TWENTIETH CENTURY AMERICAN NATURE WRITING: A STUDY IN THEMES AND TECHNIQUES

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PREFACE

The following pages represent the culmination of almost a decade's work and interest in nature writing. For the better part of that decade, I found it difficult to stimulate similar interest in others and at times found myself defending my interest in it as a valuable pastime. However, I was determined to write a dissertation on the subject, not guessing that by the time it was written, there would arise wide-spread interest in and evaluation of man's relation to nature in the technological age. My only regret is that I could not deal with more works by the writers whose essays make up the core of this study and with other of the excellent writers who have produced nature essays in this century. However, the scope of this study would not permit such treatment.

This dissertation represents a study of the basic themes and techniques of five writers. However, I have attempted, when possible, to show that those themes and techniques are not peculiar to just those writers by referring the reader to the works of other fine writers. I hope that the reader finds more here than just the achievement of the purposes set out in Chapter I; I hope that he also finds something in these pages that will encourage him to read further among the works of the American nature writers--writers of excellent essays which, unfortunately, modern readers so often ignore.

My special appreciation and thanks go to Dr. Harry M. Campbell, chairman of my committee; not only his careful criticism but also his interest in and enthusiasm for the subject matter of this study have

made the production of this dissertation much easier than it otherwise would have been. I also wish to thank the members of my committee, Dr. Clinton Keeler and Dr. Theodore Agnew, for their encouragement, interest, and careful criticism. Finally, I wish to thank Dr. Loren C. Eiseley of the University of Pennsylvania, and Mr. Sigurd F. Olson of Ely, Minnesota, for their helpful suggestions in the preparation of this study.

For his less direct help in making the study, I thank Professor John R. Lawrence of California State College, California, Pennsylvania. Professor of English, long-time friend, and inexhaustible source of information, Professor Lawrence has for many years encouraged and, through helpful suggestions, directed my study of nature writing. It was he who first introduced me to the genre, and his continued assistance, though not as direct as some other, has been invaluable in this study.

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CHAPTER I

NATURE WRITING: THEORY, DEFINITIONS, AND HISTORY

Joseph Wood Krutch has said that nature writing flourishes today as "a separate department of literature even though it does remain to some extent a thing apart, addressed chiefly to a group of readers called 'nature lovers,'" to whom outsiders often refer "in the same condescending tone they would use in speaking of prohibitionists, diet cranks, Holy Rollers, or the followers--if there still are any--of the late Mr. Coué." Its very importance as a department of literature derives, he says, from the fact that most writers of novels, poems, and plays "no longer find the contemplation of nature relevant to their purposes--at least to the same extent they once did."[1] Van Wyck Brooks holds this same attitude. He says,

> I have long believed that the best writers are now the writers of natural history who are ignored commonly in critical circles because they are concerned with permanent things outside the changing human world that interests the novelists and most of the poets. From the point of view of the critics they are off-centre, as they were not in the rural past when farmers, ministers and statesmen knew their forest world and wrote about it.[2]

He adds that "intellectual city-dwellers determine the climate of literature now," and they can hardly consider beautiful any writing which "deals with the facts and shows of nature." It is interesting to note that both of these scholars attribute part of the ignorance of nature

writing to the peculiar condition of modern literature. That fact is no doubt true. However, it seems that a more basic cause of the ignorance may lie in the lack of definition of the term nature writing.

In its broadest sense, the term describes a great body of works which, in America, includes the early promotional tracts of people such as Thomas Hariot, John Smith, and William Wood; the writings of Crèvecoeur and Jefferson; the journals and writings of explorers and naturalists such as Lewis and Clark, John J. Audubon, Alexander Wilson, and Asa Gray; and finally the literary works of the naturalists such as Thoreau, Burroughs, Muir, and their twentieth century successors. Many of the works of these writers have in common the fact that they treat, in varying degrees and manners, the natural history of America; in this broad respect, these works qualify as nature writing.

However, in twentieth century scholarship the phrase "nature writing" has taken on a more restricted meaning, in which the degree and manner of treating our natural history weigh heavily. The term now generally excludes the promotional tracts, travel literature, the works of Crèvecoeur and Jefferson, and certain works by Thoreau because they are not primarily concerned with the treatment of natural history; it remains secondary or sometimes even incidental to the writer's purpose. Nature writing now excludes as well the writings of many naturalists although they are primarily concerned with the treatment of natural history; however, their works are, for the most part, scientific recordings of natural facts. Hence, nature writing cannot be defined solely on the primacy of natural history as a subject matter.

The final definition, then, must turn on the manner of treating that subject matter.

Most literature which the term nature writing includes today belongs to the genre of the informal essay.[3] The informal quality of nature writing is highly significant, for that is one of the bases by which one can make distinctions between the more formal scientific or technical tract and the nature essay. It is also on the basis of the essay form that scholars give credit for the establishment of the literary form of nature writing to Thoreau and credit for its popularity to Burroughs and Muir. Philip Marshal Hicks says that Thoreau was the first American writer

> to put natural history observations into the form of separate essays which were written with purely literary considerations in view, and because he was associated with a movement that was destined to exercise an extraordinarily stimulating effect upon American letters in general, and upon interest in nature in particular. He represents the first instance of the poetic temperament writing on nature themes, with a background of scientific knowledge, and with a scholar's appreciation of literary values.[4]

Norman Foerster, however, is not willing to credit Thoreau with founding the genre. He says that after the death of Thoreau, John Muir and John Burroughs were the most outstanding American prose writers on nature and that they "established a virtually new type of literature, the nature essay."[5] Perhaps his hesitancy results from the fact that Thoreau produced relatively few works which were written specifically as essays and which exhibit balance of scientific observations and aesthetic appreciation for nature. In fact, the latter quality usually outweighs the former in his works. Although Hicks readily admits that fact, he feels that the volume of such works by Thoreau is sufficient to give him the honor.[6] It may be, too, that Foerster means by

"established" that Muir and Burroughs completed a process which Thoreau had begun. At any rate, both Hicks and Foerster seem to agree that these two men stand as important links between the nature writers of Thoreau's generation and those of the twentieth century.

There still remains the problem of analyzing those "literary considerations" which Thoreau and his successors had in view as they wrote their nature essays. Thoreau put down no literary theory concerning the genre; that was left for Burroughs to do. Hicks reviews Burroughs's theory which has been adhered to and changed but little by the later nature writers. Since the immediate purpose here is to arrive at an adequate definition of nature writing and the ultimate purpose is to assess the literary merit of certain twentieth century nature writings, it is necessary to review Burroughs's theory again even at the risk of duplicating some of Hicks's work. Burroughs summarized his theory in a 1904 article in The Atlantic Monthly, later slightly altered for the edition of his collected works; the following will be mainly a review of that essay, "The Literary Treatment of Nature."

Burroughs begins by making a distinction between the literary treatment of natural history themes and the scientific treatment. "The former," he says, "compared with the latter, is like free-hand drawing compared with mechanical drawing." Though as much in love with natural fact as his scientific brother, the literary artist

> makes a different use of the fact, and his interest in it is often of a non-scientific character. His method is synthetic rather than analytic. He deals in general, and not in technical truths,--truths that the arrives at in the fields and woods, and not in the laboratory.[7]

The one is suggestive and subjective, while the other is exact and strictly objective. "Literature aims to invest its subject with a human

interest, and to this end stirs our sympathies and emotions. Pure science aims to convince the reason and the understanding alone."[8] Burroughs had made this same point in an earlier essay, "Science and Literature." "Until science is mixed with emotion," he says, "and appeals to the heart and imagination, it is like dead inorganic matter; and when it becomes so mixed and so transformed, it is literature."[9] Later, he says that the literary treatment of nature is "the view of it as seen through our sympathies and emotions, and touched by the ideal, such as the poet gives us. . . ."[10]

Secondly, Burroughs writes of the humanization of animals. He says that it is legitimate for the writer of animal stories, for instance, to put himself inside the animal he portrays and to view life from that vantage point, "but he must always be true to the facts of the case, and to the limited intelligence for which he speaks." Burroughs calls for limitations in

> the humanization of the animals and of the facts of natural history, which is supposed to be the province of literature in this field. . . . Your facts are sufficiently humanized the moment they become interesting, and they become interesting the moment you relate them in any way to our lives, or make them suggestive of what we know to be true in other fields of our own experience.[11]

Burroughs pursues this idea in a later essay "Literature and Science." He says that we go beyond the sphere of science to the sphere of literature when we humanize things.

> Literature. . . humanizes everything it looks upon; its products are the fruit of the human personality playing upon the things of life and nature, making everything redolent of human qualities, and speaking to the heart and to the imagination.[12]

Third, Burroughs discusses the literary naturalist as an interpreter of natural science. If by interpretation we mean the answer to

the question "What does this mean?" then, says Burroughs, the interpretation of nature is scientific. But if we mean the answer to the questions "What does this scene or incident suggest to you? how do you feel about it?" then it is a "literary or poetic interpretation of nature, which, strictly speaking, is no interpretation of nature at all, but an interpretation of the writer or poet himself."[13]

Closely related to this idea is Burroughs's fourth point--that we would not care much for natural history or for the study of nature, "if we did not in some way find ourselves there,--that is, something that is akin to our own feelings, methods, and intelligence."[14] It is this close relationship with nature that the nature writer reveals and that interests the reader. In "Science and Literature" Burroughs had written that our interest in natural phenomena is

> an interest born of our relations to these things, of our associations with them. It is the human sentiments they awaken and foster in us, the emotion of love or admiration, or awe or fear, they call up; and is in fact the interest of literature as distinguished from that of science.[15]

Burroughs closes with the idea that the problem of the nature writer is always to make his subject interesting and to remain strictly within the bounds of truth. However, the artist has the privilege of heightening or deepening natural effects. He can transmute facts, but he cannot falsify them.

> The aim of art is the beautiful, not <u>over</u> but <u>through</u> the true. The aim of the literary naturalist is the true, not over but through the beautiful; you shall find exact facts in his pages, and you shall find them possessed of some of the allurement and suggestiveness that they had in the fields and woods. Only thus does his work attain to the rank of literature.[16]

From this review of Burroughs's theory, one should be able to reach at least a tentative definition of <u>nature writing</u> or, more

specifically, the nature essay. As far as it goes, Hicks's definition is adequate; he defines the natural history essay as one

> that is based upon, and has for its major interest the literary expression of scientifically accurate observations of the life history of the lower orders of nature, or of other natural objects. This distinction eliminates from consideration the essay inspired merely by an aesthetic or sentimental delight in nature in general; the narrative of travel, where observation is only incidental; and the sketch which is concerned solely with description of scenery.[17]

It should be added that the idea of "literary expression" must include the concept of making the subject matter interesting by relating it in some way to human life, thereby humanizing it and making it speak to the heart and imagination. The term must also include the concept of style of the nature essay, about which, specifically, Burroughs has said nothing. Theory concerning style was left to later nature writers. Therefore, before one can state a final definition of the nature essay, he should review the literary theory of Burroughs's successors, not only to analyze their statements on style in the nature essay but also to find wherein they have adhered to or departed from the tentative definition above. The theorists are presented in the chronological order of their flourishing as nature writers.

One of the earliest and most noted theorists of nature writing in the twentieth century was Theodore Roosevelt (1858-1919), a friend of many naturalist writers, including Burroughs. A nature writer of some note himself, he was always a devotee of natural history. In 1913, at age fifty-five and after retirement to private life, he undertook a difficult and dangerous expedition to explore some of the little-known parts of Brazil. The writings of Roosevelt concerning that expedition received high praise from the great scientist and naturalist, Frank M. Chapman. In his introduction to volume five of the National Edition of

Roosevelt's works, Chapman notes that the American Geographical Society recognized Roosevelt's authority by awarding him the David Livingstone Centenary gold medal.[18]

A decade earlier, Roosevelt had taken time from the demands of public life to express himself concerning nature writing and in fact had become embroiled in one of the greatest verbal battles ever fought concerning the genre. John Burroughs had opened the first round of the controversy in March, 1903, with an article called "Real and Sham Natural History" in The Atlantic Monthly. There he attacked nature writers, particularly Ernest Thompson Seton for his Wild Animals I Have Known and William J. Long for his The School of the Woods, who Burroughs claimed had passed off fiction as natural fact. Roosevelt wrote immediately to Burroughs, praising him for taking a stand; however, he did not completely endorse Burroughs's almost blind defense of nature. He felt that Burroughs did not "allow sufficiently for the extraordinary change made in the habits of the wild animals by experience with man, especially experience continued through generations." Burroughs had highly praised some of the nature stories of Charles Dudley Warner, evidently because he thought they had taken a stand against the hunting of deer. But Roosevelt pointed out to Burroughs that he had overpraised Warner's work, which was in reality against the hunting of does when the fawns are young. A hunter himself, Roosevelt defended hunting by stating that nature is so organized that

> to remove all checks to the multiplication of a species merely means that that very multiplication itself in a few years operates as a most disastrous check by producing an epidemic of disease or starvation.[19]

The reader will note in Roosevelt a more modern attitude toward nature than that often found in Burroughs. Certainly his letter to Burroughs

anticipates a problem with which the nature writers and modern men generally have been concerned--the influence of man on the natural world and the ecological unbalance he has perpetrated through that influence. It must be added, however, that Burroughs realized that he had perhaps been a little rash and somewhat hypercritical and wished, even before the article came out, that he had been less severe in his attack on Seton and Long.[20] And the following year, Burroughs went so far as to retract, in effect, what he had said about Seton.[21]

At first, Roosevelt avoided any public controversy concerning nature writing. He wrote to George Bird Grinnell that a President could not "go into a public altercation," even though he wished, privately, to defend Burroughs against an anonymous attack printed in Forest and Stream in April of 1903.[22] As indicated above, while agreeing with Burroughs in his attitude toward nature writing, Roosevelt disagreed with him on some specific points. Those points became increasingly important in the literary theory of nature writing as the century progressed. Roosevelt tried to help Burroughs shield himself against attack by firmly suggesting that Burroughs reevaluate the stand he had taken. He wrote to Burroughs in July of 1903, for instance, that he should not state a "universal negative" about animals teaching their offspring. Not only is it certain that there is some unconscious teaching, but there seems to be, on certain occasions, "a conscious effort at teaching." Roosevelt warned Burroughs to avoid too sweeping generalizations.[23]

As time passed, Roosevelt's private statements became more numerous, especially concerning the works of William J. Long, for which he developed a great dislike because of their lack of scientific

veracity. He finally could no longer contain himself and, in an interview with Edward B. Clark, lashed out at Long, his followers, and Jack London. He called for strict truthfulness in nature writing and for the branding of fiction as either fiction or fable. He concluded, "The men who misinterpret nature and replace facts with fiction, undo the work of those who in the love of nature interpret it aright."[24] The result of the interview was a heated controversy in which nature writers on both sides of the issue defended and attacked friends and enemies in the pages of the popular magazines. Roosevelt regretted his having taken a side in the issue and decided to make one final statement in "Nature-Fakers," which appeared jointly with Edward B. Clark's "Real Naturalists on Nature Faking" in September, 1907. Clark's article is an attack on Long and his school, and it includes a series of statements from such naturalists as William T. Hornaday, J. A. Allen, Edward W. Nelson, C. Hart Meriam, Frederick A. Lucas, Barton W. Evermann, and George Shiras.[25] In his article, Roosevelt expressed the need for study and observation of the wild creatures. Such study should be undertaken by observers who are capable of seeing, understanding, and recording what goes on in the wilderness; they should not have dull minds or limited powers of observation. To him, "the highest type" of natural history student "should be able to see keenly and write interestingly and should have an imagination that will enable him to interpret the facts." He states further that the man who sees keenly but falsely, who writes interestingly but untruthfully, and whose imagination invents facts rather than interprets them is not a student of nature.[26]

Petty as the nature-faker controversy may have been at times, it

evidently made Roosevelt arrive at some conclusions regarding the place of nature writing in literature. In 1903 he wrote to Clinton Hart Merriam, warning him about expending all his efforts in writing short, scientific pamphlets; in the process of warning him, Roosevelt defined the nature writer. Such a writer, says Roosevelt, is one who, with "great natural power and enormous industry," collects the natural facts and is able "to do the work of generalization and condensation--that is, to build a structure out of the heap of bricks"; in other words, he is able to put his discoveries in "durable, in abiding, form."[27] Then in 1906, in a letter of encouragement of Henry Bryant Bigelow,[28] Roosevelt, struck by the literary quality of one of Bigelow's nature essays, stated that

> if we can only bring forth in this country one man who, in addition to the power of accurate observation and of painstaking research, possesses also the power of vivid description, we shall have made a great permanent contribution alike to science and to letters.[29]

He adds that the "real combination" to be hoped for in nature writing is that it "contain the facts from the industrious and truthful small scientist and yet be really literary."[30] And at the height of the controversy, he wrote to the editors of the Outlook:

> I believe that one permanent branch of literature is and ought to be that dealing with outdoor observations on beasts and birds, great and small, on the farm and in the wilderness. I feel that White of Selborne, Thoreau, John Burroughs, not to speak of other men like John Muir, have a real place in literature, just as much as those who write of anthropology and archaeology, just as much as those who write history.[31]

The foregoing discussion of Theodore Roosevelt is purposefully extensive, for Roosevelt's theory and the controversies in which he became involved reveal that at least one segment of American society was aware that a new literary genre had emerged. Whether or not

they realized it, the writers involved in those controversies were doing their part to delimit that genre and establish lines along which it would develop. On the one hand, they put by the boards forever that "fabulous" or "unnatural" natural history in which man seemed always prone to believe. William J. Long's super-wolf that can bite through the chest of a caribou and pierce its heart with his fangs smacks of the same kind of imagination that could create unicorns or sea serpents or, in a more recent observer such as William Bartram, alligators twenty-two feet long. Such fictions are the products of an over-reaction to nature, sometimes from ignorance, sometimes from fear resulting from ignorance, and sometimes (as in Bartram's case) from the awe-someness of nature, confronted in an undisturbed and undefiled state.

On the other hand, Roosevelt and the others involved in the nature-faking controversy revealed in their writing that nature writing was emerging from one stage of its development and moving into another; generally, changes in the genre reflect changes in attitudes toward science to which the genre is so closely tied. It is perhaps significant that the controversy took place in the first decade of the new century. It was a decade that saw the publication of conflicting world views as men, in the face of rapidly expanding scientific knowledge, were forced to reevaluate their positions in relation to the natural world and to the whole of the universe. Henry Adams saw something ominous in the arrival of the new century. His The Education of Henry Adams (1907) is the story of one man's inability to cope with expanding scientific knowledge. Science taught him so much, in fact, that he found nothing stable on which he could count, not even science itself. He found that man had been losing, at an increasingly accelerated pace,

the sense of cosmic unity which had been felt in the Middle Ages when faith in the power of the Virgin prevailed. Instead of that unity of the Middle Ages, which Adams had described in Mont-Saint-Michel and Chartres (1904), modern man exists in a state of dread and finally (for example, in atheistic existentialism) has accepted the absurdity of twentieth century multiplicity and chaos.

Unlike Adams, Ernst Haeckel began the century with the publication in 1900 of his The Riddle of the Universe. Believing only in empirical reality which science revealed to him, Haeckel developed his monistic philosophy. To him, all of man's faculties were the result of evolution; emotion had nothing to do with truth but was purely physical and biological. Even what man knows as will was fatally determined by the condition of the organism. Hence, there was no such thing as traditional morality; belief in the immortality of the soul was a superstition of dualism perpetuated by the poets. Believing only in his law of substance, Haeckel predicted that in the twentieth century science would solve the riddle of the universe. The general monistic view of Haeckel and others was echoed during the decade in the deterministic philosophies of novelists who wrote in the manner of American naturalism. In 1900, Theodore Dreiser showed "chemic compulsions" as deterministic forces at work on the characters in Sister Carrie. Frank Norris, who had developed his theme of submerged animality in McTeague in 1899, put forth his determinism in The Octopus (1901) by revealing symbolically the kinship of man's activities to natural growth and evolutionary cycles.

Yet there were others who did not despair in the face of the spiritual agony resulting from the development of science and of the

monistic philosophies. In 1907 Henri Bergson published his Creative Evolution, stressing his theory of the élan vital, which gave a place in man's existence for free will and a belief in an evolving God, and offered man a means of escaping the rigors and pessimism of scientific materialism. Indeed, Bergson's philosophy seems to have been a boon to the most outstanding nature writer of the decade, John Burroughs.

In Chapter IX of Nature in American Literature, Professor Foerster traces the development of Burroughs as a writer. First was his poetic period, during which he fell under the influence of the Transcendentalists Emerson and Whitman, Burroughs's dear friend. This was followed by a period of intense observation during which he emerged as a scientific naturalist. From there, he passed into a period of scientific study and speculation, during which he was completely won by "the scientific temper of the age" and in Pepacton concluded that the only real interpretation of nature was a scientific one. In The light of Day he replaced orthodox religion with science, which was a surer way to God. Science was a way to truth; and he said, "Whoever finds truth finds God. . . ." Then in 1911 Burroughs became a disciple of Bergson, who for him reconciled literature, science, and philosophy.

Although this brief summary of Burroughs's philosophical development is much simplified, it can serve to point out some of the problems of world view which the naturalists had to solve, and it indicates the general direction which twentieth century nature writing was to take. Most significant, of course, is Burroughs's total acceptance and then rejection of a faith in science, that is, the acceptance of a philosophy of materialistic monism and the rejection of it in favor of a

philosophy which admitted spiritual as well as material reality. In that rejection, Burroughs had moved into a new attitude toward nature, one which is continuing in nature writing today. Whereas Burroughs and his predecessor, Thoreau, were literary men who fell more and more under the influence of the growing emphasis on science of their days, so the twnetieth century nature writers are for the most part scientists who have become literary figures. One notable exception is Joseph Wood Krutch, who was a part of the New Humanist movement, which was also a reaction against the monistic philosophies popular in the early part of the century. What all of these writers have in common, it seems, is their dualism--i.e. their belief in a spiritual as well as a material world--the type of which varies with each writer. Besides bringing about this reaction against monism, the growing scientific knowledge of the late nineteenth and early twentieth century brought about a decline in sentimental treatment of nature popular among some of the lesser writers about the genre, such as N. P. Willis, Thomas Bailey Aldrich, and Charles Dudley Warner. It also caused a decline in the expression of simply aesthetic delight in nature found in some of the works of Thoreau and Burroughs and more pronouncedly in the works of Muir.

This study of Roosevelt and of the first few years of the twentieth century serves as a good preface to a summary of literary theory of later twentieth century nature writers. Writers after Roosevelt have had certain advantages which earlier writers did not. Many adjustments in the world view resulted from the rapid growth of scientific knowledge after Darwin; the early battles fought over those adjustments and the spiritual agony that accompanied them were over by the time

of World War I. That fact freed the nature writers to turn their attention to the problem of man in this world and to deal with aspects of his existence such as technology and conservation, aspects which hardly concerned them in the nineteenth century. Secondly, their genre had been well established and adequately defined through the efforts of writers such as Roosevelt, Burroughs, and others in the first years of the century. Since then, there has been an increasing number of nature writers; among them are many who, because they possess the necessary balance of scientific knowledge or training and literary skill, have surpassed in their works the literary quality of Burroughs and Muir and, in a few rare cases, have matched that of Thoreau.

One of the first important nature writers and theorists after Roosevelt was his friend, Charles William Beebe (1877-1962). In 1944 Dr. Beebe edited The Book of Naturalists, an anthology of nature writing. In the Preface he states that he selected the works for the anthology according to their "scientific soundness and literary quality."[32] In an interchapter Beebe amplifies that statement. Like Burroughs, he says that the scientist and the nature writer use each other's methods:

> The common bond is that any overstepping of the sheerest boundaries of truth, any dalliance, however ephemeral, with any doubtful theory, however attractive, any poetic lure of exaggeration, automatically damns forever all the work of any naturalist.[33]

Beebe then distinguishes between scientific and literary natural history. The scientific writer must strictly document his work, while the naturalist-writer must make his writing pleasing in form, a quality which would be seriously impaired if the writer were confronted with numerous references and allusions to sources and the works of

others.[34] Yet simply a lack of documentation does not necessarily make good nature writing; a natural fact which would need no "fine literary dressing" for a zoologist or a naturalist, for instance, must, for the intelligent but unscientific reader, "be put into language that is comprehensible, clear, and perhaps pointed by some apt simile out of his own experience."[35]

The next theorist of significance is Donald Culross Peattie (1898-1964). Peattie's first important statement of theory came in a scathing review of Ernest Thompson Seton's Great Historic Animals. The review resulted in another "nature faking" controversy, somewhat similar to but not as monumental as the one Burroughs had started concerning Seton some thirty-five years earlier. Peattie says that the work of the nature writer must not run over into fantasy nor must it "show the bones of scientific method." "Good nature writing," he says, "is indeed close to poetry, far closer than most other sorts of prose, for it is very legitimately concerned with an external beauty." The nature writer must have a love for nature, but he has "one great duty to science," that is, to report truthfully.[36] There is little in this with which Burroughs would disagree. However, Peattie goes on to distinguish between modern nature writing and that of the Thoreauvian tradition. He asks essentially that modern writers break from that tradition because Thoreau, even though he has "a noble literary style," has not a modern attitude toward nature.[37] What Peattie wants in modern nature writing is "something that is as much of our day as Transcendentalism and self-taught wood-wisdom were a part of Thoreau's." He says,

> I am thinking of nature writing in which we shall feel every moment the deep biological undertow beneath the shining surface of nature. The sense of beauty that has long preoccupied nature writers as it has poets will still be there, I hope, but it will be sought not only in the obviously pretty, but in the sinews of nature, the big, slow shouldering of her causative forces. In coal as well as in rainbows, in fish-milt as well as in nectar.[38]

In other words, Peattie asks the writer to search for the meaning of life among the destructive as well as constructive forces of nature, among the ugly as well as the beautiful, not to be like John Muir, who in his passionate love for nature often failed to see the ugliness of it.

