, p. 43.

[26]Carson, p. 162.

[27]J. J. Hickey and D. W. Anderson, "Chlorinated Hydrocarbons with Eggshell Changes in Raptorial and Fish-Eating Birds," Science, CLXII (October, 1968), 271-273.

[28]Ibid.

[29]Harmon Henkin, "Problems in PPM," Environment, XI (May, 1969), 25.

[30]Kevin Shea, "Unwanted Harvest," Environment, XI (September, 1969), 13.

[31]Harmon Henkin, "Spectrum," Environment, XI (June, 1969), S-4.

[32]Shea, p. 12.

[33]C. F. Wurster, Jr., "DDT Reduces Photosynthesis in Marine Phytoplankton," Science, CLIX (July, 1968), 1474-1475.

[34]The Conservation Foundation, Pollution by Pesticides, (Washington: United States Government Printing Office, 1969), p. 8.

[35]Ibid.

[36]Shea, p. 11.

[37]Carson, pp. 172-173, 202.

[38]Rust, pp. 52, 99.

[39]C. F. D. Moule, Man and Nature in the New Testament, (Philadelphia: Fortress Press, 1967), p. 14.

[40]Sittler, p. 372.

[41]Elert, p. 320.

[42]Cox, p. 23.

[43]World Council of Churches, Uppsala 68 Speaks, edited by Norman Goodall (Geneva: World Council of Churches, 1968), p. 51.

[44]Elder, p. 130.

[45]Carson, p. 16.

[46]"The Ravaged Environment," p. 32.

[47]Carson, p. 22.

[48]Elert, p. 320.

[49]Houtart, p. 550.

[50]Commoner.

[51]Prenter, p. 200.

[52]Gremillion, p. 532.

[53]Rezneat Darnell, "Morality and the Ecological Crisis," Bioscience, CXX (October, 1967), 47.

[54]Ibid.

[55]Schweitzer, p. 159.

[56]Brunner, p. 209.

[57]"The Ravaged Environment," p. 31.

[58]Elder, p. 135.

[59]Ibid. p. 158.

[60]Ibid.

[61]Ibid. p. 162.

SUMMARY

The world has reached a critical stage in the ecological dilemma. This study investigates a subject that carries the freight of current life-or-death options. The Christian Church has too long looked at nature only from a side glance. We have briefly discussed the rich Hebrew theology that reveals nature as a necessary companion in the life of an individual and a community. Nature was a co-recipient in God's covenantal action. The New Testament Church was rapidly infested with Hellenistic Gnosticism that helped to foster a deadly dualism which saw spirit as sacred and material as evil. It was not until the latter Middle Ages and later with Luther and the Renaissance that nature was again given some of its due recognition. Vestiges of this dualism persist today as evidenced in man's assumed role of being the explorer and eventual conqueror of nature.

The blatant abuse of nature and its resources have been some of the harvest of this anthropocentric approach to nature. The specter of man's selfishness manifests its ominous head once more. Thus, the environmental crisis is very intimately entwined in the nature of man. This situation presents a challenge for man that has massive proportions. Individual altruism, with all of its valorous intent, will quickly submerge with a feeble cry unless unified corporate action occurs.

With the knowledge that God created and redeemed nature, the ecology question becomes a giant theological issue. The Christian man has to assume much more of the Hebrew roots of his faith and participate in nature rather than do battle against it. Into this world God Himself

arrived, and He took on its natural paraments. Our world is not merely a meaningless ball traversing space, but it is the crucible into which the God of the cosmos came and portrayed divine, eternal action. The earth is important. Many aeons ago man was given the job of caretaker and not the role of rapist.

Great questions arise for the Christian in the middle of this global predicament. How does the Church methodologically go about sensitizing huge segments of mankind to tend the world responsibly? Is the earth still important or do we turn our eyes in a new direction? What really is meant by a restoration of the creation? Does the earth have to die before it can live? These are some of the many questions that warrant a hearing.

We cannot afford to give blind, substanceless shouts to a panic-stricken world. We are privileged as Christ-men to investigate carefully the seminal fibers of our faith and world view and offer insight and avenue to the brother who, with us, is searching for patterns that can abet seeming catastrophe.

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