Peattie continues his plea for a break with the Thoreauvian tradition in his autobiography, The Road of a Naturalist. There he says that nature writing at its best takes on "the luminosity of poetry."[39] But the nature writer is less scientist or poet than reporter, who takes us with him, "through the gate he holds ajar, into living nature. . . ." We do not want him to know too much: "We prefer sometimes to see him stumped; we don't mind if he scratches his poll in public. Better that than a fellow in an out-sized wig, handing down decisions." Neither do we want a professor "to lecture at us out-of-doors." The writing naturalist should kindle enthusiasm rather than instruct. "For this, his own enthusiasm is boundless. He wants no less than to get everybody thinking his way (modest ambition!)."[40] Then Peattie gives a history of nature writing. He notes that the writers of the nineteenth century were romantics, moralists, and sometimes even mystics. The best of the moralism was good, he says, and the romanticism was not only understandable but also precious in its contribution to the literary world, and there was even something of value in the mysticism. However, he hastens to add,

> If I acknowledge all this, may I then be permitted to say that the whole romantic pattern for life, thought, and style of a nature writer is not binding upon a man of the twentieth century? That a new attitude toward Nature must be allowed to grow, to meet new hungers and new truths?[41]

Another theorist of nature writing is Joseph Wood Krutch (born 1893). His first substantial statement on the subject appeared in an article called "A Kind of Pantheism," which was a part of the introduction to his edition of Great American Nature Writing (1950). Krutch comments on the scant attention paid to nature writing by the critics; although literary histories give considerable space to Thoreau and some credit him with founding a whole subsequent school, they take no note of the modern school of writers including Beebe, Gustav Eckstein, Peattie, and Julian Huxley, to which group there have been none comparable. Their work is "neither purely scientific nor easily placeable in any of the traditional department of belles lettres."[42] It is, in fact, a new kind of work, not in "the impulse to escape the complexities of civilization," nor in "the desire to celebrate the soothing or inspirational effects of natural scenery," nor in the interest in natural history. Yet, Krutch says, there is some new point of view, some new synthesis made. That new point of view in nature writing began with Thoreau; it was essentially a sense of intimacy and fellowship with his fellow creatures. Such a sense was possible first in Thoreau's time because of the development of scientific thought after the Renaissance and of the work of the naturalists of the eighteenth and early nineteenth centuries. Writers since Thoreau have given less humorous as well as less emotional expression of his attitude as they have "insisted upon looking at nature from some point of view common to all of its creatures rather than from that of man's own special desires and purposes."

Perhaps the distinguishing characteristic of modern nature writing is the result of "this sense of oneness, this conviction that we are all, as it were, in the same boat."[43]

In a later essay called "Postscript," Krutch says that nature writing is consciously concerned with the expression of the writer's awareness of something which most people overlook. It finds readers outside the group who are interested in natural history and allied subjects as a hobby. It exists as a department of literature because works in other departments "are no longer concerned with certain truths of fact and feeling which some part of even the general public recognizes are lacking." At least those nature writers who follow Thoreau "are concerned not only with the aesthetic and hedonistic aspects of the love of nature, but also with what can only be called its moral aspect."[44] The nature writer asks the average man "to open his heart and mind to nature as another kind of writer asks him to open them to art or music or literature." He raises the question of the moral consequences of man's forgetting that he is alive; he must, in short, help make man aware of his physical as well as spiritual dependence upon nature.[45]

From this survey of the literary theory of the modern nature writers, it appears that from Thoreau's time to the present there has been a movement in nature writing away from expression of mere aesthetic delight in nature to literary expression of scientifically accurate natural facts. As significant as this change is the increasing emphasis in the nature essay on the relationship between man and the natural world. Burroughs had said that the natural facts become interesting when they relate in some ways to our lives; in fact, natural history or nature study would not interest us at all if we did not find

something in it akin to our feelings, methods, and intelligence. For Peattie, the nature writer must show man's relationship to the "biological undertow" and the "causative forces" present in nature; he must go even a step further and help one realize the value of his place among mankind.[46] And for Krutch, the nature writer must express a sense of intimacy and fellowship with the natural world.

The increasing emphasis on man in relation to the natural world, then, must be accounted for in a final definition of the nature essay. It may be defined as an essay which has as its primary subject matter the history of natural phenomena and man's relation to them; its style is characterized by the rhetoric and language of the informal essay rather than by the language and formal structure of the scientific tract. Its appeal, therefore, is as much to the heart and imagination as to the intellect.

In his 1958 study of nature writing, Judson Dodds McGehee defines the nature essay as "any essay which reveals the experiences, reactions, and impressions of its author, and which is as concerned with the quality of the experience as it is with the natural fact. . . ."[47] This requirement is best met, according to McGehee, by the group of writers he calls the "literary-naturalists," including men such as Peattie, Edwin W. Teale, Henry Beston, and Louis J. Halle, who "devote most, if not all, of their literary productions to the genre."[48] McGehee names two other categories of nature essayists. One is the "belles-lettres nature essayists," including men such as Krutch and John Kieran, who are "professional men of letters--critics, journalists, scholars--who write nature essays as an avocation, or as a diversion from their other literary chores."[49] The other group is what

McGehee calls the "scientist-popularizers," including Julian Huxley, Rachel Carson, and Loren Eiseley, scientists who "from time to time, publish popular narratives and essays on natural history subjects for the reader."[50] McGehee's title for this last category is an unfortunate one, for as Chapter II will show, the purpose of the nature essayists, including Eiseley and Carson, is not to popularize science but rather to give a literary treatment ot natural history.

Despite McGehee's unfortunate choice of words in this instance, his work stands as the most systematic study of the genre to date, and his conclusions are worth noting. His study shows the origins and continuity of the genre from Thoreau through the works of Burroughs, Muir, Beebe, Peattie, and W. H. Hudson. He concludes that in its outer form, the nature essay is indistinguishable from the familiar essay in length, point of view, linguistic medium, and structure, but it is unlike the familiar essay in that it is strictly devoted to reality while the latter is not required to be. It is also distinguishable in that it is structurally more episodic than the familiar essay. McGehee draws several conclusions concerning the nature essay's inner form. First, its subject is the "totality of man's experience in nature." It concerns man's relation to the natural world and to natural history. There are also special interests which distinguish the nature essay from other literary forms--"a realistic conception of nature, an appreciation of wildness, a devotion to science, and a dedication to the principles of conservation." Second, the characteristic style of the nature essays McGehee examined included rhetorical devices that tended to humanize the subject matter or to intensify the poetic quality of the prose, a "judicious use of both the anthropomorphic and the

pathetic fallacies," truth to fact, and an absence of sentimentality. Third, the characteristic tone was joyous, enthusiastic, awestruck, wondering. Finally, the characteristic attitude was that of kinship to all living things.[51]

Nature writing by authors outside the United States seems to have followed the same general lines of development and adhered to the same definitions of genre. Some American writers who figured in the development of the genre have been mentioned previously; it might be useful at this point to mention briefly some of the writers from other countries as well as to add to the list of American writers in order to put American nature writing into historical perspective.

Modern nature writing had its roots mainly in the eighteenth century when pioneering scientists, through classification and close study, began to bring order to apparently chaotic nature. Yet some nature writers see in The Compleat Angler (1653) of Izaak Walton the beginnings of a new genre. In the eighteenth century, interest in nature increased. A Swede and friend of Linnaeus was Peter Kalm, who traveled in North America from 1748 to 1751 and wrote about the natural history he observed. Writing in eighteenth century France were Comte George Louis Leclerc de Buffon and Andre Michaux, who came with his son to the United States in 1785 and stayed until 1796. But perhaps the Frenchman whose writings had the most lasting effect on the Western world was Chevalier de Lamarck. In Switzerland were Albrecht von Haller and Francois Huber, who despite his blindness did pioneer studies of the bee. From Germany came Alexander von Humboldt, who traveled in America and other parts of the Western hemisphere from 1799 to 1804. Finally, in England were Mark Catesby,

who visited America from 1712 to 1719 and from 1722 to 1725, and Gilbert White, whose The Natural History of Selborne (1788) is given credit by most authorities for being the first major work in the genre of nature writing, liked generally for its charm and readability. Donald Culross Peattie has said that it is "a piecemeal affair of unsystematized material, neither a naturalist's diary of the year. . . nor a thorough investigation of anything in particular." Yet, he says, its rambling quality makes it popular, and "for the naturalist it is still a model in the art of investigating the commonplace in the certainty that it will yield up treasure."[52]

As already shown, the nineteenth century saw the rise of the great naturalists, in whose wake developed the nature essay as it has been defined in this work. From the Caribbean to America came the great John James Audubon, who became acquainted with the Scotsman, Alexander Wilson, who, in turn, had come to the United States in 1794. Francois André Michaux came to the United States with his father in 1785, and another Frenchman, Constantine Samuel Rafinesque, spent his last twenty-five years of life here. Finally, Englishman Thomas Nuttall found his way to the United States in 1808. Other patterns and sources for the nature writers were set down by the later scientists: Jean Henri Fabre, the French entomologist; Asa Gray, the American botanist, and Clarence King the geologist; and English scientists Charles Robert Darwin and Alfred Russel Wallace.

Later nature writers include the Belgian, Maurice Maeterlinck; the Frenchman Jacques Delamain; the Englishmen Richard Jeffries, William Henry Hudson (although Hudson was born in America and spent his youth in Argentina), Llewelyn Powys, Julian Sorell Huxley,

John Burdon Sanderson Haldane, and more recently Gerald Durrell; the Americans Olive Thorne Miller, Bradford Torrey, Maurice Thompson, William Brewster, William Temple Hornaday, Clinton Hart Merriam, Frank Michler Chapman, Mary Hunter Austin, Dallas Lore Sharp, Henry Beston, Sigurd F. Olson, Edwin Way Teale, Hal Borland, and Louis J. Halle. This list, of course, is not complete; a complete one would include many other authors of excellent works.

The literary theory, definitions, and general history presented thus far will serve as bases for the analysis of the nature writing treated in this work. There will be no attempt to defend nature writing as a genre. That has been done adequately in three previous studies. Robert Whitmore Bradford's "Journey into Nature: American Nature Writing, 1733-1860" traces the development of writing that led to Thoreau's establishment of the nature essay as a form. Hicks's excellent study, previously cited, concentrates on the popularization of the natural history essay by Burroughs and Muir. Finally, McGehee's systematic study of the works of six writers produced conclusions about the genre which, for the most part, the following pages will bear out in relation to the writers studied here.

This study has a two-fold purpose: to analyze what the nature writers have to say about the relationship of man to nature in the twentieth century (the basic theme in twentieth century nature writing) and to evaluate the literary merits of what they have written. The first purpose will be achieved in the following way: Chapter II will deal with the attitudes of the nature writers toward science; its content will be, in part, an amplification and extension of some of the material presented as literary theory above. However, its main purpose will be

to treat the nature writers' role as the interpreters of science through their literary treatment of natural history and to analyze their role in and their obligations to society. Chapter III will present the religious attitudes of the nature writers. The recent shifts in man's point of view concerning nature, as presented by Krutch and Peattie, have necessarily caused the men who write about nature to reconsider their religious beliefs. Chapter III will treat those considerations as they appear in the nature essays of various writers. It will suggest that technology is a contributor to man's spiritual dilemma and will treat the theme of man in relation to the technological society; it will also present not only what the nature writers see as man's present condition but also what the prospects for modern man are in relation to technology. Chapter IV will analyze the attitudes of the writers toward the conservation movement in the twentieth century as man's attempt to guard against total encroachment by technology. Chapter V will fulfill the second purpose for this study. It will be a chapter of critical judgments concerning the literary merits and values of the nature writings treated in this study. It will also briefly touch on the relationship of those writings to what Krutch calls "the condition of modern literature." Finally, Chapter VI will be a statement of the cultural significance of American nature writing.

The choice of essays for study here has been made primarily on the basis of their quality and their pertinence to the analyses outlined above. The works of Burroughs and Muir are not treated even though the greater volume of their work was published in the first two decades of this century. But trained in the nineteenth century, they belong to an earlier generation of nature writers than those treated

here. This study, then, will concentrate mainly on certain of the nature essays of William Beebe, Donald Culross Peattie, Joseph Wood Krutch, Loren C. Eiseley, and Rachel L. Carson, but there will be more than occasional reference to the works of other fine nature writers such as Sigurd F. Olson and Henry Beston.

More specifically, most of the essays treated in this study appear in Beebe's Jungle Peace, Edge of the Jungle, and Jungle Days; Peattie's An Almanac for Moderns, A Book of Hours, and Flowering Earth; Krutch's The Twelve Seasons, The Desert Year, and The Best of Two Worlds; Eiseley's The Immense Journey and The Firmament of Time; and Carson's Under the Sea-Wind, The Sea Around Us, and The Edge of the Sea. It must be stressed once more, however, that this list is by no means exhaustive, and incidental references will be made to as many other essays and writers as the scope of this study will allow.

NOTES

[1]Joseph Wood Krutch, The Best of Two Worlds (New York, 1953), pp. 158-159.

[2]Van Wyck Brooks, From the Shadow of the Mountain: My Post-Meridian Years (New York, 1961), p. 21.

[3]Essay is a rather inclusive term which Thrall, Hibbard, and Holman in A Handbook to Literature (New York, 1960), p. 183, define as "A moderately brief prose discussion of a restricted topic." They list, as qualities of the informal essay, "the personal element (self-revelation, individual tastes and experiences, confidential manner), humor, graceful style, rambling structure, unconventionality or novelty of theme, freshness of form, freedom from stiffness and affectation, incomplete or tentative treatment of topic." These definitions have been used for the term essay as it appears in the present work.

[4]Philip Marshal Hicks, The Natural History Essay in American Literature (Philadelphia, 1924), p. 96. Hicks's work is an invaluable story of American nature writing. He gives a thorough survey of nature writings up to Thoreau's time, but he gives the greatest amount of attention to Thoreau and his successor, John Burroughs. Joseph Wood Krutch also treats Thoreau as the founder of the nature essay in "A Kind of Pantheism," The Saturday Review of Literature, June 10, 1950, pp. 7-8, 30-34.

[5]Norman Foerster, Nature in American Literature (New York, 1958), p. 264.

[6]Hicks, The Natural History Essay in American Literature, p. 85.

[7]John Burroughs, The Writings of John Burroughs (Boston, 1904), XIV, 191; hereafter cited as Writings.

[8]Ibid., p. 192.

[9]Burroughs, Writings, VIII, 53.

[10]Ibid., pp. 61-62.

[11]Burroughs, Writings, XIV, 194-195.

[12]John Burroughs, Under the Apple-Trees (Boston, 1916), p. 190.

[13]Burroughs, Writings, XIV, 196-197.

[14]Ibid., p. 206.

[15]Burroughs, Writings, VIII, 61.

[16]Burroughs, Writings, XIV, 207-208.

[17]Hicks, The Natural History Essay in American Literature, p. 6.

[18]Theodore Roosevelt, The Works of Theodore Roosevelt, ed. Herman Hagedorn (New York, 1926), V, xxi; hereafter cited as Works.

[19]Theodore Roosevelt, The Letters of Theodore Roosevelt, ed. Elting E. Morison (Cambridge, Massachusetts, 1951), III, 441-442; hereafter cited as Letters.

[20]Clara Barrus, The Life and Letters of John Burroughs (Boston, 1925), II, 49.

[21]See Burroughs, Writings, XIV, 203.

[22]Roosevelt, Letters, III, 467-468.

[23]Ibid., pp. 511-512.

[24]Roosevelt, Works, V, 367-374; the interview appeared as "Roosevelt on the Nature Fakirs," Everybody's Magazine, XVI (June, 1907), 770-774.

[25]Edward B. Clark, "Real Naturalists on Nature Faking," Everybody's Magazine, XVII (September, 1907), 423-427.

[26]Roosevelt, Works, V, 376.

[27]Roosevelt, Letters, III, 463.

[28]Bigelow was at that time a junior member of the staff at the Harvard Museum of Comparative Zoology. From 1930 to 1939, he was director of the Woods Hole Oceanographic Institution where he became a strong influence on Rachel L. Carson. It was to Bigelow that she dedicated The Sea Around Us.

[29]Roosevelt, Letters, V, 289.

[30]Ibid., p. 290.

[31]Ibid., p. 701.

[32]William Beebe, The Book of Naturalists (New York, 1944), p. ix.

[33]Ibid., p. 87.

[34]Ibid., p. 88.

[35]Ibid., p. 90.

[36]Donald Culross Peattie, "Nature and Nature Writers," The Saturday Review of Literature, August 28, 1937, p. 10.

[37]Ibid., p. 11; Peattie pursues this idea further in "Is Thoreau a Modern?" North American Review, CCXLV, No. 1 (March, 1938), 159-169.

[38]Peattie, "Nature and Nature Writers," p. 11.

[39]Donald Culross Peattie, The Road of a Naturalist (Boston, 1941), p. 275.

[40]Ibid., pp. 276-277.

[41]Ibid., pp. 280-281.

[42]Krutch, "A Kind of Pantheism," pp. 7-8.

[43]Ibid., p. 8.

[44]Krutch, The Best of Two Worlds, p. 164.

[45]Ibid., pp. 164-165.

[46]Peattie, The Road of a Naturalist, p. 310.

[47]Judson Dodds McGehee, "The Nature Essay as Literary Genre: An Intrinsic Study of the Works of Six English and American Nature Writers" (unpub. Ph. D. dissertation, University of Michigan, 1958), pp. 45-46.

[48]Ibid., p. 46.

[49]Ibid., pp. 49-50.

[50]Ibid., p. 42.

[51]Ibid., pp. 181-186.

[52]Donald Culross Peattie, An Almanac for Moderns (New York, 1935), p. 128.

CHAPTER II

NATURE WRITING: STUDIES IN MAN'S RELATIONSHIP TO NATURE

Because of the requirement that nature writing be scientifically accurate in its recording of natural fact, any study of that genre must take into account not only the attitude of the writers toward science and of scientists toward them; but because both literature and science have ultimately social purposes, it must also consider the role that the nature writers play in society. It is not enough to say that the nature writers generally accept and believe in science and that the scientists often reject them as popularizers of science, for the one-sided antagonism between the scientists and the nature writers is another by-product of the last hundred years of development in scientific knowledge. Involved in it are elements of the century-old argument concerning the roles of science and literature in dictating the future of mankind, the increasing specialization of this century, and the changes, because of technological advances, in man's attitude concerning his proper place in relation to nature. This chapter, then, deals briefly with the conflict between science and the humanities, the attitudes of the scientists toward the nature writers, and the attitudes of the nature writers toward science. It then deals in more detail with the views of man's relationship to nature afforded to the writers, in part, by their attitudes toward science and with their obligation to express those views.

It is not the purpose here to revive the old conflict between literature and science which took place a decade ago with C. P. Snow and F. R. Leavis as principals. However, they did not say the last word on the subject any more than did Thomas Henry Huxley and Matthew Arnold in the last century, and to pretend that the conflict no longer exists is foolish. The significance of the nature writer in society is closely related to this controversy, for in him is a curious mixture of devotion to science and humanism in which may lie the key to the future mental and social well-being of mankind; in him is that combination for which institutions of higher learning have been searching in recent years in curricula designed to bring about a so-called "marriage" between the arts and the sciences.

Instead of "marriage" between the arts and the sciences, however, there is, in fact, a wide gap. It is precisely because of this gap that the scientist dislikes the nature writer. According to C. P. Snow, modern society breaks down into two cultures: the traditional culture, which is mainly literary, and the scientific. Each culture is ignorant of the virtues of the other, apparently at times deliberately so; the result, on each part, is growing incomprehension and dislike. Of course, Snow is talking of a general intellectual climate, for he readily admits that a good many scientists and literary persons are indistinguishable from each other. Such is certainly true of most of the nature writers, among others. Generally, however, Snow finds that the traditional culture loses much more by the separation than does the scientific culture. Intellectually, a lack of scientific knowledge causes the literary person to miss a whole body of experience. The greatest loss, however, is a moral one. The scientist, like any deep-natured man,

says Snow, knows that the individual human condition is essentially tragic; despite the triumphs and joys, it is loneliness which ends in death. This latter idea was a strong point of contention between the two sides of the argument, for it appeared to Snow's critics that his statement of the scientist's position left no room for the hope of the Christian faith. Snow continues that the scientist will not admit that because the individual condition is tragic the social condition must be also. The scientist holds in contempt representatives of the traditional culture who use insight into man's fate to obscure social truth and perpetuate social injustice.[1]

Of course, Dr. Leavis is not willing to admit that representatives of the traditional culture are to blame for whatever social conditions exist or that they should therefore relinquish the direction of society to the scientists, a relinquishment which he felt Snow was calling for. He answered Snow in Two Cultures? The Significance of C. P. Snow, and before the argument finally died down once more, it had taken on, among the supporters of both sides, the tone of children shouting "We did not!" and "You did, too!" It degenerated in some cases to personal abuse. In 1963, Snow reevaluated his position in The Two Cultures: And a Second Look, in which he further explained his earlier lecture and added, significantly, that the division between the two cultures was not as great in America as it was in England, mainly because of the efforts to train students in both the sciences and humanities.[2] Snow was also carefully optimistic about the results of educational programs. He says that we will not produce

> men and women who understand as much of our world as Piero della Francesca did of his, or Pascal, or Goethe. With good fortune, however, we can educate a large proportion of our better minds so that they are not ignorant

> of imaginative experience, both in the arts and in science, nor ignorant either of the endowments of applied science, of the remediable suffering of most of their fellow humans, and of the responsibilities which, once they are seen cannot be denied.[3]

Again, these are not the final words on the controversy, but the significance of it was its indication that the old issue was not dead but was rather very much alive, the gap between literature and science being perhaps as wide as ever.

Addressing himself to the subject, physicist I.I. Rabi also finds that social well-being depends on an understanding of scientific thought, and that the modern condition results from the presence of a great deal of knowledge and an absence of wisdom which he finds is "most manifest in the application of knowledge to human needs."[4] The wisdom for which we must search can be found in a blending of the traditions of science and the humanities, for it is "an interdisciplinary quality" which depends upon knowledge offered by science and yet is "not the product of a collection of specialists."[5] But instead of blending, today, there is a lack of communication; and

> science seems to be no longer communicable to the great majority of educated laymen. They simply do not possess the background of the science of today and the intellectual tools necessary for them to understand what effects science will have on them and on the world.[6]

If, as Rabi suggests, a solution lies in a man who generalizes instead of specializes, who represents a blending of the traditions of science and the humanities, who is able to apply knowledge to human needs, then no one fulfills these requirements better than the nature writer. In fact, he stands between the layman and the scientist. He is not a popularizer of science, as the scientist often charges, but rather an <u>interpreter</u> of science through nature. William Beebe made a

distinction between what he called "scientists of the first rank" and "articulate naturalists," whom he called "excellent interpreters of science."[7] He felt that in the modern world "interpretation is of great merit--in fact, is absolutely essential."[8] In Beebe's list of "ideal equipment for a naturalist writer of literary natural history," one finds not only the tools of the scientist devoted to the scientific method but also those of the man who is prepared to respond emotionally to what he finds in nature, whether his response is humanistic, pantheistic, Christian, etc. Beebe's "equipment" is as follows:

> Supreme enthusiasm, tempered with infinite patience and a complete devotion to truth; the broadest possible education; keen eyes, ears, and nose; the finest instruments; opportunity for observation; thorough training in laboratory technique; comprehension of known facts and theories, and the habit of giving full credit for these in the proper place; awareness of what is not known; ability to put oneself in the subject's place; interpretation and integration of observations; a sense of humor; facility in writing; an internal sense of humbleness and wonder.[9]

Professor Rabi has suggested that the scientist wants his science understood.[10] If such is the case, then why does the scientist persist in his disparagement of the nature writer? Perhaps the answer is that in an age of specialization the scientist finds it heretical to generalize. And generalization is essentially what Beebe has called for in his list of "equipment." Earlier he had written that he did not discourage identification of life forms, because we must have names for natural phenomena, but that he refused to be satisfied with mere identification; in other words, he again called for generalization.[11] His career as scientist and nature writer amply shows that he followed his beliefs. Trained as an ornithologist, Beebe produced many scientific works as well as several volumes of nature writing in which he treated various life forms from different parts of the world. Before his career ended,

he became recognized as a pioneer in explorations of the oceans, activities which carried him far from his field of specialization. Beebe says that some of his colleagues told him that he had attempted the impossible and that there were only two ways of writing on the subjects he had chosen: "as an undefiled specialist in the refined jargon and with the ponderous documentation demanded by the ritual of [his] caste," or he could have turned to a literary presentation of the material "with well-known devices and embellishments of rhetoric, which may perhaps delight but are sure of misleading the uncritical reader." Anything in between would be a compromise "distasteful alike to the high-brow scientist and the thrill-seeking, movie-fed public." Beebe maintained that he used the best of all three:[12] the refined jargon, the embellishments of rhetoric, and the compromise.

Donald Culross Peattie likewise made the choice between generalization and specialization and left college rather than take a higher degree. He, too, felt the censure of the specialists. Nature writing, he says, has often been accused by the scientists of "amounting to no more than science diluted, uncreative, retold, the picking of great brains." They suggest that it is like taking a great symphony, partially de-orchestrating it to bring out the melody, arranging it for popular instruments, syncopating it, putting words to the tune, and popularizing it. In such cases, they say, it would be better that the music "remain incomprehensible and inaccessible to the many, but still great and pure for musicians at least."[13] Peattie admits that the popularization of science, at its worst, is such a useless endeavor and is guilty sometimes of mistakes in fact and even of deliberate misrepresentation. In such cases the scientists are justified in their

criticism. But at its best, nature writing takes on "the luminosity of poetry."[14]

In An Almanac for Moderns, Peattie maintains a position much like Beebe's. Before specialization, the naturalist could be interested in many things. Now, the name Nature is almost a disgrace to the specialists. They think it is too much like "the discarded romantic philosophy of the eighteenth century and early nineteenth century, and so they half deny the reality of its existence." Peattie believed that only certain people are "mentally gifted at generalization" about the "precise information" which the specialist supplies. "But there is still a place for the all-around naturalist. His use to the sciences is correlative, his role, elsewhere, an interpreter's."[15] In his essay "Chlorophyll: The Sun Trap," Peattie tells of his first experience in extracting chlorophyll from plants. This episode showed him the difference between the "hard core" scientist and the naturalist. His classmates found meaning in the structural formulae and geometrical beauty of the diagrams of chlorophyll atoms. But to Peattie, "there was just one fact to quicken the pulse. That fact is the close similarity between chlorophyll and hemoglobin, the essence of our blood."[16] Peattie wanted, in fact, not to become ingrown and introspective as he felt specialists became.[17]

Rachel Carson also saw the dangers of specialization. She said, concerning classification, that it was "possible to compile extensive lists of creatures seen and identified without ever once having caught a breath-taking glimpse of the wonder of life." She rejected classification as useless if it were an end in itself.[18]

More recently, Dr. Loren C. Eiseley has noted that scientists sometimes fail to distinguish between Thoreau or Hudson and the science writer for the local newspaper. He objects to his nature essays being classified as works of "popular science," a mistake often resulting from the fact that works of professional scientists like Eiseley are automatically turned over for review to other practicing scientists who have no particular literary inclination. The likely response of such reviewers is "vague charges of 'mysticism' or 'unscientific language.'" As Eiseley says, "These humorless charges are frequently the result of a complete misapprehension of what the nature writer is about. . . ."[19] Dr. Eiseley adds that he thoroughly agrees with Van Wyck Brooks's comments on this subject. Brooks asks,

> Why are these writers of natural history now called popularizers of science as if all their style went for nothing, as if theirs were the bottom rung of the ladder of science instead of an upper rung of the ladder of art?[20]

Obviously, the scientist cannot often accept as legitimate the purpose which the literary naturalist has in writing, and one therefore tends to doubt Dr. Rabi's statement that most of the misunderstanding between the scientist and humanist is on the part of the humanist. It seems that in the case of the nature writer, the humanist is willing to go further than the scientist. Perhaps that is true because most of the nature writers are trained scientists--Beebe, Peattie, Carson, and Eiseley, for instance; if they are not trained scientists, then like Krutch, they are steeped in scientific knowledge and observe with the care and methodology of the scientist. The value that the nature writers place on science is clear from their insistence on a strict fidelity to nature in the recording of natural fact. And, in varying degrees, they put their faith in science.

None comes close to Haeckel's complete faith in science. However, Peattie's faith is strong. In "TWO Ante Meridian" he reaffirms his joy in life and his faith in man and modern society: "I have faith in science. I believe in the reality of ethics. I have beheld beauty." Whether they know it or not, according to Peattie, most modern men also believe in these things; they imply that belief when they call the doctor or when they accept the calculation of the date of an eclipse. Man, he says, is not a fallen angel but may be on "an evolutionary road toward angelic transmutation." Led by the sound of trumpets he may stumble, but nevertheless he heroically struggles forward.[21] Peattie's faith is a result of the condition of twentieth century life. He was an urban man, and he enjoyed the city as much as he enjoyed the wilderness. He was as aware of man's inescapable place in nature in the city as he was in the forest or desert. Despite technology and its by-products such as World War II, he believed that many of man's problems could be solved through science. And in "TWO Post Meridian" he challenges man to pick up the tools that civilization had been so long in fashioning:

> I do not speak of mechanical tools. For one who does not read or write may fire a gun and cut life short in a wild swan or a Lincoln or the child of an enemy. I mean the knowledge, the penetrant daylight way of thinking, that afternoon maturity of this tempered thing that Galileo left us, that Newton and Darwin and Mendel left us. They call it science. . . .[22]

Yet, he does not propose science as a new religion. It is not yet worthy and has "not yet assumed the responsibility for man's soul and conduct that a true religion must assume." He thinks that perhaps by its very nature sound science is "delimited from such an undertaking" or "has not yet found the courage to become admittedly a moral force."

Instead, he points to science as "a method, a way of thought on which all men can well agree." Through the "light of clarity and certainty" of science man may perhaps find a method by which he may "behold the faith which we all need as we need our daily bread." He adds:

> We cannot say that either among the stars or in the affairs of men are events directed with justice unless we call that justice inscrutable. But thinking men of this generation will not accept even a God they may not scrutinize. This may be the gift of modernity to the world--the reconciliation of science and religion. [23]

Science as a method appeals to Peattie because it reveals to him something that is everlasting--life. It tells him that "life itself is not separate from the matter of the universe."[24]

Other nature writers have found a more limited faith in science. In "Sequels" William Beebe states the plight of the scientist:

> All our stories are the middle of things,--without beginning or end; we scientists are plunged suddenly upon a cosmos in the full uproar of eons of precedent, unable to look ahead, while to look backward we must look down. [25]

Thus, science offers knowledge which is incomplete and everchanging. Nothing is stable; all is flux. Everything is process. But instead of the despair of a Henry Adams, Beebe finds, rather, a Whitman-like excitement and enthusiasm about the future. It is essentially the "middle position" of the writer like Beebe that gives him his impetus to write and his devotion to his subject:

> Thus was the ending still unfinished, the finale buried in the future--and in this we find the fascination of Nature and of Science. Who can be bored for a moment in the short existence vouchsafed us here; with dramatic beginnings barely hidden in the dust, with the excitement of every moment of the present, and with all of cosmic possibility lying just concealed in the future, whether of Betelgeuze [sic], of Amoeba or--of ourselves. [26]

Dr. Loren Eiseley's attitude toward science is a similar one. Science cannot reveal man's fate. Instead, man is

> rooted in his particular century. Out of it--forward or backward--he cannot run. As he stands on his circumscribed pinpoint of time, his sight for the past is growing longer, and even the shadowy outlines of the galactic future are growing clearer, though his own fate he cannot yet see.[27]

Of course, a knowledge of man's fate depends upon an explanation of his existence, and Dr. Eiseley feels that that explanation may lie in realms beyond nature which science cannot penetrate. Near the end of "The Flow of the River" he reflects on the "organization" in nature, exemplified in this case by the intricacy of the snowflake:

> There is no logical reason for the existence of a snowflake any more than there is for evolution. It is an apparition from that mysterious shadow world beyond nature, that final world which contains--if anything contains--the explanation of men and catfish and green leaves.[28]

As an anthropologist, Dr. Eiseley is aware of technological by-products of science and their effects on man. Machines may get smarter, but there must be man ultimately to run them. Eiseley will "stick with the birds. It's life I believe in," he says, "not machines."[29] And finally, in "The Secret of Life," he reflects on the scientist's vain attempts to produce life in the test tube. In many ways the scientist is no closer to it than he was a hundred years ago. Even if he does produce life, he still has not found its true secret. Eiseley, too, will search for the secret of life, but he will not do it in the laboratory. He will, rather, go out to his field, among the plants and their fruits, and look there for what Hardy called "the great Face behind."[30]

Joseph Wood Krutch, not being a trained scientist, finds science limited though useful, despite whatever undesirable societal changes it may have helped create. In "A Modern Privilege" he expresses his pleasure at being able to spend most of his time in the country. But he does not say that living there all of the time is better than living in the

city, for he feels that many who live in the country all of the time are not really aware of the life around them. Neither does he feel that he is "returning " to nature, for the civilization that has produced him is a complex, urban civilization. Therefore, he feels like Thoreau, who enjoyed the best of two worlds. He says, "We have that smattering of science which makes nature more wonderful, and we have also been trained in sensibility by reading."[31] The decision to live in the country or in the city is ultimately a personal one, Krutch says, but for him city life is necessary to furnish man with the urbanity which he cannot acquire elsewhere. After Krutch had acquired his, he then moved to the country because there one is more aware of Joy and Love, which are fading from human experience as man moves farther and farther away from nature. As man moves farther away from nature, he is isolating himself in an artificial world of mortar and bricks. He is, in fact, aligning himself with the nonliving, which man should fear more than death, for the psychologist and the philosopher tend more and more to think of man as a creature who obeys laws as the nonliving does rather than as one who follows his will.[32] This increasing association with the nonliving is due, of course, to one of the results of applied scientific knowledge--technology.

Whether the nature writer has only "that smattering of science which makes nature more wonderful" than it is, or the specialized training as an ornithologist, botanist, or marine biologist, his role in society is essentially the same. He must interpret science through nature. He must apply his scientific knowledge to human needs by showing man's proper place in relation to nature, to reestablish for him an association with the living. As pointed out in Chapter I, Peattie

differentiated between nineteenth and twentieth century nature writing by citing the development in this century of a new attitude toward nature, manifest in that writing. Man's shifting view of himself in relation to nature, which, according to Krutch, appeared first in the nature writing of Thoreau, was made possible through a whole intellectual revolution which had begun with the Renaissance. The new view was "that man is literally a part of nature"; Thoreau concluded that man was somehow a part of nature and that "only the emotional as well as the intellectual recognition of that fact can bring him spiritual or mental health."[33] This view was announced officially by science in Darwin's The Descent of Man.

But man's spiritual or mental health has suffered more and more in the twentieth century, as the scientific knowledge which made Thoreau's satisfaction possible has so greatly expanded that it has in effect alienated man from nature. He may emotionally feel a kinship to or the influence of cosmic forces or of the rhythms of nature, but the scientific explanation of that kinship or influence may be incomprehensible to him. Or, intellectually, he may recognize his relationship to nature, but because he isolates himself more and more in his "artificial world of mortar and bricks," he feels little emotional relationship to nature. For that reason, he can continue dumping his sewage into his streams and continue allowing poisonous gases to destroy the air he breathes, although he knows full well that by destroying nature he destroys himself. The role of the nature writer, then, is to give a literary treatment of natural history so that modern man can perhaps regain that emotional and intellectual recognition of his relationship to nature.

Exactly what that relationship is varies, of course, according to the different writers, and the reader will find that it varies generally according to the extent to which the writers embrace science. In his preface to The Log of the Sun, William Beebe suggests a way by which the reader might more easily discover natural relationships. He repeats the suggestion in many of his works, and forty years later incorporated it into his list of ideal "equipment" for the naturalist writer: to put oneself in the subject's place. He says that he presents familiar objects from unusual points of view. "Bird's-eye glances and insect's-eye glances, at the nature of our woods and fields, will reveal beauties which are wholly invisible from the usual human viewpoint. . . ."[34] In another instance, he says that if one lies down in the snow, he will observe in miniature the "epitome of geological processes and conditions." A rivulet becomes "a monster glacier-fed stream, rushing down through grand canyons and caves, hung with icy stalactites." Icy walls are undermined, and moraines are formed of thousands of tiny seeds.[35] We daily walk, says Beebe, and use our eyes the best we can, "and yet we touch only the coarsest, perceive only the grossest of life about us."[36] Indeed, throughout the work, Beebe implores the reader to change his vantage point, to view nature from one of those unusual points of view. The obvious result, though Beebe does not state it, will be a lessening of our tendency to make nature completely man-centered. Such is necessary if the nature writer is to escape being a sentimental, romantic "nature bug." Beebe deflates the idea of the naturalist as sentimentalist in Jungle Peace: "I am no nature sentimentalist, and in spite of moments of weakness, I

will without hesitation shoot a bird as she sits upon her eggs, if I can acquire desired information."[37]

Donald Culross Peattie sees the nature writer as a philosopher who struggles against a mechanistic theory of life. Peattie says that a molecular explanation of protoplasm is almost impossible because a protoplasm molecule is too complex, since it makes up all living things and has the power to make different compounds out of the same material.[38] To him many living things seem dead, but the distinguishing feature about living things "is that they have needs--continual, and, incidentally, complex needs," even in hibernation. Peattie says, "The gulf between a bacterium and a carbon atom, even with all the latter's complexity, is greater than that between bacteria and men," and if one objects that this criterion of life is "chiefly a philosophical one," he replies "that in the end the most absolute answers concerning every problem of matter, energy, time and life, will be found to be philosophical."[39] Scientists speak contemptuously of philosphers, but Peattie thinks that the role of philosophers in the natural, exact, and social sciences could be that of a "conference of large-minded representatives whose task it should be not to codify and embalm the laws, but keep them fluid."[40]

In A Book of Hours Peattie has a great deal to say about the nature writer's social role of explaining man's relationship to nature. In "SEVEN Ante Meridian" he sets down rules by which the naturalist operates. His job is not simply to discover the obviously new, nor to take censuses; but

> his concern is with the great flow and ebb of the primarily motivating forces. He is absorbed by the complexity of life, and it is not his business, as those who profess the

> mathematical sciences have sometimes thought, to reduce all phenomena to a few simple explanations.[41]

What Peattie is saying, in effect, is that he must generalize rather than specialize but that he must leave over-simplification to the popularizers of nature. The naturalist knows that a May morning is too complex to be reduced to a few laws and stresses. The origin of his science is emotional. Peattie says that

> it rises from appreciation. I am not saying that the naturalist is engaged with esthetics, for they are the science of beauty. The naturalist rather perceives the beauty in science. This has been denied, by scientists who are not themselves naturalists. But the greater the naturalist the less is he abashed by the idea of beauty.[42]

In "TEN Ante Meridian" he says that the naturalist is envied by other people because what he is doing looks too much like fun. He has also been criticized for spoiling the scene with vasculum and field glasses. Then there is the esthete who thinks that "beauty is his business alone" or the utilitarian, who thinks nature exists only for man's use. The naturalist does not serve "mankind's body and economy," but is possessed of a curiosity which must be satisfied. "And the most scientific virtue in the naturalist's curiosity," Peattie says, "is that it is not a reduction to mathematical terms. It sees true because, like an ant's eye, it multiplies the images."[43]

Peattie urges, in "FOUR Post Meridian," a realistic view of man's place in nature. Although he cannot take a completely detached view of man, he believes that man, as much as other animals, deserves honest, sympathetic, but not sentimental treatment by the naturalist. So, Peattie says, "Ploughman Everyman goes into my natural history, disturber, killer, planter, protector of his chosen beasts and grains that he is."[44] Peattie realizes that man does not usually change things

for the better, and he feels that many naturalists are not realistic when they simply describe what "used to be or ought to be." That man changes things is a fact, and it should be included in the naturalist's province. We cannot regain "the cold and terrible virginity of Nature," no matter how much we may want it back. Peattie is proud of man as a creator. He says,

> As creators, we gestate much monstrosity, much imbecility, and crime no end. But we have made beauty, too, we have made the great ideas. . . . But we have been a wonderful and a terrible people, who have pried the locks of Nature, looked in the treasure chests, and helped ourselves.[45]

When Peattie wrote Flowering Earth, he had written several other books on various subjects, and he admits that he put off writing this one because he was afraid. He was afraid of the "disparaging tones" of the scientists who he knew would criticize the book because it did not contain what they would expect to see in a botany textbook. But Peattie says that it was his intention to leave out such material.[46] What he records there are those things he had learned from his study of botany, beyond the natural facts of plant life. When he walks in the woods, "he becomes aware of something further that escapes him." That something is that "the sinews and pulls of great forces must be tensed and laxed, in all that relentless living."[47] This, perhaps, was part of his reason for becoming a botanist, the first step toward which he took by suddenly leaving his job in New York one March, going south by train, and following the spring to the north. He had been reading a botany book in his spare time, and he stopped at Harvard to see the professor who had written it instead of returning to New York. Peattie enrolled at Harvard and there put his faith in science, which to him spoke "the universal language" and prevailed "upon the

mysteries by friendship." It was "the taste of dragon's blood upon the lips that makes us understand the speech of birds," and it put a new dimension on the scene, "deepening it with marvelous perspectives." Further, it did away with intuitional judgments and emotional understanding and required a "bracing impersonality."[48] However, Peattie retreated from this complete faith in science and rejected graduate school and specialization to devote himself to something which he ultimately finds is "Nature in its deepest sense."[49]

Although Rachel L. Carson was no theorist on nature writing, she seems to have been motivated to write for the same reasons that other writers were. She makes no overt statement, but perhaps something can be inferred from two points she makes. In her preface to the 1960 edition of The Sea Around Us, there is urgency in her tone. She states that the sea "remains the last great frontier of Earth," suggesting that it is to be one of the last retreats of man.[50] Later, she writes that man tends to forget in "the artificial world of his cities and towns. . . the true nature of his planet"; that is, he loses sight of his true relation to nature. But he regains a sense of that nature when he is on a long ocean voyage and when, "alone in this world of water and sky, he feels the loneliness of his earth in space."[51] These statements certainly help explain why the naturalist retreats momentarily from man's "artificial world" to the real world of nature: to gain or regain a perspective on man's place in the universe. The Sea Around Us is a statement of that perspective as Rachel Carson found it. What she found was that man received certain legacies from his "all-embracing mother sea": blood with the same proportions of sodium, potassium, and calcium contained in the sea's water. And in stages of man's

embryonic development, he "repeats the steps by which his race evolved. . . ." Just as some animals (whales and seals, for instance) returned to the sea, so man has gone back. He stands on its shores and looks out upon it with curiosity and wonder. He is unconsciously aware of his evolution from it, and he devotes his efforts to explaining "a world that, in the deepest part of his subconscious mind, he had never wholly forgotten."[52] But man has returned to the sea on her own terms. He has not yet subdued or plundered her as he has the continents, but Miss Carson suggests that given time, man will subdue and plunder her.

When the reader has finished The Sea Around Us, he realizes that it is as much about man as it is the sea. Miss Carson puts man in perspective. She points out the mysterious but probably accidental quality of his birth and depicts him as a newcomer who is in effect ignorant of his surroundings. She frequently refers to his achievements in exploring the mysteries of those surroundings through science, but she always reminds us that his feeble efforts have brought knowledge relatively insignificant in comparison to what he has yet to learn. In each man's short time on earth, he is subject to cosmic forces and rhythms of the sea over which he has no control. He is, in fact, just one form of life among millions, dominant in a particular time and space.

Joseph Wood Krutch's "November: This Middle State" likewise concerns attitudes of modern man towards nature. The essay is a result of a visit from one of Krutch's friends who has a genuine aversion to nature. Krutch distinguishes between his friend and the average city dweller who goes to the country on weekends or even owns a

country house:

> The one sort thinks he is indifferent to or even that he likes the out-of-doors because he does not really know what the out-of-doors is; my friend dislikes it, dislikes Nature herself, just because he does know--or at least senses--what she is and what she means.[53]

He prefers "God's concrete" because he believes that "Nature has been tamed, that even plants are things that grow when, and only when, they are tended in pots on a window-sill or a penthouse terrace."[54] So when his friend leaves, both he and Krutch are relieved: he "to be returning to the world where man has successfully imposed himself upon nearly everything which is visible" and Krutch "to be allowed to remain where nearly everything reminds me that I am part of something neither myself nor wholly subject to men."[55] Krutch tolerates his friend's attitude because he once held a similar attitude himself. The horror of the country comes for him who can feel it from the fact "that there is so much here which is not man," so much that may be "far more significant than the things which only he knows about or cares about." In fact, man is insignificant enough so that "life would go on if what man calls the world came to an end."[56] What distinguishes the "true lover" and "true hater" of nature comes partly from the differences in their attitudes toward whether we should look to nature for guidance in solving our own practical problems and partly from "a difference in emotional reaction when the vast world of the living but nonhuman invites our awareness."[57] Krutch sees contemplation, the awareness of life, as a necessity for human life. He frowns on contemplating about man only, for that makes man the "be-all and end-all" and indicates that animate nature outside man is something left behind, made obsolete as life forms become "higher," making way for man.[58]

On the other hand, contemplating life forms outside of man tells us

> what we are a part of and how we may participate in the whole; we gain a perspective on ourselves which serves, not to set us aside from, but to put us in relation with, a complex scheme. Perhaps we also learn to suspect that we too are our own excuse for being, born to blush unseen by any eyes except eyes like our own.[59]

And, too, we can find comfort there that we are not alone in the "Great Rebellion" of the animate against the inanimate.[60]

In "March: An End and a Beginning," Krutch analyzes our alienation from nature and some possible reasons for it. He begins by saying that with March the new year really begins. The Romans, who made January the beginning of the year, took a giant step in isolating man from nature. This isolation is more pronounced today in the age of mechanization. He says,

> Some argue that urban life has had less to do with our progressive alienation from Nature than has the increase in our knowledge. They say that it is not so much because we are physically isolated that Nature means less and less to most people as because, having come to know better and better what she is really like, we are less and less able to formulate the myths which interpret her in terms acceptable to us. But we are part of her, nevertheless, no matter what she may be; and we cannot renounce her merely because we know, or think we know, some of her darker secrets. Whatever we discover about her we are discovering also about ourselves.[61]

It is true that new scientific knowledge has revealed that nature lacks the order that eighteenth century men saw and that it is a kind of war and not the source of the sublime as the Romanticists felt. Yet, he is not sure that he "would exchange the puzzle of excitement of the Nature which science has helped us to see for the eighteenth century's mere illusory idyl."[62] If we accept the universe, then we must accept nature as it is. We can learn from it, for "the contingencies of Nature have something to say about the contingencies of human nature also." Krutch

concludes that nature is strange because she is absolute.[63] The reader notes in this conclusion the pantheism which Krutch later admits in More Lives Than One.

The purpose of the nature writer is to express what those "contingencies of Nature" have to say about those "contingencies of human nature." Krutch seems to have come into his own as a naturalist during the year in the Southwestern desert which he records in The Desert Year. In that work, Dr. Krutch tells how he went to the desert in search of that emotional and intellectual recognition of our part in nature necessary to preserve our mental and spiritual health. The desert seems "to suggest and confirm a system of values for which much ought to be, but very seldom is, said."[64] It shows Krutch that there is something more valuable than owning things and that New York City is more absolutely a desert than the Southwest. He concludes in "Postscript" that the essence of what he had been looking for "is present in New England no less than in Arizona, and certainly only by loving can it be found in either place."[65] He is convinced that nature "furnishes the most cheerful as well as the most intelligible context for thinking and living and being. . . ." Whereas some people are leaving the cities for fear of "the bomb," he would leave them because he "wanted to preserve some sanity of mind and spirit until the bomb fell."[66] His desert year restored his belief in the necessity and the ability of his consciousness to preserve that sanity.

Dr. Krutch's "Postscript" in The Best of Two Worlds is his most significant statement on nature writers and nature writings. In that essay he makes explicit his concept of the role of the nature writer in modern society. To him, nature writing's very importance as a

department of literature derives from the fact that most writers of novels, poems, and plays "no longer find the contemplation of nature relevant to their purposes--at least to the same extent they once did."[67] Most modern wirters have lost the sense of nature as the most significant background of human life and place their characters in society. Contemporary painting distorts nature or makes it barely recognizable or even goes so far as to attempt to create a whole universe of man-made shapes. Nature writing is consciously concerned with the expression of the writer's awareness of something which most people are not aware of. It finds readers outside the group who are interested in natural history and allied subjects as a hobby. It exists as a department of literature because "works in other departments are no longer concerned with certain truths of fact and feeling which some part of even the general public recognizes as lacking." At least those nature writers who follow Thoreau "are concerned not only with the aesthetic and hedonistic aspects of the love of nature, but also with what can only be called its moral aspect." When, for instance, the average man thinks a cat is "cute," the nature writer asks him to explore the meaning of such thoughts, "to open his heart and mind to nature as another kind of writer asks him to open them to art or music or literature."[68]

But nature writing also raises the question of the moral consequences of man's forgetting that he is alive. The ultimate decision of whether man is an organism or a machine will determine whether his future will be totalitarian or free. The nature writer must help make man aware of his physical as well as spiritual dependence upon nature. Our fate may depend on our recognition of that fact, even if we do no

more than show it in such ritualistic or symbolic acts as planting a window box or growing a house plant. Krutch is not, in any respect, a sentimentalist. He says he sees in nature things as they are, not things as he thinks they ought to be. He admits its cruelty and its grotesqueness. But, like Emerson, he says that what one sees in nature will reflect his own temperament; Krutch sees most often and relishes most the "intricate marvel" and the comedy in nature.[69]

"Postscript" is a valuable essay to the student of nature writing. Since Krutch is not a trained scientist, he does not see the role of the nature writer as necessarily that of the interpreter of science. Instead, he is an interpreter of life, a man holding up warning signs to mankind; thus, man becomes the proper subject of nature writing, as he should be. Unlike Peattie and other scientists-turned-nature-writers, he admits a moral purpose in nature writing. There seems to be an attempt by those writers to remain amoral, presenting nature as it is. However, most of them, despite what they say, have some element of things-as-they-think-they-should-be in their writing. They may be revealing nature as it is at the time of writing, but when they venture guesses about what nature will be like in the future if present trends continue, they are at least suggesting a plea for things as they think they should be.

Loren Eiseley's concept of the role of the nature writer is quite similar to those treated thus far. In The Immense Journey he explores as far as possible what man's existence means in relation to the natural world. Yet the work is not that of the scientist but that of a naturalist who uses his scientific knowledge when possible to shed light on the problem of man's physical and spiritual being. In fact, he

recognizes the limitations of science. He says that the readers of the book need not look for "science in the usual sense," although he has attempted to be factually accurate. He says, "I have given the record of what one man thought as he pursued research and pressed his hands against the confining walls of scientific method in his time."[70] Toward the end of his work, Eiseley comments directly on the role of the nature writer, and perhaps here he departs somewhat from the other writers, especially Krutch. He says that it is better "for the emissaries returning from the wilderness. . . to record their marvel, not to define its meaning." For if the miracles were defined, they would cease to satisfy "the human need for symbols."[71] Thus, to Eiseley, nature writing does not have a moral purpose as it has for Krutch. In fact, he puts the burden on the reader, who must look among the recorded marvels to find for himself what relationship he has with them.

Thus far, this chapter has dealt with the role of the nature writer in a specialized, technological world. Accroding to the writers whose works represent the core of this study, the nature writer embraces science which gives him the specialized knowledge from which he generalizes. In fact, he interprets scientific fact through his generalization. His generalization takes the form of a literary treatment of natural history through which he hopes to aid modern man in perhaps regaining both an emotional and an intellectual recognition of his relationship to nature. As previously shown, the exact definition of that relationship varies according to the different writers. These ideas are not peculiar to just the five writers already treated. Following are the comments of other nature writers on these points;

the reader will note their similarity to the ideas already presented.

Henry Beston, for instance, who for a year lived a simple, Thoreauvian life on Cape Cod, says that we need "perhaps a more mystical concept of animals." We are remote from universal nature, we live by "complicated artifice," and we have a distorted view of nature. We need to view the animals as our "brethren" and not as "underlings."[72] Beston's year on the beaches taught him that creation is here and now, still going on, and that man is a part of this "endless and incredible experiment." It also teaches him reverence and that "Poetry is as necessary to comprehension as science. It is as impossible to live without reverence as it is without joy."[73]

Roy Bedichek, the Texas naturalist, has little to say directly about the nature writer,[74] but he does have some pointed comments on man's loss of his sense of relationship to the natural world. He finds evidence of that loss in the farming practices of modern man. He says that farming has been "warped away from an understanding sympathy with the animal world and into an education in the utilization of mechanical forces." There is educational gain as far as the pure intellect is concerned, "but there is a loss on the emotional side which tends to dehumanize those involved in the work." In other words, he is a farmer rather than Thoreau's man on the farm. Bedichek realizes that we cannot retreat, but he does think that some kind of compensation can be gained by education of the young in natural history studies, the purpose of which would be "to preserve some sparks of that emotional sympathy," not just for domesticated animals but for the whole animate world. Says Bedichek, "The 'loves' in the human heart brought to flower by the domestication are a precious link joining us to

the lower animals which we can ill afford to lose."[75]

Louis J. Halle, Professor of political science and one-time employee of the State Department, also finds something lacking in modern man. Specialization has taken away our ability to see things whole; as a result, Halle says, specialization will destroy us, for he finds this inability to see in foreign affairs (his field) just as he finds it in science or any other field.[76] Spring in Washington is a record of his attempt to see things whole; what he observes teaches him that all life is one.[77]

For Aldo Leopold, who worked most of his life for the conservation of natural resources, the specialization in scientific knowledge of this century has left the "average citizen" out; he "does not need it so badly as he needs some understanding of the living world."[78] Although Leopold does not say it, the nature writers interpret the scientific fact concerning the natural world so that the "average citizen" can understand it. What Leopold calls for through that understanding is a sense of harmony with the land, the development of what he calls a Land Ethic.

Hal Borland, journalist and nature writer, likewise writes about "a way of thought and life that is both literally and figuratively firmly rooted in the soil of this earth" in a time when, because of technology, much of mankind "seems obsessed with impermanence and rootlessness."[79] Borland's "way of thought" takes in the idea that man does not belong in apartments, for he has no roots there. Without roots, there is no security and probably no sense of identity.[80] His roots, of course, are in nature.

A prolific writer, Edwin Way Teale, says that great nature writing grows, in part, out of the writer's attitude toward nature. He

must adopt the viewpoint that Gilbert White adopted in The Natural History of Selborne. He must be devoid of condescension and seek to see clearly; arrogance must be replaced with "a fellow-feeling for all the natural world." Man must be "a part rather than a spectator of the great parade of life."[81] It is the outlook of the nature writers that gives their work a lasting quality. In recent years, says Teale, nature writers have been interested in "presenting the complete picture," or ecological relationships between living creatures. Man's relationship to nature is never ignored in the best writing. Because of the nature writer's subject and his reasons for treating it as he does, he must be "a rare mixture of scientist, philosopher and poet."[82]

Another excellent nature writer, and conservationist, Sigurd F. Olson, says that his writing is "interpretive of the natural scene, drawing from it deeper and profounder ideas than merely observation might indicate."[83] In his autobiographical Open Horizons, Mr. Olson tells of his struggle to become the writer that he is, to arrive at "an interpretation of the land and an emotional involvement that was more than knowledge or superficial enjoyment."[84] Success comes when he is finally able to express what he had always wanted to say:

> I have discovered I am not alone in my listening, that almost everyone is listening for something, that the search for places where the singing may be heard goes on everywhere. It is part of the hunger all of us have for a time when we were closer to nature than we are today. Should we actually hear the singing wilderness, cities and their confusion become places of quiet, speed and turmoil are slowed to the pace of the seasons, and tensions are replaced by calm.[85]

With that statement, he had set down the main idea for his first major work, The Singing Wilderness. Mr. Olson's statement reflects the necessity of modern man's feeling a harmony with nature such as that

in which Thoreau found satisfaction. However, it should be stressed that, to Olson, despite man's increased technological advances, he cannot completely divorce himself from nature's all-pervading influence or sever his roots in nature.[86]

As shown, modern nature writing has as its distinguishing characteristic the fact that it discovers this identity between man and nature. It should be pointed out, however, that the difference between the identity which Thoreau felt and that which the modern nature writer feels is that with the latter it is more a material and less a spiritual identity than with the former.[87] Ironically, after the time of Thoreau, who established the genre, man began to lose the sense of balance of both the material and spiritual identity with nature which Thoreau had found necessary for man's spiritual well-being. It is such an identity which today characterizes the subject matter of the best nature writing.

The alienation of modern man from nature has no doubt resulted, in part, from the rapid development of scientific knowledge after Thoreau's time. As scientific knowledge became more specialized, the nature writer saw a greater need for writers who could generalize about scientific matter. As a result, they have found their position somewhat difficult to maintain, on the one hand being rejected by the scientists as popularizers of science and on the other relying necessarily on scientific knowledge and becoming, in fact, interpreters of science. They are somewhat in the position of Walt Whitman who wrote of the scientists in Song of Myself,

> Your facts are useful, and yet they are not my dwelling,
> I but enter by them to an area of my dwelling. (ll. 491-492.)

Perhaps, as some of the nature writers suggest, the lack of identity with nature results in some way from the inarticulateness of the scientists in the modern period. Early in the century Theodore Roosevelt called for a scientific book which laymen could read, understand, and appreciate: "The greatest scientific book will be a part of literature; as Darwin and Lucretius are."[88] According to Peattie, what the scientists find out is common property which should be made easily available to all, but only a few have the ability to make their knowledge understood by the public. Thus, "their interpreters must be wide awake, and wake up the rest about these matters."[89]

They must set about discovering the relationship of man to nature, perhaps in some way bringing about both the emotional and intellectual recognition of that relationship necessary for spiritual or mental health. In praising Peattie, Mark Van Doren described the method by which the nature writers go about fulfilling their roles. He said that Peattie always looked at things

> against their broadest backgrounds, in order to see them with the clearness he desires. And his achievement as a writer consists in having learned how to place his reader likewise in a large world--large, and at the same time swarming with detail, dense with more life than we shall ever know how to catalogue.[90]

Yet, the nature writers do not have a missionary spirit although their work may even at times smack of propaganda. They write for themselves as well as for mankind. As Burroughs said in Signs and Seasons, "Man can have but one interest in nature, namely, to see himself reflected or interpreted there, and we quickly neglect both the poet and philosopher who fail to satisfy, in some measure, this feeling." What the nature writers produce they offer as Thoreau did his

Walden, trusting "that none will stretch the seams in putting on the coat, for it may do good service to him whom it fits."

NOTES

[1]C. P. Snow, "The Two Cultures," New Statesman, LII (October 6, 1956), 413-414.

[2]C. P. Snow, The Two Cultures: And a Second Look (Cambridge, England, 1964), p. 69.

[3]Ibid., p. 100.

[4]I. I. Rabi, "Scientist and Humanist: Can the Minds Meet?" The Atlantic Monthly, January, 1956, p. 65.

[5]Ibid., p. 66.

[6]Ibid., p. 67.

[7]William Beebe, The Book of Naturalists (New York, 1944), p. 89.

[8]Ibid., p. 90.

[9]Ibid., p. 87.

[10]Rabi, "Scientist and Humanist: Can the Minds Meet?" p. 66.

[11]William Beebe, "Design for a Naturalist," Forum, CI (May, 1939), 275.

[12]Beebe, The Book of Naturalists, p. 88.

[13]Donald Culross Peattie, The Road of a Naturalist (Boston, 1941), pp. 274-275.

[14]Ibid., p. 275.

[15]Donald Culross Peattie, An Almanac for Moderns (New York, 1935), p. 199.

[16]Donald Culross Peattie, Flowering Earth (New York, 1939), p. 29.

[17]Ibid., p. 162.

[18]Rachel Carson, The Sense of Wonder (New York, 1965), p. 82.

[19]Loren Eiseley to Daniel F. Littlefield, Jr., June 12, 1969.

[20]Van Wyck Brooks, From the Shadow of the Mountain: My Post-Meridian Years (New York, 1961), p. 21.

[21]Donald Culross Peattie, A Book of Hours (New York, 1937), pp. 201-202.

[22]Ibid., pp. 102-103.

[23]Peattie, The Road of a Naturalist, pp. 311-312.

[24]Ibid., p. 313.

[25]William Beebe, Edge of the Jungle (New York, 1921), pp. 274-275.

[26]Ibid., p. 294.

[27]Loren Eiseley, The Immense Journey (New York, 1957), p. 11.

[28]Ibid., p. 27.

[29]Ibid., p. 181.

[30]Ibid., p. 210.

[31]Joseph Wood Krutch, The Best of Two Worlds (New York, 1953), p. 13.

[32]Ibid., p. 151.

[33]Joseph Wood Krutch, "A Kind of Pantheism," The Saturday Review of Literature, June 10, 1950, p. 32.

[34]William Beebe, The Log of the Sun (Garden City, New York, 1906), p. vii.

[35]Ibid., pp. 10-11.

[36]Ibid., p. 65.

[37]William Beebe, Jungle Peace (New York, 1918), p. 68.

[38]Peattie, An Almanac for Moderns, p. 287.

[39]Ibid., p. 291.

[40]Ibid., p. 292.

[41]Peattie, A Book of Hours, p. 43.

[42]Ibid., p. 44.

[43]Ibid., p. 67.

[44]Ibid., p. 116.

[45]Ibid., p. 119.

[46]Peattie, Flowering Earth, p. 172.

[47]Ibid., pp. 5-6.

[48]Ibid., pp. 12-13.

[49]Ibid., p. 21.

[50]Rachel L. Carson, The Sea Around Us (Revised ed., New York, 1961), p. vii.

[51]Ibid., p. 30.

[52]Ibid., pp. 28-29.

[53]Joseph Wood Krutch, The Twelve Seasons (New York, 1949), p. 114.

[54]Ibid., p. 115.

[55]Ibid., pp. 116-117.

[56]Ibid., p. 118.

[57]Ibid., p. 119.

[58]Ibid., pp. 123-124.

[59]Ibid., p. 125.

[60]Ibid., p. 126.

[61]Ibid., p. 177.

[62]Ibid., p. 178.

[63]Ibid., p. 179.

[64]Joseph Wood Krutch, The Desert Year (New York, 1963), p. 180.

[65]Ibid., p. 266.

[66]Ibid., p. 268.

[67]Joseph Wood Krutch, The Best of Two Worlds (New York, 1953), p. 159.

[68]Ibid., p. 164.

[69]Ibid., p. 171.

[70]Eiseley, The Immense Journey, p. 13.

[71]Ibid., p. 178.

[72]Henry Beston, The Outermost House: A Year of Life on the Great Beach of Cape Cod (New York, 1962), p. 25.

[73]Ibid., pp. 220-221.

[74]Roy Bedichek, Adventures with a Texas Naturalist (Austin, 1961), p. 185.

[75]Ibid., p. 98.

[76]Louis J. Halle, Spring in Washington (New York, 1963), p. 199.

[77]Ibid., p. 197.

[78]Aldo Leopold, A Sand County Almanac (New York, 1966), p. 192.

[79]Hal Borland, Homeland: A Report from the Country (Philadelphia, 1969), p. 7.

[80]Ibid., pp. 35-36.

[81]Edwin Way Teale, ed., Green Treasury: A Journey Through the World's Great Nature Writing (New York, 1952), pp. x-xi.

[82]Ibid., p. xii.

[83]Sigurd F. Olson to Daniel F. Littlefield, Jr., May 15, 1969.

[84]Sigurd F. Olson, Open Horizons (New York, 1969), p. 175.

[85]Ibid., p. 188.

[86]Ibid., pp. 108-109, 216.

[87]Joseph Wood Krutch, "A Kind of Pantheism," p. 34; "'Communion with Her Visible Forms,'" The Nation, CXLIV (April 24, 1937), 469.

[88]Theodore Roosevelt, The Letters of Theodore Roosevelt, ed. Elting E. Morison (Cambridge, Massachusetts, 1952), V, 290.

[89]Peattie, The Road of a Naturalist, p. 292.

[90]Mark Van Doren, "A New Naturalist," North American Review, CCXLIV, No. 1 (September, 1937), 167.

CHAPTER III

NATURE WRITING AND MAN'S SPIRITUAL DILEMMA

Chapters I and II have pointed out certain facts relevant to a discussion of man's spiritual dilemma in the twentieth century. First, by the time the generation of writers treated here produced their major works, the shock of Darwinism on Western thinking had subsided. Most intellectuals had adjusted or readjusted their religious views to accommodate Darwin's ideas in one form or another. They accepted the fact that man, like all the other life forms, is a product of a long evolutionary process, sometimes orderly, sometimes accidental. Second, any personal philosophy at which a man arrives concerning his spiritual condition must take into account his concept of his relationship to the universe. When the scientific knowledge of Western man was slight and his view of the universe simple, he found it less troublesome to find a satisfying personal philosophy than he does in the twentieth century, which has behind it two and a half centuries of an ever-accelerating development of scientific knowledge. Modern man has, in effect, found himself in a kind of spiritual void left over from what Henry Adams saw as the great shift from Medieval unity to twentieth century multiplicity and chaos.

Ironically, at a time when man has been given the knowledge by which, from one point of view, he might understand his proper

relationship to the rest of the universe, he has begun to feel alienated not only from nature but also from his fellow man. Thus, many in modern times have become lost and have felt that all of modern society is a spiritual wasteland. However, the nature writers have been among those who have been able to arrive at personal philosophies which have enabled them to escape a deep sense of isolation, and some of them seem to have escaped it altoghether. Their success is indicated in what they achieved through their writing: a discovery of man's close relationship to nature and his necessary recognition of that relationship, both emotionally and intellectually. Hence, there is William Beebe's enthusiastic, yet careful, observation and his sense of identity with the "lower" forms when he takes a mouse's-eye view or a bird's-eye view of nature. There is Peattie's enthusiastic affirmation of Life. There is Krutch's steady movement away from his early pessimism to "a new kind of pantheism," by which he can live, satisfied. And there is Rachel Carson's sense of man's relationship to the ebb and flow of cosmic forces which are just as real as the tides of the oceans she loved. Finally, there are Sigurd Olson's "feel of the land," Henry Beston's sense of "elemental things," and Loren Eiseley's insistent probing into the mystery surrounding man's past and its meaning for man in the present. These writers are truly awake to nature. They are not Thoreau's "sound sleepers." They have heard his hound, have heard the tramp of his bay horse, and have found his dove that disappeared behind a cloud. They have been open to and have received Emerson's "influx of spirit."

Since matters of spirit are personal, many nature writers have not chosen to share their views with the public. John Kieran, for

instance, says that he drew much from nature in secret that he is reluctant to admit in public. He asks, "Shall a sober citizen break down and confess how deeply he is stirred by such foolish things as 'the rift of dawn, the reddening of the rose'?"[1] Others choose to talk about the spiritual condition of modern man generally, and still others write of their personal beliefs. From the work of the first group the reader can perhaps safely draw some general inferences, but he can most safely deal with those who have written directly, and most frankly, about the matter. It is interesting to note, however, that generally the fewest direct statements on the matter come from the practicing scientists: Beebe and Carson have said very little; Eiseley, however, has said considerably more. On the other hand, Peattie and Krutch have had a great deal to say. But they all have one thing in common: whatever personal philosophies they have developed by which they find life satisfying, they have developed them from their discovery of their identity with the rest of nature. Therein they differ from that part of modern mankind that is demoralized and wandering in spiritual chaos or that other portion of modern mankind that has chosen the cold alternative of a complete faith in science.

William Beebe

Although William Beebe wrote little directly concerning his personal philosophy, one cannot miss the enthusiasm Beebe has for his study of nature or the sense of awe and wonder with which he approaches it. He found that all was process, that the finale was buried in the future, and he had sensed that "all of cosmic possibility" was lying "just concealed in the future."[2] He does not philosophize

upon the matter as Peattie or Krutch; here he simply touches on it without risking any conjectures. But "cosmic possibility" seems here to mean to Beebe the answer to the riddle of existence. Sensing it was just ahead, he kept going in his study of the wonders of the natural world. Too, it suggests that he sensed something beyond the physical world. Perhaps Beebe was simply not sure about the "cosmic possibility," for in a later essay, "The Life of Death," he describes the process by which insects destroy a felled Etaballi tree. He says that "the substance of the Etaballi, translated into the bodies of the borers, was resurrected into spider, lizard and bird." The whole episode is baffling to Beebe:

> Science, Religion, Philosophy--how clear all these would be if we could solve this one mystery. I had hoped for some faint clew to the meaning of it all. I left my tree for the last time certain only of the profound inadequacy of my human mind.[3]

This sense of baffled wonderment never left Beebe. It pervades the entirety of his work. One senses in Beebe's words an affirmation of the process of Life, to which most of the nature writers come when the inadequacy of the human brain fails them concerning the "cosmic possibility."

Donald Culross Peattie

A good number of the essays in Donald Culross Peattie's An Almanac for Moderns deal with his personal (mainly religious) philosophy; Peattie particularly treats the difficulties of maintaining that philosophy in the face of what he observes in nature and in the face of what scientist tell us about the beginnings of life and the purpose of man's existence. In the third essay of the book Peattie says that the

only philosophy "with a shadow of realism about it" is one based on nature. But how can one base his thought in nature and wear a happy face? "To say how that might be, well might he talk the year around."[4] And Peattie does, in effect, talk about it throughout his writings during the next year (he has one essay for each day). He refutes determinism generally and especially the idea of the divine plan for life and puts his faith in nature itself. The following is an account of Peattie's philosophy as he presents it.

As Peattie points out, Aristotle believed in spontaneous generation. Now we know that life comes from life. It is like a circle: "Wherever you pick it up, it has already begun; yet as soon as you try to follow it, it is already dying."[5] But Aristotle's theory traced an ascendency in life up to man according to increasing intelligence. He used the simile of a piece of marble that is just matter until the sculptor shapes it and gives it form and, therefore, soul. So all living things were more or less filled with soul. "Thus existence has its origin in supreme intelligence, and everything has an intelligent cause and serves its useful purpose," i.e., the development of "higher planes of existence." Aristotle thought science would expose the "cosmic design, all beautiful."[6] Averroës, a Spanish Arab born in 1126, rejected Aristotle's simile of the marble's being given life, unless the outlines of the statue were in the stone at the quarry; he therefore adopted a theory of preformed life as the tree is preformed in the seed, etc. And Galileo, peering at the stars, saw nature's imperfections and said that science could not discover what the forces of nature are but only how they operate.[7] Peattie says that Aristotle's theory of everything serving a useful purpose as part of the great design can be

shown with something like grass. But what use is man? Nature would go on without him, and "the universe is hostile and deathy [sic] to him save for a very narrow zone where it permits him, for a few eons, to exist."[8] What Aristotle meant by soul is that which distinguishes life from nonlife. And it is not his fault that he failed to give us "the true picture of things. It is Nature herself, as we grow in comprehension of her, who weans us from our early faith."[9]

Peattie later reinforces this last idea: nature as an argument against a divine plan. He says, "The extravagant and precarious exaggeration. . . of symbiosis" seems to argue against a divine plan. The disharmonies of nature are too often ignored by those who formulate such theories. "But grant but a single teleological explanation in biology, and you have left the path of scientific thinking. Plan there may be, but only a working plan, a vast experimentation still in course."[10]

Then Peattie comes to a conclusion that he arrives at periodically in this work--i.e., a belief in nature. "Whatever rudiments of religion are innate in me are what ordinarily pass as pantheism, though I am not really prepared to worship anything." He says that he "could take oaks as seriously as a druid," but he draws the line at idolatry of animals and is therefore "not exactly an animist." He could easily worship a madonna or any symbol of woman and child; but, he says, "I do not like symbols as well as I like the thing itself. . . . A man's real religion is that about which he becomes excited. . . ."[11] In other words, Peattie wants the real thing--Nature--about which he can become excited. However, it is not a romantic excitement. For instance, he notes that herons are beautiful from afar, but they are

actually foul when seen at close range. He goes on to say that anyone who loves birds at all times is a hypocrite:

> There is a great deal more stingo, more savor and bite in Nature if you do not try to love everything you touch, smell, hear, see or step on. The disgust which near encounter with a heronry awakens in me is part of heronness, an ingredient of the whole, that with trailing leg and probing bill, makes up the virtue and staying power of the idea of Heron in my mneme.[12]

Much of Peattie's philosophical discussion turns around the conflict between the mechanists and the vitalists. He says (in 1935) that there are three theories of the origin of life--divine creation, spores from outer space, and spontaneous generation--all of which are supported by the scientists and which are unproved and create mysteries to be solved. Peattie rejects the idea of a Creator because of the "disharmonies and tragedies, the loss and wastage of that which might have grown full straight and brought the world more swiftly to the spiritual goals."[13] The mechanists argue that there is no essential difference between living and dead matter except degree. Many have no trouble accepting the idea of spontaneous generation. Pasteur helped disprove them by showing that a sterilized medium never gives rise to any living matter. But they argue that the conditions were different from what they are now at that geologic time when life began on this planet.[14] As shown in Chapter II, Peattie could not accept the theories of the mechanists concerning what life is.

To Peattie, mechanism and romanticism are closely related in philosophy. Though not a mechanist himself, he says

> that if to be a mechanist is to seek the mechanical explanations of the way life functions, then every biologist should be a mechanist. Beyond a doubt life does function through physical mechanism. Common sense and every scrap of evidence confirm it.[15]

Vitalism, on the other hand, "has taken up the attitude that life is not only unknowable, but that, as Thoreau felt, to investigate it is somewhat irreverent and destructive of beauty and morality." The struggle between the two theories results from the personalities and temperaments of the men in scientific history. "The old mechanism was frigid, the new is iconoclastic; the old vitalism was superstitious and pietistic, the new metaphysical and lost in exclusive terminology." One's emotional nature determines which he will fit into or whether he will stay outside them both.[16]

The mechanist found support among the ranks of the exact sciences and men disposed toward them. His main purpose is "reducing all to simple causes." "Opacity of life" is his only obstacle, and he feels certain that he can clear it up. The vitalists now have a good point in warning against simplification. "Many, not a few, explanations are needed to explain any vital phenomenon. . . ."[17] The mechanist also feels that life is "only a special way of putting inanimate matter into a system"; if life is only "a random or chance system that happened to 'work' or perform the life processes, then we ought to see fragments of such systems that didn't quite work, lying about in Nature." He thinks that he can see them in carbon rings. But the vitalist is not swayed by these facts. He says that products of plants and animals are not a part of life and that their imitation is not life. "Things have all the characteristics of life, or they have none of them," he says, "and it seems to me that, up to the present, this argument is unanswerable."[18] Peattie had earlier showed his agreement with this statement by pointing out the great gulf which exists between the bacterium and the carbon atom. Though he agrees in part with the vitalist, he really

puts himself outside the pale of both theories. He says that it may be natural for man to look for a first cause of natural phenomena that some poets and mechanistic scientists believe in, but a far nobler thing to Peattie is the ability to suspend judgment--"for your whole life time, if necessary; to observe without the will to believe some particular thing or the intention of proving some preconceived idea." According to Peattie, this is the stand every modern man and scientist must take.[19] It is the one he took.

Peattie's awareness of the passage of time had evidently brought him to another conclusion about himself. He cannot see, as the physicists do, a time of ultimate inertia. "Biologically considered, man is the sole being who has its destiny in its hands."[20] He says that man's hope is in himself,

> and when I say it I do not deny that God may be the font of all resource man finds within himself. But any one who has read this far will know how little I would lean upon that chill God in which the physicist finds it easy to believe.[21]

The reader must bear in mind that Peattie is sorting from his experiences with nature what he considers his personal philosophy. Therefore, the reader can perhaps forgive Peattie if he has not here admitted the possibility of philosophies other than his rather grim pantheism and the "chill God" of the physicist.

Peattie finds it lonely not to believe. He cannot see perfection where others do. If he believes in predeterminism, then there is no need for further scientific investigation.[22] "When man begs that he may find a Mind Behind It All, he is only asking that God shall be made in man's image."[23] Instead, "Man is a result of the past, not the purpose of it" as the Designists say. A good answer to them is conditionalism, "a view of life that sees all phenomena as due to multiplicity of

circumstances concurring." One value of conditionalism is "that it explains the multiplex and highly adaptive nature of life's history" and "easily accounts for all the disharmonies, imperfections and the unfinished look of life's experiments."[24] Peattie shrinks from the term conditionalism, but he does believe in what it stands for--"the historical view of biology." However, he still insists that he does not want to search for a First Cause. He likes the fact that the historical view does not lead to self-satisfaction but to "a bracing discontent." It reminds us how new we are and gives us free will. "On the biological side, instead of closing the subject it opens up questions."[25]

Peattie's ultimate conclusion seems to be that man can be happy and see beauty in this life without a belief in a purposive design.[26] As he later does in A Book of Hours, he places his faith in Life, "a law in itself." To him, something is either alive or it is not. No matter how one analyzes a thing, he cannot find life itself. It is "an ineffable, like thought."[27] He sees man's existence as a kind of terror which he must face and which he can find an answer to in his religion. But he comes back to the question he asked at the beginning of the book: how can he base his faith on Nature when nothing in nature is certain, all is change? Also, life is cruel to some men. Man's time is short; he is mortal. Peattie's answer is that a man is happy in proportion to his gratitude to life:

> I say that it touches a man that his tears are only salt, and that the tides of youth rise, and having fallen, rise again. Now he has lived to see another spring and to walk again beneath the faintly greening trees. So, having an ear for the uprising of sap, for the running of blood, having an eye for all things done most hiddenly, and a hand in the making of those small dear lives that are not built with hands, he lives at peace with great events.[28]

The reader who takes time to piece Peattie's philosophy together may conclude that he, like Whitman, contradicts himself. Well, he may. But what contradictions are there probably result from the various theories of life from which he draws his beliefs. They may also result from the apparent agony which Peattie suffered in arriving at his conclusions. He regrets that he cannot believe some mechanistic theory of existence which he feels offers too simple an explanation for the complexity of life. What he observes in nature denies a divine purpose for man's existence. As a result, he moves to a belief in life in which he can, though lonely, find some satisfaction and happiness, even though his satisfaction may be modified by a great degree of stoical endurance.

A Book of Hours is in many ways an affirmation of Peattie's belief in Nature and in Life. He is not, even there, without moments of doubt. Once, while watching a flock of swifts and reflecting on their "gentle, considerate law of the flock," Peattie for a moment thought that there was nothing for the modern mind to believe in, especially in the face of world conditions at that time: "economic determinism, dialectal materialism, the divine right of Aryans, the armed right of Japanese, the indecent might of spawning."[29] But he is reassured by the faith that Nature continues, "that the world that rolls into darkness rolls out of it again, and that, above the sooty pit we live in, light comes to the zenith, and thence descends to earth."[30]

Peattie reaffirms his faith again in a later essay. Gazing at the stars, he realizes that their power and distance from man are actually beyond his comprehension. Whether that should make him humble and afraid is doubtful. Science, like art, interprets Nature by reducing it

to laws, but that interpretation is not Nature itself. The reality of what science tells the common man in this case should not be disturbing because he knows, "no matter what the metaphysician tells him, that when he dies the light of the stars will not go out for lack of himself to entertain them in his consciousness." Peattie adds,

> If there are planets outside the solar system, it is probable he will never see them. If there is life beneath the clouds of Venus, he will not know it. No, it seems to him that the play of man will be enacted only on these boards, this warped and dusty and glamorous stage, set with the changing backdrop of the geologic ages. Haltingly and impromptu he reads his lines. He has no audience but himself.[31]

This is a rather grim view, and it seems that Peattie loses his faith even in Nature here. The reader will remember that he vacillated between belief and non-belief in Nature and Life in An Almanac for Moderns. What he is stressing here, of course, is man's being alone as the only conscious creature in the universe. It is for that reason that he puts his faith in man when he can find nothing else in which to put it.

Peattie's strong belief in science and in man was presented in Chapter II. His ultimate purpose in A Book of Hours becomes one of affirmation of Life. Throughout the work, he reveals the joy and enthusiasm he finds in living; it is that joy which in each case overcomes his tendency to be bitter or clinical about man's predicament. He says that "life is that energy that will try anything and, eventually, will have tried everything, even those schemes of things that we call beautiful and reasonable."[32]

In the essay "Protoplasm--the Body of Life" from Flowering Earth, Peattie investigates the makeup of the mysterious stuff of life and some of its peculiar characteristics such as selective permeability.

But he cannot say exactly what it is in protoplasm that makes it life, so he says, "Say that life is all these things--a colloid, a gigantic protein molecule, a versatile shift of solute and gel, a fleeting bubble."[33] When something dies, "Something--we still know not what--has fled the walls of the house." And if, he says, it occurs to one that protoplasm "touches the finger of universal and immortal power, science will not gainsay you. It will not gainsay you."[34]

But, again, the reader should beware of reading divine purpose into Peattie's statement; for, just as in An Almanac for Moderns, in The Road of a Naturalist he maintains that he is not "a confident moralist reading in Nature's gospel a text from which to preach heavenly purpose." Nor does he see "the wild as a garden benignantly planted. All that. . . is 'out'; it never was good science, and it is trite now even with the unscientific."[35] Peattie evidently sought nature in some part as a refuge, and part of his thinking here was formed by the ethnic clashes he witnessed in his Chicago neighborhood. He reveals how, after one incident, he

> grudged man any place in Nature at all. Nature was the other, the unhuman, the beloved. It was the waterfall that, white and incorruptible, leaped from my distant mountain-top; it was the blue space over the rolling crests into which my thoughts took flight in longing.[36]

To him Nature is more than "a refuge from human chaos"; it is, rather, "the common way of living, and as such it is our touchstone."[37] But it is not a touchstone for sentimentality. "To be sentimental would, in Nature, be suicidal; if there is no compassion in it, neither is there any persecution. You cannot find in Nature anything evil, save as you misread it by human standards."[38]

Nature is, "in its most timeless sense," his religion.[39] The timelessness of Nature is important to Peattie because it is basic to his belief in Life which he put forth so well in A Book of Hours. He says, "So that if life is what you believe in, life essential and ultimately unknowable, you have evidences everywhere that it must prevail."[40] The death of Peattie's young daughter brings him to the realization that he must take death into account in his philosophy. He writes,

> One thing is certain: the naturalist's business is with life, and since death is a part of life, he should be willing to face the question of life after death and try to answer it according to his science. If mine will not provide me with a philosophy able to endure the shocks and tests of our common lot, then it is not worth the years it cost me to acquire it.[41]

He thinks that those who can believe the promises of the church are fortunate, but he cannot accept those promises because he must base his faith on something he can observe in this world. Hence his love of science because it shows him the continuity in Nature, i.e., Life. So he comes to a belief in a kind of biological immortality:

> Heredity is a cord which runs without a break down the ages, while the individuals are but beads strung upon it. The beads, brought into existence by a rapturous instinct, inevitably fall from the cord at last, by inexorable law. The cord alone remains, and is greater than any one bead, or the sum of all the beads.[42]

Peattie goes on to state his belief in the survival of personality,[43] using his mother and young daughter as examples. He cannot say with scientific certainty that his daughter, for instance, is nowhere except in his heart. But he sees her in "all things little and gay and innocent."[44] And in a Whitmanian vein he concludes,

> Life, it would seem, is at its old trick of escaping, changing, transmuting into some other shape an imperishable element. At least, what is gone does not, either to my reason or my instinct seem really gone. I offer this evidence for what it is worth to you.[45]

Peattie's last statement here may indicate that he recognized some difficulties the reader might have in making the views expressed above coincide with what he had previously said. His earlier insistence on limiting his faith to something he could observe in this world does not seem in all respects to agree with his views on survival of personality, and his belief in the transmuting, "imperishable element" is as hard to believe logically as other faiths. Perhaps he, like Whitman, is large and contains multitudes. But somehow, as modern men, we cannot smile at Peattie's predicament as we can at Whitman's. We recognize in his pages the agony of a sometimes trial-and-error process of attempting to find a satisfying personal philosophy based on the knowledge his scientific training had given him. We know that that agony is akin to the agony felt by many modern men.

As indicated here and in Chapter II, Peattie had a great deal of faith in science but did not suggest making it a new religion. He embraced it, rather, because it revealed life to him. It also told him that the "immutable order of Nature is on our side. It is on the side of life. For life is a particular case of Nature." For reasons that he could not believe in God, Peattie could believe in the order of Nature:

> That order is not inscrutable; it invites to exploration like a beautiful corridor. But this leads not into a labyrinth like the Minotaur's--a tortuous whim of madness where dark things are done--but into a vast, an infinite temple. Man is born into the order; he is always a part of it, and whatever indignities he suffers, that order cannot be outraged.[46]

Peattie did not define what he meant by <u>order</u>. It was certainly not order as Darwin explained it; and Peattie would probably not have called any disorder "apparent." He perhaps meant by <u>order</u> the continuing <u>process</u> of nature.

Peattie escaped both the metaphysical dilemma posed by a view of nature such as that of Melville and the metaphysical void posed by that of Ernst Haeckel. Instead of replacing religious faith with a faith in science, he embraced science as a tool by which the order of nature becomes scrutable and by which the one thing Peattie found everlasting--life--can be better known, although it may not be understood. Science to him, then, became the builder rather than the destroyer of a personal philosophy.

Joseph Wood Krutch

Unlike Peattie, Joseph Wood Krutch is a philosopher, and his comments on modern man's spiritual condition are less personal but in most ways more pessimistic than Peattie's. He traces the development of his personal philosophy and has much to say about man's spiritual condition in his autobiography, More Lives Than One. A review of what he says there will be valuable as an over-all view of his philosophy before one analyzes his individual works.

Krutch says that he early took his stand with science against religion and recorded his views on the matter in The Modern Temper (1929).[47] But by the time Krutch wrote the preface for the 1956 edition of that work, he had changed his views. He found that educated people still believe "that science has exposed as delusions those convictions and standards upon which Western civilization was founded," and that the ultimate cause of the catastrophe facing that civilization is a loss of faith in humanity and that people sought refuge from their spiritual dilemma in atheistical Existentialism or experimental psychology. Krutch stands by his description of the modern temper as he described

it earlier, but his attitude toward it has changed. He does not now find the situation as hopeless as he did then.[48]

He feels that he had really formulated his new position in The Measure of Man (1954). There he had accused Darwin, Marx, and Freud of robbing man of his self-respect through their expression of the accidental element of man's evolution, of dialectical materialism, and of behavioral psychology. Although he accepts part of what they say, he cannot accept man as a mere machine. He says we are lost unless we can believe in what he called a Minimal Man who must on occasion "reason rather than merely rationalize," exercise some sort of will and choice, and make value judgments. He finds it unfortunate that the nineteenth century opponents of mechanism argued for the "soul"; Krutch finds a better argument on the basis of consciousness.[49]

He says that present day physics tells us that Newton's laws are only "statistically true." He writes, "Individual atoms are not predictable; and to assume that so highly organized a creature as man is more completely determined and predictable than dead matter is absurd." He defined the difference between living and dead matter as follows:

> Dead matter is matter organized in such a way that the unpredictability of the individual particles is statistically canceled out so that Newtonian physics 'works' in connection with every large aggregate. But living matter may be matter so organized that the individuality of the component atoms is pooled and, hence, instead of being canceled out, is cumulative.[50]

If this is true, he continues, then the basic unpredictability of the living creature, especially man, "constitutes, in fact, the reality behind the concept of free will."

He finds that philosophy has tended to become logical positivism and has tended to dismiss as meaningless those questions "science cannot seem to answer or promise to answer." Even "imaginative literature tends to become sociology and psychology instead of dealing with the intangibles which have, in the past, been its chief concern." Krutch says, as Eiseley does, that since man began to think conceptually, he has concerned himself with the "great questions arising out of the fact that he had indeed become Man."[51]

Today, Krutch says, there is a tendency to no longer ask the questions since we seem no closer to the answers than before, and we are urged to become Homo faber instead of Homo sapiens. Because Krutch once accepted man as Homo faber, "less happily but hardly less completely" than so many of his intellectual contemporaries, he wrote The Modern Temper. But he can now no longer accept it.[52] He urges that we become aware of the Minimal Man:

> This may be our last chance. If we do not resolve now to think rather than merely contrive, and to will rather than merely to submit ourselves to "the logic of evolving technology," we may never think again.[53]

Upon publication of The Measure of Man, Krutch was asked why he did not go further. One writer could not understand why Krutch could not take the "logical next step" to Roman Catholicism. "But I had gone far as I could go," he says, "and though I have elaborated in other books some of the ideas merely suggested in The Measure of Man it is as far as I have been able to go. I doubt that I shall ever be able to go further." Krutch is somewhat satisfied; what he has found is "something sufficient to live by." He concludes, "At least I have lived by it for some years now more contentedly than I had been able to live before."[54]

Much of the change in Krutch's philosophy evidently came from his new interest--nature writing. At the time he wrote his first Connecticut "nature book" he had thought of himself "as simply a writer of familiar essays who was, for the moment, finding his subjects in country life." He says that all of his nature books "have been, in varying degrees, travel books and descriptive accounts of unusual natural phenomena somewhat belletristic in tone." They have either directly discussed or "circled around" what he calls "the large questions provoked by an effort to understand nature's far from simple plan and man's ambiguous relation to the universe as nature makes and controls it" and "dealt with what we know and do not know" and "with the pleasures to be had in close contact with many of the lesser living creatures." Finally, they have dealt

> with the problem we face when we realize that man, the most efficient predator, and the only creature capable of upsetting the established order and balance of nature, is rapidly exploiting the whole earth so exclusively for his own benefit that it is easy to see not very far ahead the possibility that he will be almost alone in a world he himself has made.[55]

Krutch continues that in his nature books he has implied if he has not stated the conviction that "since man has become, for the first time in history, capable of cutting himself off from his deepest roots he should think twice before he does so."

The awakening in Krutch began when he realized from living in the country in Connecticut "that there was something very positive in a consoling, indeed a quasi-mystical sense, of being a part of something larger than myself or my society." He says, "I took pleasure in knowing that living things, in various forms both like and unlike me, were sharing the world with me." So in the last chapter of The Twelve

Seasons he stated his new conviction: that in the country he is permitted to be continuously aware that he is alive, a fact which the city makes most people forget.[56] His tendency toward the new position he stated in The Measure of Man becomes evident from an analysis of The Twelve Seasons.

In "May: A Question for Meloë" Krutch notes the disorder and confusion in nature. He suggests that it does not operate according to "any well-thought-out scheme" and has no "planned economy." He can understand how the astronomers see God as a mathematician, but he says,

> The God who planned the well-working machines which function as atom and solar system seems to have had no part in arranging the curiously inefficient society of plants and animals in which everything works against everything else.[57]

Perhaps Krutch has overstated the case here, but he is stressing the fact that much of life is chaotic. He thinks that if God did make the world of atoms and suns then perhaps, unexpectedly, life accidentally occurred, bringing "multiplicity upon unit, disorder upon order, conflict upon balance." He sees in the society of living things "an anarchy in which events may work themselves out to this conclusion or that--but over which no unity of purpose seems to preside."[58] The Meloë, a beetle, is his prime example. The adult lays about ten thousand eggs which hatch into little lice sic that wait on stems of plants for a flying insect to come along. The lucky one climbs aboard an Anthophora bee which lays its egge in a pool of honey. The louse sic climbs onto an egg, floats on it until the egg is consumed, and then changes into a larval form that can survive in the honey. Once in five thousand times the improbable circumstances are right, and Krutch says the system is not a very sensible one. It is enough to make any theist ask God:

"Look here--whose side are you on, anyway?" Krutch sees here a "prodigious amount of Schopenhauer's Will" and "precious little" of Idea, and he wonders, then, if there is "some real connection between Meloë's predicament and ours."[59] As Krutch sees it, philosophies of life, schemes of ethics, and political programs fall into two classes--those that follow nature and those that do not. Following nature would produce chaos, yet he wonders if man can separate himself from Nature, by developing a planned economy, and survive.[60] To modern man, Krutch may seem to have regressed and indulged in "nostalgia for an earlier stage of culture" by moving from the city to the country, but he thinks that Meloë has a better chance of survival than man who has taken his destiny into his own hands. Therefore, he feels that his preoccupation with nature gives him a form of escape from anxiety and gives him a sense of joy in life "which is not ordinarily ours."[61]

Thus, modern man is confronted with a dilemma: he must either base his beliefs on nature and face the possibility of chaos or he must base them on the unnatural world of his own making. But man belongs to nature, and Krutch finds the latter alternative much more dangerous than the former. As he progresses in his development as a nature writer, Krutch becomes more and more concerned with the relationship between the living (especially man) and the nonliving.

In "December: First Snow" he says that the

> snow, so coldly and so inhumanly beautiful, seems a counterattack from the inanimate, an effort to wrest this globe from the things which live and to return it to its place among the lifeless celestial spheres, one of which it presumably once was.[62]

Man seems ineffectual in the face of it, but "of all natural beauties, the beauty of snow is the one which man's touch most inevitably destroys."

When the world is hidden under the snow, Krutch finds a good time for contemplation, and he suggests that "the man who boasts that his common sense is continuous and unassailable" rise on a snowy, moonlit morning when the moon is waning. The moon has a strange effect and gives him a "vague sense that the phenomenon is somewhat unnatural, as though one of the heavenly bodies had gone astray." He concludes:

> There is certainly no lonesomer hour and no more eerie sight. A dead, white earth; a perfect stillness; and a strange, abnormal moon. At such a moment anything might happen. Or, what may seem even worse, nothing at all might happen--ever again.[63]

In "January: God's Great Owl" Krutch continues his discussion of snow, seeing in it a beauty which is its own excuse for being. He says that

> the snowflake cannot be intended for anything. It serves no purpose, it is not observed--not even by another crystal of ice. It is proof that inanimate Nature, by the very physical laws of her being, creates comeliness and symmetry; . . . winter serves to remind us that the world would be beautiful even though there were no consciousness, no awareness, which could ever acknowledge that it was.[64]

Krutch considers himself less transcendental than the average man:

> No voice has ever spoken to me in unmistakable, unambiguous terms. I have never simply "felt" that anything was and must be absolute true. . . . A stubborn rationality has always had for me the last word.[65]

However, he admits that silence, solitude, and snow provide the conditions under which he seems most open to transcendental communication. By such communication he means "the half conviction that one has been spoken to by, or that one has to some extent penetrated into the meaning of, something which is neither self nor anything like the self."[66] He related one instance when he felt on the verge of communication. But an owl's hoot interrupted. Krutch writes, "The communication from space was never received. Sometimes I wonder whether God, the

only time He ever began to speak to me, was interrupted by one of His own owls."[67]

In "March: An End and a Beginning" Krutch cites T. H. Huxley, who urged his contemporaries to follow nature no matter where it leads. If man does not follow nature, Krutch sees his alternatives as God-who-is-not-Nature or Man-who-is-not-Nature. He says,

> What we have actually done as we have built cities and tended to lead more and more exclusively urban lives is not to turn toward either the God-who-is-not-Nature or the Man-who-is-not-Nature but to busy ourselves and identify ourselves with that part of the natural world which is not alive rather than with that part which is. What we have tended to become is not either the Humanist or the Worshiper but quite simply the mechanic and the technologist. We have forgotten the beast and the flower not in order to remember either ourselves or God, but in order to forget everything except the machine.[68]

Then Krutch comes back to his original argument: that there is a "meaningful opposition between that part of Nature which lives and that part which does not." Of the two, it seems almost that the nonliving is the more orderly and dependable and that the beginning of life was the introduction of the willful, the unpredictable, the random:

> It is a rebellion against law and probability, an intrusion--perhaps spontaneous and anarchical--into what would otherwise have been a system, perfect in its neatness and regularity. Perhaps it was only an accident, perhaps by now it is opposing itself even to Him. And if that is so, then it may be the most stupendously incomprehensible accident that ever happened since endless time began to run.[69]

Krutch feels that man has had to decide whether he will have his "chief business"with the living or the nonliving and that he has made the wrong choice: "We have chosen to have our most intimate association with machines, not with fellow creatures."[70] As man becomes isolated more and more from the living, he faces the danger of becoming more like machines, his thoughts growing colder and his emotions weaker.[71]

Krutch thinks that perhaps we have gone too far to turn back, but he feels that he has established some communication with life and that what he has done must count for something:

> Perhaps I am merely straining my ears to hear the last faint sounds of a receding music which, soon, no one will ever again hear at all. If so, then so be it. It is something to have been able to do even that.[72]

If, in The Twelve Seasons, Krutch had not yet committed himself fully to nature, he certainly does it in The Desert Year. He makes clear what he wishes to get out of his relationship with nature. He says

> I am not sure that I want to be so exclusively aware of either myself or the All in the colorless essence of either. To put it in a dignified way, I prefer to live under the dome of many-colored glass and to rest content with the general conviction that the white radiance of eternity has something to do with it. To put it more familiarly, what I am after is less to meet God face to face than really to take in a beetle, a frog, or a mountain when I meet one.[73]

He says that Wordsworth and Thoreau both realized that it was something lacking in them and not in nature that caused the "light of common day" to be no more than common; and he thinks that their way of describing awareness is the best, whereas Pater's is the worst, because they realized that the rare moment was not that time when there was something worth looking at but that when one was capable of seeing.[74]

In "From a Mountaintop" Krutch states the necessity of man's periodically retiring from the world in order to gain a distance by which he can put man in perspective or in his real context; without such context "philosophy and religion degenerate into sociology," which lacks the context of nature and of human nature, "for which it tries foolishly to substitute some mere observations of human behavior." He rejects the sociologist's idea that the central problems of man are

those of technology and politics.[75] To accept that idea makes us forget that the question of the "good Life" deals not with institutions but with human beings. The question "What is Man?" is more important to Krutch than "What is just social order?"

In The Best of Two Worlds Krutch deals with man as a contemplative animal. He says, however, that man finds it difficult to be such and that man must consciously do something in the hope that "this doing will hypnotize him into the state which makes contemplation possible."[76] Some people think the act is the important thing while others, "having reached a realization of what it is they are looking for, lose it again in their absorption with the methods."[77] Krutch finds truth in nature and gives much of nature its existence through his contemplation of it. He says that if a God made the universe for His own delight, then it makes no difference except to ourselves whether we contemplate the universe, but unless we are sure of God, then "we ought to do our best to be conscious of a world which otherwise nothing might ever be conscious of."[78] He thinks that perhaps contemplation is the most important thing we are capable of and that perhaps it is our true end. He feels that the philosopher and poet, whose job it was to show how beautiful life is, have been replaced by the technicians, whose job it is to make life more convenient; hence, a loss of the sense of beauty in the world. Krutch, however, finds more in the world to be contemplated than can be contemplated, and too much beauty and joy for one to take in. Although the reader notes in all of this some mellowing in Krutch since he wrote The Modern Temper, some of the pessimism of that book remains.

"The Colloid and the Crystal" presents an idea that Krutch often writes about--the relation of the living to the nonliving, the difference between the crystal structure of the snowflake and the colloid of protoplasm. The beauty of the crystal existed before and apart from life. It infallibly follows fixed laws, while the laws governing life are not fixed. Movements of the stars can be predicted; those of life cannot. Life is rebellious.[79] And Krutch says that man should fear the nonliving more than death, for the psychologist and the philosopher tend more and more to think of man as a creature who obeys laws rather than one who follows his will.

Krutch's discovery of nature and what it has to teach seems to have taken him by surprise.[80] It might have been that discovery which turned him away from his early pessimism, for in The Best of Two Worlds, as in many of his others, one finds an optimistic tone at times. He has discovered that the laws of nature do not always work infallibly or economically, but he prefers those laws, with their uncertainty and the marvels they can create, to the fixed, immutable laws of the nonliving world. The Best of Two Worlds is written with the zest of a man who is filled with the joy of living and who wants to make each day as long as he can by living it to the fullest. He has found the best of two worlds: the knowledge that the man-made world can give him and the mysteries that the natural world provides. Thus, he comes essentially to the point that Peattie comes to--to an affirmation of his belief in Life.

Krutch concludes his commentary on The Best of Two Worlds by writing,

> any pantheistic religion must have some sense of the oneness of man with the rest of the universe or at least with the animate part of it, but the Hebrew-Christian tradition is strong against such a sense.[81]

Late Renaissance Christians, he says, "reintroduced into the modern consciousness a sense of oneness." The "wonders of God's creation" for a time

> became the chief support of theism against atheism until Darwin, with one book, seemed to brush it away. Thus we are thrown back again upon some kind of pantheism as the only alternative to a concern with the human alone.[82]

Rachel L. Carson

As opposed to Krutch, Rachel Carson wrote little concerning her personal philosophy. But like the other nature writers, she found something spiritually satisfying in nature. In The Sense of Wonder she asks, "What is the value of preserving and strengthening this sense of awe and wonder, this recognition of something beyond the boundaries of human existence?" Its value does not lie in being a pastime during childhood. It goes beyond to

> something much deeper, something lasting and significant. Those who dwell, as scientists or laymen, among the beauties and mysteries of the earth are never alone or weary of life. Whatever the vexations or concerns of their personal lives, their thoughts can find paths that lead to inner contentment and to renewed excitement in living. Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts. There is symbolic as well as actual beauty in the migration of the birds, the ebb and flow of the tides, the folded bud ready for the spring. There is something infinitely healing in the repeated refrains of nature--the assurance that dawn comes after night, and spring after the winter.[83]

Like Beebe, Carson offers no conjectures concerning what that "something lasting and significant" might be, but she obviously expresses

here a belief in the processes of nature and life similar to that expressed by those writers considered thus far.

Loren C. Eiseley

Dr. Loren C. Eiseley, though he has considerably more to say about his personal philosophy, makes no statement as overt as Krutch's statement about pantheism. Eiseley expresses a belief in a "mysterious shadow world beyond nature," a world which contains, if anything does, the explanation of life. Although he does not believe in divine direction in the evolution of man, he does feel that the peculiar circumstances of man's evolution made possible man's religion, his belief in a noumenal world, his establishment of values. The concept of both a physical and a spiritual world was an inevitable result of his unique development. It began ages ago when man became aware of himself and "crossed over" from the animal to the human world. He was becoming "a dream animal--living at least partially within a secret universe of his own creation and sharing that secret universe in his head with other, similar heads." The results were varied. "The unseen gods, the powers behind the world of phenomenal appearance, began to stalk through his dreams."[84] Men became individuals; therefore, in loneliness, they must suffer "time and darkness, knowledge of good and evil."[85]

Dr. Eiseley finds the spiritual condition of modern man much the same as other nature writers find it. In a lecture called "How Human Is Man?" he finds that the whole Western ethic is undergoing a change "increasingly toward conformity in exterior observance and, at the same time, toward confusion and uncertainty in deep personal

relations."[86] With the coming of man there developed "a vast hole" in nature. The "ancient sounds of nature" were "drowned in the cacophony of something which is no longer nature" as man created "another nature"--custom or culture, in which he sought a replacement for "the lost instinctive world of nature" and "a new source of stability for his conflicting erratic reason."[87] In the West, the "whirlpool" in which modern man finds himself began with the development of the new science, which ironically began as a search for the earthly Paradise, which, over the last three centuries, has become identified with technological progress. Technology moved man beyond his second "nature," the cultural world, to one without art, manners, love, or the ability to see beauty.[88] Western scientific achievement "has not concerned itself enough with the creation of better human beings, nor with self-discipline." It has concentrated upon things, and in its wake we find that we have abandoned the past. Without the past, the future becomes meaningless, a "world of artless, dehumanized man."[89]

Dr. Eiseley finds this progress rooted in the Christian ethic, and, citing Berdyaev, he says that it was Christianity which "took God out of nature and elevated man above nature." But with the development of science, "the struggle for progress ceased to be an interior struggle directed toward the good life in the soul of the individual." Instead, attention was turned to "the power which man could exert over nature."[90] Progress became secularized. Therein lies the danger for Eiseley:

> Since in the world of time every man lives but one life, it is in himself that he must search for the secret of the Garden. With the fading of religious emphasis and the growth of the torrent, modern man is confused. The tumult without has

> obscured those voices that still cry desperately to man from somewhere within his consciousness.[91]

Man has lost control over himself, says Eiseley. He is like the alcoholic who said to Eiseley, "I can't help myself." Eiseley calls for a reevaluation. He warns man to beware of replacing the personal ethic of the individual with the group ethic, and he does not ask that we reject science but simply that we realize that it is not enough for man. "It is not the road back to the waiting Garden, for that road lies through the heart of man."[92]

In another essay "How Natural is 'Natural'?" Dr. Eiseley says that the "dislocation of our vision" is "the product of the kind of creatures we are, or at least conceive ourselves to be."[93] Eiseley agrees essentially with Pascal that there is nothing we cannot make natural and that there is nothing natural that we do not destroy. Like Krutch, Eiseley says that man must be more than Homo faber.[94] We must not forget that nature is "one vast miracle transcending the reality of night and nothingness." We must not forget "that each one of us in his personal life repeats that miracle."[95]

Dr. Eiseley tells how he freed a pheasant from the coils of a snake. He concludes his lecture by analyzing his reasons for the action. He says that in man there is no such thing as wisdom; man has difficulty grasping that fact because of his power. Eiseley agrees with Kierkegaard that there comes a critical moment when we begin "to understand more and more that there is something which cannot be understood."[96] He did not separate the snake and the bird for knowledge's sake. He had "transcended feather and scale." He "was trying to give birth to a different self whose only expression lies again in the deeply religious words of Pascal, 'You would not seek me had you not

found me.'" Eiseley says that he had not known what he had sought but that he was aware that something had found him: "I no longer believed that nature was either natural or unnatural, only that nature now appears natural to man." But those things man thinks natural are only "appearances, specialized insights, but unreal" because they are swept away in "the constantly onrushing future." Eiseley says that man "stands at the point where the miraculous comes into being, and after the event he calls it 'natural.'" He adds that man's imagination "stands close to the doorway of the infinite, to the world beyond the nature that we know." Man is therefore equipped to find certainty by finding meaning, but he is prevented by doubt:

> the power to make everything natural without the accompanying gift to see, beyond the natural, to that inexpressible realm in which the words "natural" and "supernatural" cease to have meaning.[97]

Man now has a choice to make. He can worship "an unbearable last idol" he has created. "That idol, that uncreate and ruined visage which confronts us daily, is no less than man made natural." On the other hand, if man is wise, perhaps there may come to him at some moment "a ghostly sense that an invisible doorway has been opened--a doorway which, widening out, will take man beyond the nature that he knows."[98] At this point, Eiseley seems to be on the verge of a return to a belief in a transcendent God.

Other Writers

Here, as in Chapter II, it is necessary to present the views of some nature writers other than the five treated in this study. Such presentation will give a larger basis for drawing conclusions as well as

indicate the range of personal philosophies which these various men have found consistent with their study of nature.

To Sigurd F. Olson, the problem confronting modern man is to "face the ecological crisis aware that man no longer lives with nature as other creatures but has placed himself above and beyond its control." He adds, "We must develop a philosophy which considers the great imponderables, the ancient codes of ethics embodying man's sense of oneness and dependence on nature." Mr. Olson feels that technology may redress past wrongs, but only if it takes into consideration man's spiritual welfare. He calls for "an ecology of man in harmony with the ecologies of all living things and a recognition of the truth that our search for utopia reflects fundamental human needs."[99] Then Mr. Olson quotes Pierre Teilhard de Chardin, who he says has pointed the way for modern man:

> As a man awakens to a sense of universal unification, everything glows as if impregnated with the essential flavor of the absolute beyond all ideologies and systems to a different and higher sphere, a new spiritual dimension.[100]

Olson, who has worked hard for the preservation of wilderness areas in America, believes that the beauty, harmony, and mystery of unspoiled nature, though not the entire answer, are important facets of man's spiritual recovery.

In the Foreword to the 1949 edition of his The Outermost House, Henry Beston says that on rereading the book, his attention was arrested by the "meditative perception of the relation of 'Nature' (and I include the whole cosmic picture in this term) to the human spirit." He adds,

> Nature is a part of our humanity, and without some awareness and experience of that divine mystery man ceases to be man. When the Pleiades and the wind in the grass are

> no longer a part of the human spirit, a part of every flesh and bone, man becomes, as it were, a kind of cosmic outlaw, having neither the completeness and integrity of the animal nor the birthright of a true humanity. As I once said elsewhere, "Man can either be less than man or more than man, and both are monster, the last more dread."[101]

Two final attitudes toward modern man's spiritual condition might be added. "The discovery of spring each year, after the winter's hibernation, is like a rediscovery of the universe," says Louis J. Halle. It helps him overcome the "problems of the moment."[102] In the twentieth century, says Halle, "What we need is the one word that reveals the Kingdom of God." It is on the tip of his tongue but he cannot say it; yet he can tell us where to look for it: "It is in the world of eternal things, the world that renews its beatitude perennially."[103]

Hal Borland takes on faith the "force behind" nature, "the What, which lies beyond, the inevitability itself."[104] Nature replenishes his faith. The oneness he feels with nature fills him with wonder: "Here is wholeness and holiness, and I partake, knowing that beyond the reasons lies belief."[105]

It is somewhat difficult to draw many general conclusions from the material presented above, for in most ways the philosophies vary from writer to writer--from Peattie's grim pantheism to Halle's Christianity. There are, however, some points of general agreement among most of them concerning man's spiritual condition. First, most reject the idea of man as a part of a divine plan. Peattie's evidence for his opinion lies in what he calls the "disharmonies in nature." Krutch points to the chaos, accident, and waste in the life processes of such creatures as the Meloë and thinks perhaps that life is accidental and represents a rebellion against the nonliving world. Eiseley rejects

Wallace's theory of divine guidance in man's evolution. Second, all reject mechanism. Although Peattie can live without believing some ultimate cause, he cannot accept man as a mere machine. Krutch insists on will in man and attacks the logical positivists whether they are sociologists, psychologists, scientists, or philosophers. Hence, third, all of the writers take their stand for the living against the nonliving. Fourth, at least Krutch and Eiseley agree that man has had spiritual problems as long as he has had conceptual thought, but all agree that the particular problems of modern man result from the development of science and technology during the past three centuries, and all insist that man must be more than Homo faber if he is to regain his spiritual well-being. Fifth, most of the personal philosophies have pantheistic elements in them; both Peattie and Krutch admit their pantheism. Finally, as stated at the beginning of this chapter, the personal philosophies by which these men found life satisfying were founded in their discovery of their identity with the rest of nature. That discovery evidently helped them find peace of mind in a time in which, as Yeats says, "The falcon cannot hear the falconer:/Things fall apart; the centre cannot hold."

NOTES

[1]John Kieran, Footnotes on Nature (Garden City, New York, 1947), p. 266.

[2]William Beebe, Edge of the Jungle (New York, 1921), p. 294.

[3]William Beebe, Jungle Days (Garden City, New York, 1925), p. 165.

[4]Donald Culross Peattie, An Almanac for Moderns (New York, 1935), p. 5.

[5]Ibid., p. 8.

[6]Ibid., p. 9.

[7]Ibid., p. 10.

[8]Ibid., p. 11.

[9]Ibid., p. 12.

[10]Ibid., p. 64.

[11]Ibid., p. 101.

[12]Ibid., p. 169.

[13]Ibid., p. 272.

[14]Ibid., p. 273.

[15]Ibid., p. 328.

[16]Ibid., p. 329.

[17]Ibid., p. 330.

[18]Ibid., p. 331.

[19]Ibid., p. 332.

[20]Ibid., p. 312.

[21]Ibid., p. 313.

[22]Ibid., p. 341.

[23]Ibid., p. 342.

[24]Ibid., p. 343.

[25]Ibid., p. 344.

[26]Ibid., p. 345.

[27]Ibid., p. 393.

[28]Ibid., p. 396.

[29]Donald Culross Peattie, A Book of Hours (New York, 1937), . . p. 18.

[30]Ibid., p. 19.

[31]Ibid., p. 194.

[32]Ibid., p. 170.

[33]Donald Culross Peattie, Flowering Earth (New York, 1939), p. 58.

[34]Ibid., p. 59.

[35]Donald Culross Peattie, The Road of a Naturalist (Boston, 1941), p. 6.

[36]Ibid., p. 63.

[37]Ibid., p. 10.

[38]Ibid., p. 33.

[39]Ibid., p. 195.

[40]Ibid., p. 196.

[41]Ibid., p. 211.

[42]Ibid., p. 212-213.

[43]Ibid., p. 216.

[44]Ibid., p. 217.

[45]Ibid., pp. 217-218.

[46]Ibid., pp. 314-315.

[47]Joseph Wood Krutch, More Lives Than One (New York, 1962), p. 20.

[48]Ibid., pp. 319-320.

[49]Ibid., pp. 321-322.

[50]Ibid., p. 323.

[51]Ibid., p. 324.

[52]Ibid., p. 325.

[53]Ibid., p. 326.

[54]Ibid.

[55]Ibid., pp. 329-330.

[56]Ibid., p. 331.

[57]Joseph Wood Krutch, The Twelve Seasons (New York, 1949), p. 20.

[58]Ibid., p. 21.

[59]Ibid., p. 25.

[60]Ibid., pp. 26-27.

[61]Ibid., pp. 29-30.

[62]Ibid., p. 135.

[63]Ibid., pp. 139-140.

[64]Ibid., pp. 148-149.

[65]Ibid., pp. 151-152.

[66]Ibid., pp. 152-153.

[67]Ibid., p. 154.

[68]Ibid., pp. 181-182.

[69]Ibid., p. 182.

[70]Ibid., p. 183.

[71]Ibid., p. 185.

[72]Ibid., p. 187.

[73]Joseph Wood Krutch, The Desert Year (New York, 1963), p. 38.

[74]Ibid., pp. 47-48.

[75]Ibid., p. 126.

[76]Joseph Wood Krutch, The Best of Two Worlds (New York, 1953), p. 110.

[77]Ibid., p. 111.

[78]Ibid., p. 114.

[79]Ibid., p. 150.

[80]Ibid., p. 156.

[81]Krutch, More Lives Than One, p. 333.

[82]Ibid., p. 334.

[83]Rachel Carson, The Sense of Wonder (New York, 1965), pp. 88-89.

[84]Loren Eiseley, The Immense Journey (New York, 1957), p. 121.

[85]Ibid., p. 125.

[86]Loren Eiseley, The Firmament of Time (New York, 1960), p. 121.

[87]Ibid., pp. 123-125.

[88]Ibid., pp. 125-129.

[89]Ibid., p. 130.

[90]Ibid., p. 138.

[91]Ibid., p. 140.

[92]Ibid., pp. 148-149.

[93]Ibid., p. 158.

[94]Ibid., p. 159.

[95]Ibid., p. 171.

[96]Ibid., p. 177.

[97]Ibid., pp. 178-179.

[98]Ibid., pp. 180-181.

[99]Sigurd F. Olson, Open Horizons (New York, 1969), p. 220.

[100]Ibid., pp. 221-222.

[101]Henry Beston, The Outermost House: A Year of Life on the Great Beach of Cape Cod (New York, 1962), pp. viii-ix.

[102]Louis J. Halle, Spring in Washington (New York, 1963), p. 36.

[103]Ibid., p. 201.

[104]Hal Borland, Homeland: A Report from the Country (Philadelphia, 1969), p. 73.

[105]Ibid., p. 81.

CHAPTER IV

NATURE WRITING: A PLEA FOR CONSERVATION

Chapter III has presented descriptions of the personal philosophies which some of the nature writers have found satisfying and which have, therefore, made their lives more satisfying. The reader notes in their works, as he reads them in chronological order, a process similar to that followed by any other person who struggles toward developing a personal philosophy: the trial-and-error theories, the inconsistencies, the acceptance and then rejection of beliefs, and finally the acceptance of one that is satisfying. But for the nature writer, the problem seems to be made more complex and difficult by the peculiar circumstances of the modern world. The old argument that the spiritual struggle was just as difficult for other men in other times will not quite do today, for modern man has added another dimension to the struggle. Never before has he been as close to physical annihilation--extinction of the race--as he is now. He now has developed both the knowledge and apathy necessary to destroy himself.

As Chapter III shows, technological knowledge is of major concern to most of the nature writers in developing their personal philosophies, which are closely related, of course, to their concepts of man's relation to nature. Peattie, for instance, rejects the mechanistic view of existence that had accompanied the development in science and

technology of the fifty years preceding his most productive years. Of major concern to Krutch is man's relation to the living and nonliving world. He fears the consequences of man's constant retreat into the nonliving world of technology--an artificial world that he has created. Finally, Eiseley takes his stand on the side of the living and chooses the bird instead of the machine.

All of these men have in common a belief in man's close ties to the natural world. To them, man's spiritual well-being depends on his recognition of those ties. On the other hand, they do not deny that technology is necessary, that it is here to stay, or--in some cases--that it is desirable. What they commonly stress is that man must not completely sever his ties with nature. That he can do so becomes more and more a horrifying possibility as population growth makes living space increasingly more scarce. It is therefore with a tone of urgency that they point out the necessity of conserving natural resources and of setting aside wilderness areas, if for no other reason, for museum purposes. In that way they feel that something of the "original" natural world will be preserved so that future generations may go there to renew or reaffirm those ties with nature just as the nature writers--even the urban men like Peattie and Krutch--now must do. By preserving wilderness areas, they hope to counteract some of the harmful effects of technology. The following are analyses of what some of the nature writers have written about conservation and about their reasons for seeking the wilderness.

William Beebe

Early in the century, and therefore early in his writing career,

William Beebe wrote:

> The beauty and genius of a work of art may be reconceived, though its first material expression be destroyed; a vanished harmony may yet again inspire the composer; but when the last individual of a race of living beings breathes no more, another heaven and another earth must pass before such a one can be again.[1]

Beebe's words were a plea for conservation of nearly-extinct life forms, and we must take his last statement as figurative. For as a scientist, Beebe must have known that when a life form vanishes, it vanishes forever. Yet Beebe was not the outspoken conservationist that most nature writers of this century have been, and as was previously indicated, Beebe was not a philosopher about his religious beliefs. In these two ways he differs from most of the later writers.

One should beware, however, of condemning Beebe for not treating the problem of conservation. Just a superficial reading of his essays will reveal the sense of awe which overcomes the nature writers in the face of the beauty and mystery of nature, and that sense is as strong in Beebe in 1906 as it is in the writers of later years. Likewise, in Beebe's work the reader finds an apparent urge to communicate that sense of awe through an interpretation of natural phenomena. Although Beebe did not expend much effort in writing about conservation, he was nevertheless most aware of what man does to nature. In 1906 a great deal of wilderness existed in America, and the idea of conservation of natural resources was relatively new. Yet Beebe makes ominous predictions which history has borne out. By his time, the wolf, bison, and beaver had "fought the battle out at once to all but the bitter end,"[2] and the redwood, he says, "making a last stand in a few small groves of California, awaits total extinction at the hands of the most terrible of Nature's enemies--man."[3] Beebe also predicts

that the sea will become a "last frontier." He writes,

> The time is not far distant when the bottom of the sea will be the only place where primeval wilderness will not have been defiled or destroyed by man. . . . When that time comes, the animals and birds which survive will be only those which have found a way to adapt themselves to man's encroaching, all pervading civilization.[4]

As he predicted, the sea is now perhaps the nearest thing to primeval wilderness that man can know. But less than fifty years after he wrote these words, Rachel Carson pointed out in The Sea Around Us that if man pursued the course he was following, he would pollute and destroy the sea before he could complete his exploration of it. Carson's statement was echoed almost weekly by Jacques Cousteau on his television broadcasts during the 1969-1970 television season. And recent news broadcasts (late 1969 and early 1970) concerning the dumping of atomic wastes into the ocean and the oil pollution off the coasts of Alaska, California, and Louisiana graphically pointed out examples of what these scientists have said. Had Beebe done most of his writing in recent times, it is likely that he would have joined forces with the conservationists.

Beebe sought the wilderness for essentially the same reason that many of the other nature writers sought it: to assuage the ravaged spirit which results from living in modern "civilized" society. During World War I, Beebe was an aviator in France. Tired of the violence and death of war, he sought "some symbol of worthy content and peace,"[5] and for that he turned to the tropical jungle. He wanted to go there not strictly as a scientist, but as an observer, "softening facts with quiet meditation, leavening science with thoughts of the sheer joy of existence." Beebe felt that he could occasionally do that and still "return to science enriched and with enthusiasm. . . ."[6] He realized

that he would become aware of the fang and claw of the jungle and of the struggles that go on there, but in contrast to man's war, this struggle is a natural one. So Beebe set out for British Guiana to establish a jungle laboratory and to find his peace. The result of his stay in the wilderness was a number of collections of excellent nature essays including Jungle Peace, Edge of the Jungle, and Jungle Days.

One notices in all of this perhaps the single constant note which he hears in most twentieth century nature writers: one does not retreat to the wilderness and stay there; he goes there to revive his exuberance and joy for life, to reaffirm his faith in whatever he believes in, to bolster his belief in life. Above all, however, the nature writers are men among men, and they are ultimately concerned with man's problems. The conservationists and wilderness seekers value their momentary retreats into nature and seek to have set aside certain areas, essentially unspoiled, into which future generations of men can retreat for the revival and the reaffirmation, which have made their lives more satisfying. These values they have found in the wilderness perhaps explain why men like William Beebe, Donald Culross Peattie, Joseph Wood Krutch, Louis Halle, John Kieran, and others could be city dwellers and, at the same time, wilderness seekers; but, then, some of these men could find much natural phenomena to write about in the city: Beebe's Unseen Life in New York, Halle's Spring in Washington, and Kieran's Natural History of New York City.

Donald Culross Peattie

As indicated, Donald Culross Peattie was an urban man, and he found much in technology to be admired. That fact, however, did not

mean that he ignored or was unsympathetic to the problems of men living in crowded cities. Neither did it mean that he approved or or was unaware of the harmful effects man had had on nature. Peattie had closely studied the life of John James Audubon, who, as long as a century before Peattie's writings, had expressed a fear that man would upset the delicate ecological balance of the American wilderness and in the process make extinct some species of his beloved birds. Peattie, looking back, could see that man had indeed upset that balance. Some animal species adapted to the change; others did not. And Peattie found something admirable in those that adapted. For instance, in A Book of Hours he says that four o'clock in the morning is a dark hour of silence, "a blank cesura," in which he had not heard a bird call until he heard one in Lincoln, Nebraska. He welcomed the cry of the swift, and as the early morning skies turned grey he watched the bird's silhouette against the sky. He admired the swift which had left the wilderness of Audubon's time to live in peace with man but which had not been "made ridiculous and dirty by contact with him."[7]

Peattie, like most modern men, at times wearies of the modern life and even, at times, has fears of it. At six in the morning, for instance, the mills begin to call the workers. The worker's loss of identity reminds Peattie of his fear of becoming "a numbered man." But he reflects that at the moment of a man's rising, he experiences a glorious freedom in his nakedness, a sense of individuality and identity peculiar only to man. In other words, despite the conditions under which modern man lives and works, there is something reserved--some part of man--that cannot be "numbered." That something, along with what he finds good in modern life, outweighs for Peattie the evils

of the technological world.

Peattie notes that at midnight the city is still lighted. By mechanical means, man has turned night to day and "treats his midnights, at least in cities, like a carnival."[8] Although light, communication, pleasure, and safety may seem "purely material benefactions, and the wealth in them is not of itself conducive to virtue," we must remember that "Science is not necessarily moral any more than art is. Responsibility is chargeable only to those who employ them."[9] While he was writing A Book of Hours, Peattie found that moral responsibility lacking in the Germans and Japanese. He realized that he could easily condemn so-called "civilized" (i. e., technological) man and assume a pessimistic attitude, but he constantly fought off that attitude and in A Book of Hours reaffirmed his belief in mankind.

One way in which he made that reaffirmation was to seek man's company. He had little desire to return to a wilderness state as some naturalists of his time might have nostalgically wished, for he found that civilization had brought with it certain beauties which he would miss:

> There would be no old apple orchards, bent with a century of bearing, hollow of heart where the bluebirds nest. No cockcrow in the mild sunlight, to boast: Peace and plenty and long live the lusty! Neither would the tall weeds be spattered with the flecks of milk dripping from the deep plethoric udders. No pears flung in fermented waste, for the autumn wasps to get drunk in. I should miss the wheat--a burning rim of gold on top of the soft slope, bowing to the wind, harsh and bearded when its spikes are drawn through the palm, running liquid, raising a dust to heaven when the flailing juggernauts go through the field, yielding a mouse harvest when only stubble's left.[10]

One cannot miss the passion or the poetic beauty of this statement. Peattie is not one of the "let's take to the woods" type of naturalist. In

fact, he does not find the city "unnatural or uninteresting, or a rubbish heap of follies." Rather, he says,

> It has always seemed to me that there is something more than mechanically admirable about a train that arrives on time, a fire department that comes when you call it, a light that leaps into the room at a touch, and a clinic that will fight for the health of a penniless man and mass for him the agencies of mercy, the X-ray, the precious radium, the anesthetics and the surgical skill.[11]

Peattie finds beauty in these things. One wonders, however, what revisions, if any, Peattie would have made had he revised this writing at the present: a time of growing interest in the problems of polluted air and water and land, a time when perhaps irreparable harm is being done to the flowering earth that Peattie loved, so that in time it might cease its flowering altogether. It is likely, however, that he would say that man could have clean air, water, and land and the advantages of technology as well.

Like Beebe, however, Peattie found that at times the world was too much with him, and he at times sought nature in some part as a refuge. But it was more than "a refuge from human chaos"; it was, rather, "the common way of living, and as such it is our touchstone."[12] As a touchstone, nature had something to teach Peattie. He enjoyed going to the wilderness, but he also enjoyed going back to mankind and his place in it. He was glad of that place, for "whether in cities or in desert or forest," it is inescapably in nature.[13] Nature generally, and the wilderness specifically, is to Peattie, then, the necessary touchstone, and it served him much as it did Beebe.

Joseph Wood Krutch

Joseph Wood Krutch likewise felt something lacking in his life

when he sought the wilderness of the Southwestern desert. In The Twelve Seasons he had written of the opportunities for contemplation afforded to him during his residence in the country in New England. But the real change in Krutch is recorded in The Desert Year, which deals with his first full year in the desert; the work is a record of his discovery of the desert wilderness and the effects it could have on man's spirit. Four years earlier he had published his Henry David Thoreau, and he owes much of his attitude to Thoreau. He went to the desert for reasons similar to those Thoreau had for going to Walden Pond, and the titles of his first two chapters, "Why I Came" and "What It Looks Like," are like Thoreau's chapter title "Where I Lived and What I Lived For" in Walden. Thoreau went to the woods to confront the essential facts of life so that he would not find when he came to die that he had not lived at all. Krutch tells us in "Why I Came" that he went to live in the desert to get to know it because it had a fascination which he did not understand. He had to find out what called him; otherwise, he says, ". . . I shall feel all my life that I have missed something intended for me. If I do not, for a time at least, live here I shall not have lived as fully as I had the capacity to live."[14] To Krutch the desert's appeal is not that of "things universally attractive," but instead it suggests patience, struggle, and endurance; in its brightest colors there is something austere.[15] Yet in spite of the austerity, he senses a gladness which is partly physical, partly aesthetic, and partly spiritual. Nature corresponds to some mood which he finds in himself; something of himself can be projected upon her visible forms. And Krutch feels that she is expressing something in the desert which she had left unsaid or even unsuggested in his beloved New England. He says, "To try to

find out what that may be is the reason I have come once more to look at, to listen to, and, this time if possible, to be more intimately a part of, something whose meaning I have sensed but not understood."[16]

Generally, Krutch goes to the wilderness for the same reason that most of the nature writers go. He is reevaluating his and man's meaning in relation to the universe, and what he observes in the desert confirms in many cases or reaffirms in others the convictions he holds. He sees the struggle in nature. But in the desert, he sees a struggle, not of one plant against another, but of plants against inanimate nature. Therefore, it enjoys a kind of peace he does not find elsewhere. To him, "The struggle of living thing against living thing can be distressing in a way that a mere battle with the elements is not."[17] The desert also has something to say to Krutch about space. It is uncrowded, and he contrasts the lack of congestion in nature with the overcrowding in the eastern United States. In the desert Krutch feels removed from the struggle of man against man, part of which results from his overcrowded condition. In "What the Desert Is Good For" he says that if the desert is not crowded, "it is not because the human, the animal, or even the vegetable communities have exhibited a superior wisdom. It is merely because, for all of us, the limit is sooner reached." The desert is too dry to allow uncomfortable crowding.[18] In most of the world living space is what gives out first. Krutch wonders if man will become a race of yeast-eating beings with no room to move about; he hopes, rather, that man will reach his limit while he still has room.[19] He thinks perhaps that there is some foreshadowing of ill for the human race because it has produced a "technological jungle" in which too many people can somehow live and where the struggle is no longer one of

man against nature but man against man.[20] Krutch went to the desert, not to get away from people but from too many people.

Krutch makes his most significant statement on conservation and the preservation of wilderness in an essay called "Conservation Is Not Enough," published first in The American Scholar and later in The Voice of the Desert. In his autobiography, Krutch said that in The Voice of the Desert he showed that "there is not adequate motive for any conservation which means more than efficient exploitation except in the feeling that our fellow creatures are indeed a consolation."[21] By the time Krutch wrote The Voice of the Desert he had learned much about the desert. He could see changes taking place in the desert even during the short time he had lived there, most of them due to man who came to the desert in ever-increasing numbers. Around him too were the leavings of other men in other times: imported plant life such as the Russian thistle and the prickly pear, the ruins of old mines, and the wariness or disappearance of larger animals. Man is often unaware of the changes he has wrought, and he is generally unaware of the instability of nature and its possible effect on his future. Few men, says Krutch, think what a small change in rainfall or shift in a flora can mean to future generations, and in the long run "our boasted control of nature is a delusion."[22] Krutch finds that the ignorance of the delicate balance and instability of nature is apparent even in man's attempt to "conserve" the nature he is destroying. A brief analysis of "Conservation Is Not Enough" will show how Krutch stands on the matter of conservation and the value of wilderness.

Krutch begins his essay by commenting on man's relation to nature and particularly on his almost wanton destruction of certain life

forms; he finds that not one man in ten is capable of understanding moral and aesthetic considerations which dictate kindness to our fellow creatures.[23] Although we have undertaken policies to protect some of these forms and to conserve some of our natural resources, we are still using them up, though not as recklessly as we once did. Man's continued ignorance of the balance of nature may result in part from population pressures or greed, but Krutch thinks that there may be "something more, something different, which is indispensable" which has been left out of our education, law, and public works. Krutch thinks that that something is akin to Leopold's Land Ethic--the love for all of nature.[24] He finds that our conservation policy of "enlightened selfishness" cannot be enough because it cannot be extended to include "remote posterity." He says,

> To live healthily and successfully on the land we must also live with it. We must be part not only of the human community, but of the whole community; we must acknowledge some sort of oneness not only with our neighbors, our countrymen and our civilization but also some respect for the natural as well as for the man-made community.[25]

Yet man does not follow this dictum and continues to attempt to substitute his scheme for nature's.

Krutch says that what is commonly called conservation will not work in the long run because it is really a kind of "elaborate scheming, only a more knowledgeable variation of the old idea of a world for man's use only."[26] Instead, man must come to realize that the world is beautiful as well as useful and that without some "love of nature" for itself he cannot solve "the problem of conservation."[27] Krutch says that man has three tigers by the tail--the economic, the physical, and the biological--and he cannot let any of them go. Given this situation,

Krutch asks how man can give up his determination to control nature, how he can learn to love the land, and how he can learn to share it.[28] It is obvious, of course, that man must subdue nature and control it to some extent if he is to survive. At the same time, he must preserve some areas of wild nature so that he can learn to love it, can develop a sense of sharing, and can therefore learn "to live with it." Man's ultimate tragedy, however, may lie in the fact that man will not preserve nature because he does not love it.

Rachel L. Carson

Unlike Krutch, Rachel Carson wrote little about conservation itself. To her, the sea remained the last frontier for mankind. It represented nature in its most uncorrupted form; man still had it to "conquer," to bring under his control. But she noted with alarm how quickly he was spoiling it. She spoke out against man's despoiling the earth and called for the preservation of some natural museums where man might know nature in its purest state. Miss Carson's most pointed comments on the subject appear in "The Birth of an Island." The essay has as much to do with the figurative and literal death of islands as it does with their birth. The population of islands with flora and fauna becomes Carson's most important point. Such life reaches an isolated island by way of sea and air, and there develops on the island one of the most delicately balanced relationships in nature, with much of the life endemic. That balance is upset by the arrival of man, who, according to Miss Carson, "has written one of his blackest records as a destroyer on the oceanic islands. He has seldom set foot on an island that he has not brought about disastrous changes." He has cut, cleared, and

burned, thereby destroying environments; he has brought the rat, and he has turned loose the domestic goats, hogs, cattle, dogs, cats, and other non-native animals and plants that destroy the biota of the islands. As a result, says Miss Carson, "Upon species after species of island life, the black night of extinction has fallen." She follows this statement with a series of startling examples and suggestions that much of the destruction was done out of ignorance and that man might profit from history. But her optimism is clouded at the end of the essay when she says,

> In a reasonable world men would have treated these islands as precious possessions, as natural museums filled with beautiful and curious works of creation, valuable beyond price because nowhere in the world are they duplicated.[30]

But evidence shows that the world is not reasonable. Indeed, in the Preface to the 1960 edition of The Sea Around Us, Miss Carson is much concerned about the dumping of atomic wastes into the ocean. She writes,

> It is a curious situation that the sea, from which life first arose, should now be threatened by the activities of one form of that life. But the sea, though changed in a sinister way, will continue to exist; the threat is rather to life itself.[31]

The preservation of nature is important to Miss Carson, for she feels that man tends to forget in "the artificial world of his cities and towns. . . the true nature of his planet." The ocean represented a kind of wilderness for her. Man can regain a sense of nature when he is on a long ocean voyage and when, "alone in this world of water and sky, he feels the loneliness of his earth in space." The value that nature holds for man is one of the main themes of Miss Carson's The Sense of Wonder. There she calls for another kind of preservation--that of the

sense of wonder which children have in relation to nature. In nature she finds a reserve of strength which helps man endure. "There is something infinitely healing in the repeated refrains of nature--the assurance that dawn comes after night, and spring after the winter."[33] Of course, it is only through a preservation of nature that the preservation of the sense of wonder can be achieved.

Loren C. Eiseley

Like Carson, Dr. Loren Eiseley has had little to say about conservation itself, but his writings do point out some ideas which other writers often fail to note. An important one is that man is still evolving. When the nature writers deal with conservation and preservation of the wilderness, they stress the need for immediate action so that the man of the future may have a chance to feel the necessary relationship of "oneness" with the natural world. But rarely do they take into account the evolution of man. As anthropologist, Eiseley does. In his essay "Man of the Future" he considers what the future possibly holds for the evolution of man. He attacks the vanity of man who reassures himself that the future will make him more nearly perfect. What has characterized man's evolution has been a reduction in the size of the teeth and increase in the size of the skull necessary to contain the enlarged brain. Man naturally expects this tendency to continue as he becomes more intelligent. But to Dr. Eiseley, it is not that simple. He finds that several thousand years ago, there lived in Africa a man with smaller teeth and a larger brain than that of present day man. His descendants now live primitively in the Kalahari. Eiseley also points out other ironies: that compared to this ancient Negroid skull,

the present Caucasian skull "has only a mediocre rating" and that with more brains man has devised better instruments of violence.[34] Perhaps other writers would do well to consider how such evolutionary changes could affect man's relation to nature. Some, no doubt, would write in reply that the destruction and the pollution of nature are occurring at such a rapid rate that the very existence of man is threatened so that he may not survive long enough for such evolutionary changes to take place.

One also finds in the pages of The Immense Journey some ideas shared with the other nature writers. Generally there is an affirmation of life, and Dr. Eiseley takes his stand against those scientists who are attempting to create life in a test tube. He is likewise concerned with technology. In "The Bird and the Machine" he says that machines may get smarter, but there must be man ultimately to run them. He says, ". . . I'll stick with the birds. It's life I believe in, not machines."[35] He finds value in the wilderness, not only intrinsically in the individual experiences he has there but also in the satisfaction it gives to "the human need for symbols." He says that the naturalist spends much of his life alone, and in his individual "patches of wilderness" he undergoes such experiences as Eiseley has written about in The Immense Journey.[36] He suggests that a retreat from the city is desirable but not necessary for such experiences to come to man. After one experience, Eiseley observed that he felt the marvel escaping him. He says,

> It was better, I decided, for the emissaries returning from the wilderness. . . to record their marvel, not to divine its meaning. In that way it would go echoing on through the minds of men, each grasping at that beyond out of which the miracles emerge, and which, once defined, ceases to satisfy the human need for symbols.[37]

Although Eiseley did not do it, one might extend his argument a step further: the wilderness must exist in order for man to record its marvel and in order for it to supply the sumbols man needs. This latter gift of nature to man was a part of Thoreau's meaning in his statement "that in Wildness is the preservation of the World" and in his statement that "Life consists with wildness. The most alive is the wildest. Not yet subdued to man, its presence refreshes him." Those things we find beautiful are beautiful because they have their prototypes in nature: strains of music remind Thoreau of the cries of wild beasts in their native forests and "the wildness of the savage" is symbolic of "the awful ferity with which good men and lovers meet."

Roy Bedichek

The natural museums that Rachel Carson called for in The Sea Around Us are the theme of Roy Bedichek's "Fences: Right-of-Ways." Bedichek notes that highway and railway right-of-ways in many areas of the country come closer than any other to lands representing the land as it originally was because they have been left to grow wild. They have not been farmed or grazed, and one can find there most varieties of flora that originally existed there before man's coming. Although many state highway commissions are becoming more aware of the arboretum value of the right-of-ways, Bedichek feels that much more could be done to preserve such lands as lasting natural museums. With the closing of many railroads throughout the country, he sees a great opportunity for America to preserve some of its wilderness by not letting the right-of-ways revert to or be sold to private owners and by purchasing them as public lands. Bedichek says that through

automobile and train travel we have fed our hunger for natural sights and sounds because of the landscapes such travel offers. But man is taking more and more to the air, and nature becomes "impersonal." "So when we come to travel exclusively by air," says Bedichek,

> the old urge for nature contacts will set in stronger than ever. We have so far merely dabbed in the great business of providing recreational space--parks, sanctuaries, preserves, and the like: a vaster vision is required.[38]

That "vaster vision" must insure the preservation of all available space as natural museums, including highway and railway right-of-ways.

Aldo Leopold

No discussion of the need for conservation and preservation of the wilderness would be complete without an analysis of some essays by Aldo Leopold. Leopold defines conservation as follows:

> Conservation is a state of harmony between men and land. By land is meant all of the things on, over, or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left. That is to say, you cannot love game and hate predators; you cannot conserve the waters and waste the ranges; you cannot build the forest and mine the farm. The land is one organism. Its parts, like our own parts, compete with each other and co-operate with each other. The competitions are as much a part of the inner workings as the co-operations. You can regulate them--cautiously--but not abolish them.[39]

Leopold adds that the outstanding scientific discovery of the twentieth century is "the complexity of the land organisms." Leopold feels that we have not learned much about conservation because we have not yet recognized all of the parts of the land mechanism. We are still concerned with "show pieces," and have not "learned to think in terms of small cogs and wheels."[40]

Leopold makes some very pointed remarks about a solution to our conservation problems. Part of the answer lies in knowledge, a

public awareness of those "small cogs and wheels," but that is not enough. The public must also develop "a refined taste in natural objects." He finds that actually little progress is being made by conservation bureaus. He says that their policy "smells like success," and is satisfactory for poor land which the bureaus can buy. "The trouble is that it contains no device for preventing good private land from becoming poor public land." Leopold reemphasizes his basic thesis: "What conservation education must build is an ethical underpinning for land economics and a universal curiosity to understand the land mechanism. Conservation may then follow."[41]

Perhaps Leopold's best known essay on conservation is one called "The Land Ethic." In it he says that in all of man's ethical development there has not yet developed an ethic dealing with man's relation to the land and the life upon it. Our relation to it is still strictly economic. To Leopold, developing a land ethic is an ecological necessity.[42] Such an ethic "simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land." It "changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such."[43] The usual answer to the growing ecological crisis, says Leopold, is "more conservation education." He agrees, but suggests that there is something lacking in the content as well as in the volume of education.[44] However, to improve the content of that education means a change from land-use ethics governed wholly by economic self-interest to "an internal change in our intellectual emphasis, loyalties, affections, and convictions."[45] Although Leopold finds

governmental practices in conservation lacking, he admits that it is proper and logical and that some of it is inevitable. He spent his life working for it. However, a conservation program based solely on economic self-interest will not do. What we need is a "mental image of land as a biotic mechanism" as an ethic to supplement and guide the economic relation.[46] Such an ethical relation to the land cannot exist "without love, respect, and admiration for land, and a high regard for its value." By value Leopold means "something far broader than mere economic value," but rather "value in the philosophical sense." Unfortunately, he finds that our educational and economic system is headed away from rather than toward the land ethic.[47]

Of course, that educational and economic system results in part from the condition of the technological world. Leopold urges the preservation of wilderness areas to help insure the mental and spiritual well-being of future generations who must inevitably live in a technological world. He writes in his essay "Wilderness": "This is a plea for the preservation of some tag-ends of wilderness, as museum pieces, for the edification of those who may one day wish to see, feel, or study the origins of their cultural inheritance."[48] Again, however, the prospects for true conservation seem dim, for as Leopold says, the ability to see the cultural value of wilderness depends on intellectual humility. He says that "the shallow-minded modern who has lost his rootage in the land" thinks he has already found what is important. But, says Leopold,

> It is only the scholar who appreciates that all history consists of successive excursions from a simple starting-point, to which man returns again and again to organize yet another search for a durable scale of values. It is only the scholar who understands why the raw wilderness gives definition and meaning to the human enterprise.[49]

Sigurd F. Olson

Another man who has spent much of his life working for the preservation of wilderness areas is Sigurd F. Olson. Without what Olson calls his "vast complex of treasured experience," the work of preserving all wild creatures in their native habitat might not have been as vital to him were his "dreams not haunted by their beauty."[50] Those experiences resulted from his work as a guide during his youth in the wilderness regions of Minnesota and Canada. The rigorous life as a wilderness guide satisfies certain physiological needs of man, and because Olson has experienced the fulfillment of them, he can understand what wilderness can mean to young men today.[51]

A less tangible result of his guiding experience was that he learned to appreciate the silence. In recent years he experienced it also in the Sonoran desert, but quietness is harder and harder to find as our senses seem to become blunted by the noise of the technological world. To Olson, "the loss of quiet in our lives is one of the great tragedies of civilization, and to have known even for a moment the silence of the wilderness is one of our most precious memories."[52]

The wilderness also provides a sense of unlimited time and space. A sense of the latter has come to Olson most often when he was on the lakes of the far north or the rolling Arctic tundras or was looking across mountain ranges or the open sea. Airplane travel can provide this sense, but it usually is lost because in that instance man is removed from naturalness.

> In the wilderness and on the ground the old sensations are there for the simple reason that this is the way man has

> always known them. There is no other way, nor short cuts or artificial viewpoints. A man must see it as he has always done.[53]

The wilderness "must be preserved as a retreat for harried mankind in a world hurtling toward what seems to be complete divorce from the past."[54]

Olson's study of ecology taught him other values of the wilderness. He found a richness that comes from knowing one's environment and the sense of continuity or understanding that others do not have. He also found the joys that

> come from simple and natural things, mists over meadows, sunlight on leaves, the path of the moon over water. Even rain and wind and stormy clouds bring joy, just as knowing animals and flowers and where they live.[55]

Having learned a love for the land from the wilderness, Olson devoted much of his energy toward preservation of wilderness areas, particularly the Quetico-Superior region, the struggle for which has been a long, hard one. He also fought for the Indiana Dunes National Lakeshore, Point Reyes National Seashore, the Everglades, the Redwoods, the Grand Canyon, and the Cascades National Park. Despite the efforts of Olson and men like him, the mechanized world is invading even the wilderness areas. Olson tells of an incident in which the spell of the northland's silence was broken for him by the drill of a mining company searching for ore deposits. He says, "The world needs metals and men need work, but they also must have wilderness and beauty, and in the years to come will need it even more." He wonders if man in his new civilization can afford to lose again and again to progress, if he has the right to deprive future generations of what he has known.[56]

In "Landscape of the Universe" Mr. Olson looks to the future. He describes the noisy and polluted technological world, to which he says man might adjust more easily if he did not have a "racial consciousness steeped in a background that knows nothing of technology." Because we are conscious of our ancient ties to the earth, tensions and a sense of instability develop.[57] And because of this advanced technology we have arrived at an ecological crisis which threatens our existence. If man is to survive, says Olson, he must develop a new philosophy, "the ancient code of ethics embodying man's sense of oneness and dependence on nature."[58] Though not the way to the whole of the new philosophy, wildness is an important facet of it that "can never be forgotten in surveying man's relationship to the universe."[59] But developing the new philosophy will be difficult. Before the land can be safe and man can restore what has been despoiled and protect what is left, he must place emphasis on "humanitarian values that affect the welfare and happiness of all" and must "realize that the real dividends lie in the realm of the imponderables."[60] In other words, he must rid himself of what Krutch called the policy of "enlightened selfishness." America is indeed fortunate to have men with the writing skill and foresight of Sigurd Olson. Because of his efforts, perhaps something has been saved for posterity. Perhaps in fighting for the preservation of wildness, he has also fought for the preservation of the world.

The writers treated in this chapter feel their relation to nature with an intensity little known, if known at all, by most men. They feel the necessity of retreating, some momentarily and some permanently, from the world of technology and through such retreats renew their ties with nature and reaffirm their faith in life. They are likewise

humanitarians; they are distressed at the thought that future generations may know very little of the natural world that they have known. Therefore, they have expended much effort in calling for conservation generally and for establishment of natural preserves specifically to insure that man does not "use up" the natural world. But they know that man must change his thinking so that he welcomes the chance to preserve a part of nature for its own sake. Whether man can go beyond "conservation" or "enlightened selfishness" as Krutch has said he must or whether he can develop a "land ethic" as Leopold has said he must is questionable and perhaps even doubtful. To do so, he must overcome a sense of apathy resulting, probably, from his not feeling an immediate danger. If he does not overcome that apathy, it may well be that one day those wilderness areas now set aside--if they withstand the ravages of progress--will be the only areas of relatively untouched nature left on the face of the earth. Since man is a natural creature, he must (and probably will) maintain his contact with nature. It is not likely that those preserves now set aside can adequately serve the needs of mankind in an overpopulated world.

NOTES

[1]C. William Beebe, The Bird: Its Form and Function (New York, 1906), p. 18.

[2]William Beebe, The Log of the Sun (Garden City, New York, 1906), p. 117.

[3]Ibid., p. 305.

[4]Ibid., p. 117.

[5]William Beebe, Jungle Peace (New York, 1918), p. 3.

[6]Ibid., p. 4.

[7]Donald Culross Peattie, A Book of Hours (New York, 1937), p. 17.

[8]Ibid., p. 184.

[9]Ibid., pp. 186-187.

[10]Ibid., p. 118.

[11]Ibid., pp. 187-188.

[12]Donald Culross Peattie, The Road of a Naturalist (Boston, 1941), p. 10.

[13]Ibid., p. 310.

[14]Joseph Wood Krutch, The Desert Year (New York, 1963), p. 5.

[15]Ibid., p. 9.

[16]Ibid., p. 11.

[17]Ibid., p. 23.

[18]Ibid., p. 88.

[19]Ibid., p. 89.

[20]Ibid., p. 95.

[21]Joseph Wood Krutch, More Lives Than One (New York, 1962), p. 335.

[22]Joseph Wood Krutch, The Voice of the Desert (New York, 1955), pp. 131-132.

[23]Ibid., p. 191.

[24]Ibid., pp. 192-193.

[25]Ibid., p. 194.

[26]Ibid., p. 199.

[27]Ibid., pp. 200-201.

[28]Ibid., pp. 204-205.

[29]Rachel L. Carson, The Sea Around Us (Revised ed., New York, 1961), p. 93.

[30]Ibid., p. 96.

[31]Ibid., p. xii.

[32]Ibid., p. 30.

[33]Rachel Carson, The Sense of Wonder (New York, 1965), pp. 88-89.

[34]Loren Eiseley, The Immense Journey (New York, 1957), pp. 128-136.

[35]Ibid., p. 181.

[36]Ibid., p. 164.

[37]Ibid., p. 178.

[38]Roy Bedichek, Adventures with a Texas Naturalist (Austin, 1961), pp. 12-25.

[39]Aldo Leopold, A Sand County Almanac (New York, 1966), pp. 176-177.

[40]Ibid., p. 179.

[41]Ibid., pp. 180-187.

[42]Ibid., p. 218.

[43]Ibid., pp. 219-220.

[44]Ibid., pp. 222-223.

[45]Ibid., pp. 224-225.

[46]Ibid., pp. 229-230.

[47]Ibid., p. 239.

[48]Ibid., p. 242.

[49]Ibid., pp. 255-256.

[50]Sigurd F. Olson, Open Horizons (New York, 1969), p. 34.

[51]Ibid., p. 101.

[52]Ibid., p. 104.

[53]Ibid., p. 107.

[54]Ibid., pp. 108-109.

[55]Ibid., p. 170.

[56]Ibid., p. 210.

[57]Ibid., p. 215.

[58]Ibid., p. 220.

[59]Ibid., p. 223.

[60]Ibid., p. 224.

CHAPTER V

NATURE WRITING: THE LITERARY ACHIEVEMENT

The preceding chapters represent analyses of the stated intent of the nature writers and some of the themes they have treated in their essays. Those chapters, in effect, are a definition of man's relation to nature in the twentieth century as the nature writers see it. There remains the problem of analyzing the manner in which they have presented that definition. The following chapter, then, will be an assessment of their literary achievement, although some indication of that is already apparent from the citations from their works up to this point. It would be impossible in one chapter to analyze every aspect of their works; therefore, the emphasis here will be on various elements of language and structure in the works with the purpose of lending strength to the nature writer's claim to a place in American literature.

Good studies of English prose style are scarce. However, an excellent one is Herbert Read's English Prose Style. He describes prose "as a mode of expression which avoids regularity of measure and seeks the utmost variety of rhythm."[1] The act of writing prose, he says, is an activity of dispersion of impressions which have been stored in the memory (whereas poetry is an activity of condensation). A good prose style is hard to maintain. Few writers are consistently themselves or are consistently good. It is interesting, although it

proves nothing here, that one man who is consistent, according to Read, is the American-born English nature writer, W. H. Hudson.

Read sets about analyzing the elements which have been characteristic of the best prose stylists in the literature of the English language. He finds that the good stylist chooses words for their quality of sound (onomatopoeia, alliteration, and euphony), of associations or connotations, and of currency and congruity. Second, he finds a judicious use of appropriate epithets (those necessary to further the meaning). Third is the use of illuminative metaphors and an avoidance of the simply decorative. Interestingly, Read says that the illuminative metaphor is used most effectively in scientific prose, which is not ordinarily metaphorical. Fourth, the prose writer achieves an effective style through the various qualities of the sentence--length, rhythm, and structure. Finally, there are the requirements of structuring ideas through the paragraph and, for the essay, the intuitive arrangement of the materials in the entire piece of writing. Beyond these characteristics of composition, Read finds the characteristics of rhetoric: exposition, narrative, fantasy (fancy), imagination or invention, impressionism, expressionism, eloquence, and unity.

There will be no attempt here to apply all of Read's criteria to every essay or collection of essays. Instead, the purpose here is to apply as many of them as necessary to representative works by each writer in order to arrive at some conclusions concerning each writer's typical achievement. Therefore, the emphasis will be on the elements of style, and the discussion based on the assumption that the subject matter of the essays is interesting. The assumption is a safe one, for what can be more interesting to man than man? If Read is correct that

an interesting subject matter handled in a good prose style is the basis for defining literature, then the following analyses should justify the statements of the nature writers analyzed in Chapter I, specifically, that they are writing literary pieces, not scientific tracts.

Limitations of space prohibit an analysis of the works of every nature writer mentioned throughout the earlier chapter, although they are all excellent writers. However, the reader can judge their abilities as writers to some extent, at least, from the passages cited. The following, then, will be analyses of some works by the five writers whose essays have received most attention above: Beebe, Peattie, Krutch, Carson, and Eiseley. Again, limitations of space prohibit treatment of all of the essays in each work. However, those analyzed have been chosen to show the range of the writers.

William Beebe

William Beebe's first significant work of nature writing was Jungle Peace, which first appeared in September of 1918 and went through five printings during the rest of that year and through ten more before 1930. Eight of the eleven essays had appeared in The Atlantic Monthly. For the modern reader, Jungle Peace is a striking contrast in achievement to his earlier work, just as it was a contrast for his contemporary readers. In a foreword to the volume, Theodore Roosevelt refers to Beebe's earlier work as "commonplace," and an examination of The Log of the Sun (1906), for instance, reveals a work full of exuberance and enthusiasm that sometimes degenerates into whimsy. Jungle Peace, however, is generally a soberer, more even work presented in a vivid, often metaphorical style which he achieved

only momentarily in his earlier works. Perhaps his success here is due in part ot the maturation of the scientific mind (Beebe was by that time forty-one years old) and to the sobering effect of World War I. Although the reader can only guess at what enabled Beebe to produce a more successful work, the fact remains that he did, and an analysis of it will clearly show why it is better. The word <u>better</u> is important; although this work generally exceeds his earlier work and some of the individual essays are stylistically better than some of his later ones, the work as a whole is inferior to his next two jungle books which will be analyzed later.

Beebe went to the Guianian jungle to find peace of mind after his World War I experiences. But disappointed is the reader who expects Beebe immediately to show him how he found that peace, for the first few essays deal with his trip to the jungle. The emphasis in them is, in many cases, on the people he meets instead of on nature, about which he does his best writing. In "Sea-Wrack" Beebe reveals his thoughts and activities aboard ship on his way to Guiana. "Islands" is perhaps the weakest essay in the collection. It relates a series of incidents that occurred during Beebe's stops at various islands. Unfortunately, most of this essay deals with people. Although Beebe deftly handles the narratives, spicing them here and there with humor, the reader welcomes the descriptive passages such as that in which he records their night-time sailing from Barbados:

> The outward curve of the water from the bow was a long slender scimitar of phosphorescence, and from its cutting edge and tip flashed bits of flame and brilliant steely sparks, apparently suspended above the jet-black water. Alongside was a steady ribbon of dull green luminescence, while, rolling and drifting along through this path of light came now and then great balls of clear, pure fire touched

> with emerald flames, some huge jelly or fish, or sargasso weed incrusted with noctiluca. Everywhere throughout the narrow zone of visibility were flickering constellations, suns and planets of momentary life, dying within the second in which tye flashed into sight. Once Orion left a distinct memory on the retina--instantly to vanish forever.[2]

Two essays, "A Hunt for Hoatzins" and Hoatzins at Home," illustrate Beebe's skill as a writer of narrative. They deal with his search for a strange bird which one should have expected to see only as a fossil. In some ways it looks like a reptile, reminding Beebe of a turtle without its shell. It can also creep on all fours, climb by using the finger and toes on its wings, dive from great heights, and swim skillfully. In the first essay Beebe gives a detailed account of one hunt for hoatzin nests: a wild ride in a Ford along muddy roads, a downpour which ends the hunt, and frustration that develops into hilarity. He uses the occasion to deliver a digression on getting wet, the discomfort of which goes away the minute one is entirely wet. Then, he says, "One simply squdges around in the blissful knowledge that all the mud and water in the world can now arouse no feeling of discomfort."[3] "Hoatzins at Home" is a fascinating essay about a heroic little nestling that eludes Beebe's tree-climber, first by climbing up the tree from the nest and then by diving into the swamp water below and swimming away. Beebe and his party watch with amazement as the nestling, after they retreat some distance, climbs out of the water, up the tree, and into the nest! In this essay Beebe combines the best of his skills in narration and description to produce one of the most interesting essays in the collection.

If the reader is disappointed in this volume to this point, the last five essays reward him for his persistence, as analysis of two of them

will show. "A Wilderness Laboratory" deals with the establishment of a scientific research station on the edge of the jungle in Bartica district. Beebe recalls many of his impressions of the nights and days he spent in getting used to his new environment. These impressions reveal Beebe's ability as a sketcher of verbal scenes and a painter of verbal pictures. For instance, he writes,

> No two nights were alike, although almost all were peaceful, with hardly a breath of air stirring--just the cool, velvet touch of the tropics, always free from any trace of the heat of the day. Whether dark rich olive under crescent or starlight, or glowing silvery-gray in the flood of the full moon, the forest, so quiet, so motionless all about me, was always mysterious, always alluring.[4]

Of the morning he writes,

> No matter how tempestuous the evening before or the night, the hours of early morning were peaceful. Not a leaf stirred. The tide flowed silently up or down for a time held itself motionless. At the flood the mirror surface would occasionally be shattered for a moment far from shore, where a porpoise or a great lucannani rolled, or a crocodile or a water mama nosed for breath. The calm was invariable, but the air might be crystal clear to the horizon, or so drenched in mist that the nearest foliage was invisible.[5]

And of the sunsets he writes,

> They were explosions of wild glory, palettefuls of unheard-of pigments splashed across the sky, and most bewildering because they were chiefly in the east or north. This evening on which I write was sealed with a sunset of negligible yellow, but the east was a splendor of forest fires and minarets, great golden castles and pale-green dragons and snow-capped mountains all conceived and molded from glorious tumbled cloud-masses, and ultimately melting back into them again.[6]

The last essay in the collection, "Jungle Night," clearly shows Beebe's preference for the night in the jungle, and it is one of his best because it is one of the most uniform: he is consistent in the tone and the vividness of his descriptions. Perhaps the best way to describe his descriptive style is to say that it is controlled. Another lengthy

passage should reveal that control:

> At night I am sure it is the most weirdly beautiful of all places outside the world. For it is primarily unearthly, unreal; and at last I came to know why. In the light of the full moon it was rejuvenated. The simile of theatrical scenery was always present to the mind, the illusion lying especially in the completeness of transformation from the jungle by daylight. The theatrical effect was heightened by the sense of being in some vast building. This was because of the complete absence of any breath of air. Not a leaf moved; even the pendulous air-roots reaching down their seventy-foot plummets for the touch of soil did not sway a hair's breadth. The throb of the pulse set the rhythm for one's steps. The silence, for a time, was as perfect as the breathlessness. It was a wonderfully ventilated amphitheater; the air was as free from any feeling of tropical heat, as it lacked all crispness of the north. It was exactly the temperature of one's skin. Heat and cold were for the moment as unthinkable as wind.[7]

Here, just as he often does, Beebe lets one image control his vignette. In this case it is "the most weirdly beautiful of all places outside the world." The rest of the description turns on the weird appearance of the jungle at night: it is unearthly, unreal; it has the appearance of theatrical scenery; it is without wind or heat or cold. Such passages reflect Beebe's mood--the quiet appreciation of the silence, solitude, and peace that he found in the jungle night. This essay is more reflective than any other in the collection and is more typical of his general achievement in his next "jungle volume," Edge of the Jungle.

Beebe achieves the control exhibited above only momentarily in other essays of the collection. Some passages have been cited earlier. However, the reader does not get the impression of sporadic quality that he gets from The Log of the Sun. Perhaps this is true because of the underlying structure and purpose in the work. Generally, the structure is the narrative of Beebe's trip to the Guianian jungles in order to find peace of mind. The reader follows him from the time he boards the ship to his essay "Jungle Night," at which point he knows that Beebe

has found his peace. The reader who knows Beebe's work knows that he is at his best in writing of natural phenomena. He may therefore become impatient with Beebe's characterizations of the people he meets along the way, however well they may be drawn. However, it should be stressed here that the essays stand alone as pieces of literature and that there are no requirements that the nature writer unify his collection. Nevertheless, the reader finds more pleasure in the volume if the unity exists. Such unity also stands as another mark of the writer's skill.

The reader should bear in mind the fact that Beebe did not go to the jungle primarily as a scientist, but rather as an observer who could lose himself in careful observation. This may be the ultimate cause for the loose structure, and it is certainly the cause of some other weaknesses. For instance, it is difficult for him, in his search for peace, to forget the war, and it sometimes affects his diction:

> Indeed, of the two enemies, I found much more to condone in the ignorance and the frank primitive brutality of the pirate of past centuries, than in the prostituted science and camouflaged kultur of the teutonic ishmaelite of today.[8]

But not all of his problems of diction can be laid to his emotional involvement in the war. Of the people of St. Lucia he writes, "So intensive was the grime that the original dark hue of their skins offered no camouflage to the anthracite palimpsest which overlaid it."[9] On a beach in Barbados he "watched the little native folk, autochthones who for innumerable generations had been so loyal to their arenaceous home that the sheltering mantle of its pale hue had fallen upon their wings and bodies."[10] He goes on to talk about "this littoral hunting ground." One cannot say that this language is <u>too</u> overdone, but it strikes a discordant note when the reader comes across it in this work because the

language here is not generally strained. Fortunately, however, such passages are the exception instead of the rule.

Despite the seriousness of Beebe's journey to the jungle, he never loses his sense of humor. Part of the humor arises from his subtle and effective use of understatement. For example, in describing the awkward and ugly hoatzin, he writes,

> The flight of the hoatzin resembles that of an over-fed hen. The hoatzin's voice is no more melodious than the cry of a peacock, and less sonorous than an alligator's roar. The bird's grace is batrachian rather than avian, while the odor of its body resembles that of no bird untouched by dissolution.[11]

Another part of his humor comes from his characterization of some of the people he meets. A good example is Sam, his tree climber, who addresses thorns thus, "Pleas' don' stick me, Thorns!" and who, upon finding his stolen shoes on the feet of another, says, "Hello, Shoes!"

The reader might do well to note two final points about the book. Beebe deflates the idea of the naturalist as the sentimental, romantic "nature bug,"[12] and he makes an incisive statement about how one goes about observing nature:

> One cannot say, 'Lo, I will now be relaxed, receptive.' It must come subconsciously, unnoticed, induced by a certain wearied content of body or mind--and then--many secret doors stand ajar, any one of which may be opened and passed if the gods approve.[13]

Edge of the Jungle was the second in Beebe's "jungle series." It is a collection of twelve essays which, except for one, describe jungle life around the Tropical Research Station of the New York Zoological Society at Kartabo near the confluence of the Cyuni and Mazaruni Rivers in British Guiana. The dedication reads: "To the birds and butterflies, the ants and tree frogs who have tolerated me in their jungle antechambers I offer this volume of friendly words." This dedication is

significant because it forecasts the relative success of this collection in comparison to Jungle Peace. This is a book about nature, not about people and places as was much of the earlier volume. As a result, the consistency of tone and style, typical of only a few of his early essays, is generally characteristic of this volume.

Here, as before, Beebe keeps the scientific information to a minimum and assumes the role of an observer who carefully observes events, presents the reader a factual account of them, and then gives sway to his imgaination. The reader therefore obtains not only the facts of the event, but Beebe's personal, often poeticized interpretation of them.

"The Lure of Kartabo" serves as an introductory essay by establishing the setting for the events which Beebe later records. The first part of the essay deals with the details of Beebe's getting settled into the new jungle station at Kartabo. He sets about describing the life he became aware of shortly after his arrival. For instance, he vividly describes his sensations as he attempts to capture a vampire bat by leaving various parts of his body exposed. His awareness of a "new voice of the wind at night" occasions a fanciful yet highly poeticized interpretation of it, typical of many of his descriptions through this work:

> The steady rhythm of sound which rose and fell with the breeze and sifted into my window with the moonbeams, was the gentlest shussssssing, a fine whispering, a veritable fern of a sound, high and crisp and wholly apart from the moaning around the eaves which arose at stronger gusts.[14]

Despite his excellent descriptions and metaphors, Beebe often feels inadequate to the task of relating his observations. He thinks that the deeper one feels "the joys of friendship" with the small creatures of the

jungle, the more difficult it is to relate them to others,[15] and often in this work and others, one finds Beebe's admissions of inadequacy when an event is particularly ineffable to him.

He admits such inadequacy in the next essay, "A Jungle Clearing," which seems to have drawn some criticism of his writing, particularly from an anonymous reviewer who, though he generally praised Beebe, said that his prose was "sometimes ridiculous and overblown."[16] It is true that he gives in to his imagination in this essay. He deals here with the plant and animal life that comes after the jungle has been cleared. As his eyes roam over each species, he evnisions its parallel in the northern latitudes of the hemisphere. The sounds also set his imagination in motion. One "strange little rasping" brings to his mind "the throbbing theme of the Niebelungs [sic], onomatopoetic of the little hammers forever busy in their underground work."[17] Of another sound he writes, "In the instant that the sound began, it ceased; there was no echo, no bell-like sustained over-tones; both ends were buried in silence."[18] With such precise and vivid descriptions as these before him, it is hard for the reader to accept Beebe's confessions of inadequacies in description. But he comments upon the elusive qualities of colors in the jungle and the difficulties in describing them. One bird, for instance, is a "brilliant turquoise" against the green of the jungle. But after Beebe shoots it, he finds that it is beryl; then later it looks aquamarine, still later Nile green, and finally "a delicate calamine blue." He says,

> It actually had the appearance of a too strong color, as when a glistening surface reflects the sun. From beak to tail it threw off this glowing hue, except for its chin and throat which were a limpid amaranth purple; and the effect on the excited rods and cones in one's eyes was like the power of great music or some majestic passage in the Bible. You,

> who think my similes are overdone, search out in the nearest museum the dustiest of purple-throated cotingas--Cotinga cayana,--and then, instead, berate me for inadequacy.[19]

Perhaps the reviewer did not accept Beebe's explanation for his prose being "overblown." Whether the reader agrees with the critic on this point, he must agree that Beebe's calling his pocket-lens "the infant of the microscope"[20] is ridiculous.

To observe intensely was something Beebe had to learn. As Beebe notes in "A Jungle Beach," Theodore Roosevelt once told him that "he would rather perceive things from the point of view of a field-mouse, than be a human being and merely see them."[21] In this instance, Beebe merely sees the beach until one night the waters undermine one of the great trees on it. The tree falls into the water, and he is able to study the creatures that crawl along its trunk to the shore. Since the roots are still attached, he has an opportunity to study the new life that then returns to the tree. The last few paragraphs reflect his feelings of inadequacy as a chronicler of nature: "To write of sunrises and moonlight is to commit literary harikiri; but as that terminates life, so may I end this." He follows this directly with one of his excellent vignettes:

> Every reed at the landing had its unbroken counterpart in the still surface. But at the apex of the waters, the smoke of all the battles in the world had gathered, and upon this the sun slowly concentrated his powers, until he tore apart the cloak of mist, turning the dark surface, first to oxidized, and then to shining quicksilver. Instantaneously the same shaft of light touched the tips of the highest trees, and as if in response to a poised baton, there broke forth that wonder of the world--the Zoroastrian chorus of tens of thousands of jungle creatures.[22]

Such scenes make "unlanguaged thoughts come and go--impossible similes, too poignant phrases to be stopped and fettered with words,"

and Beebe is "neither scientist nor man or naked organism, but just mind."[23]

"Guinevere the Mysterious" is an excellent description of the metamorphosis of Beebe's tadpole Guinevere into a beautiful frog, a process which seems to hold a fascination for most naturalists. But just as interesting to the student of nature writing are his comments on writing. In the previous essay, he had recognized the necessity in consistency of purpose (although his attempt at wit may not succeed for some readers): "But one cannot shift literary overalls for philosophical paragraphs in mid-article. . . ."[24] He stresses the necessity for consistency of diction in relation to a particular audience. He says that when he states that Guinevere had "ceased being positively thigmotactic" he needs to say no more for the herpetologist. He hesitates to "loosen the technical etymology" and give up the term; he likes the sound of it, sees it as a practical term, and decides that his editor must accept it since he had accepted the editor's censure of his definition of the vampire as "a vespertilial anaesthetist" and of his use of candelabra as a verb.[25]

"The Bay of Butterflies" was occasioned by Beebe's observations of the male Catopsilia butterflies' migration north to die. He gives way to some fanciful explanations for their migrations--explanations which science sweeps aside. But he says that just as readily "more reasonable scientific theories fall asunder, and we are left at last alone with the butterflies, a vast ignorance, and a great unfulfilled desire to know what it all means." Of his inability to understand, he continues,

> But what could I know of the meaning of 'normal' in the life of a butterfly--I who boasted a miserable single pair of eyes and no greater number of legs, whose shoulders supported only shoulder blades, and whose youth was barren

of caterpillarian memories![26]

In fact, the entire episode serves to show him once again his futile attempts to understand natural phenomena and to transform his impressions of them into words. He concludes;

> And as I considered my vast ignorance of what it all meant, of how little I could ever convey of the significance of the happenings in the Bay of Butterflies, I felt that it would have been far better for all of my green ink to have trickled down through the grains of sand.[27]

Although Jungle Peace may surpass this work in the stylistic achievement of some individual essays, it lacks the unity of subject matter and consistency of expression found here, despite "A Tropic Garden," which is a flaw in this work. In it Beebe describes the Botanical Gardens at Georgetown and recalls incidents that occurred at the various times he visited them. It is the only essay in the collection which is not about the jungle near Kartarbo, and it therefore breaks the unity of the work. As Beebe indicated in his dedication, the work is about nature and her creatures. Except for "A Tropic Garden" and parts of "Hammock Nights," man and his activities are absent from the work. Such an absence is refreshing (and becomes almost impossible for the next generation of nature wirters), and allows Beebe to devote his attention consistently to nature, about which he does his most effective writing.

William Beebe's Jungle Days, the third collection in his "jungle series," contains nine nature essays. In it he maintains the excellence of writing he showed in his first two volumes. However, the reader will find that, although this work reveals his fidelity to nature and his abilities to draw dramatic scenes and to describe natural phenomena,

it has a more subdued tone and lacks the enthusiasm of the earlier volume.

Beebe begins "A Chain of Jungle Life" by giving a take-off on "The House that Jack Built":

> This is the story of Opalina
> Who lived in the Tad,
> Who became the Frog,
> Who was eaten by Fish,
> Who nourished the Snake,
> Who was caught by the Owl,
> But fed the Vulture,
> Who was shot by Me,
> Who wrote this Tale,
> Which the Editor took,
> And published it Here,
> To be read by You,
> The last in The Chain,
> Of Life in the tropical Jungle. [28]

He wants to describe these ten links in the life chain, but he feels inadequate to the task, not in his perception of them but in the facility of language:

> To know and think them is very worth while, to have discovered them is sheer joy, but to write of them is impertinence, so exciting and unreal are they in reality, and so tame and humdrum are any combinations of our twenty-six letters.[29]

He begins his story in the middle, and as he comes to each link, he describes the creatures involved. He shoots the vulture and finds at the place where it falls, near the place from which it had risen, an owl wrapped in the coils of an anaconda; both the owl and the reptile are dead. In the snake Beebe finds a fish and in the fish a frog. In the food canal of the latter he finds the first (or last) link, the Opalina. He observes its self-division and comments on the difficulty of describing it:

> We cannot wonder that there is no backward glance, or wave of cilia, or even memory of their other body, for they

> are themselves, or rather it is they, or it is each: our whole vocabulary, or entire stock of pronouns breaks down, our very conception of individuality is hsattered by the life of Opalina.[30]

The reader will note, although it is perhaps beside the point in a study of the literary merits, that Beebe is not horrified by this food chain as Melville is by "the universal cannibalism of the sea." In fact, Beebe makes a joke about it at the beginning of his essay, and he first gets interested in the chain when he finds the vulture he has shot. Beebe finds no horror in it because he accepts the struggle in nature; he even finds a kind of peace in the natural struggles that he witnessed when he retreated from the unnatural struggles of men in war.[31] If, later, he is saddened by the falling of a leaf, it is not because the leaf is dying but because its dying means that his lifetime has been shortened and that he must soon leave the jungle.

In "Falling Leaves" Beebe tells what he has observed of the leaves that fall in the jungle. He, among the few, has been able to observe closely what most fail to see, but again he finds difficulty in describing what he sees or hears. For instance, he says,

> I would like very much to find a word or sound which would bring to mind the fall of a leaf upon leaves. I know it perfectly--the generic timbre--the composite echo etched into my mind by a thousand conscious listenings. But it will not get past my consciousness to my lips, and utterly refuses to siphon down my arm and pen.[32]

In his study of leaves, he makes several discoveries: fallen leaves have a "wind song all their own"; leaves from different trees have characteristic patterns of flight; the natural sound of rustling leaves is so distinct that animals can differentiate between them and man-made sounds; leaves do certain distinct things while they are being burned;

they serve as camouflage for predatory insects and deadly reptiles; they serve as a stimulus for the color changes of the lizard Polychrus marmoratus. Beebe's last thoughts of fallen leaves in the jungle are sad:

> The sear and yellow leaf means to me the end of a season, of a year--a very appreciable fraction of lifetime--and even in this evergreen land, this jungle du printemps eternel, the dead leaf eddying to earth is a sad and a tragic happening.[33]

"The Bird of the Wine-Colored Egg" is a descriptive life history of the variegated tinamou, some of the information for which essay Beebe got by shooting the creatures. His careful explanation and description of its habits reveal the scientist in Beebe, and the minute description sometimes becomes rather heavy. He looked forward to studying the tinamou for some time, and that done, found that the memory of his study stimulated him. For, he says, "when the city presses too closely, when four walls suffocate as well as enclose, when people oppress as well as associate," he goes to the bird house at the Zoological Park to listen to the

> sweet, clear staccato of silvery tones. Body and soul, I am back in the Guiana jungle, with the cool night settling down, a distant howler clearing his throat, and a bass chorus of giant tree frogs rumbling across the river. Then the tinamou calls again and the world is reorientated.[34]

This last passage, with which Beebe ends his book, reflects his nostalgia for the Guiana jungle and the peace he evidently found there. It suggests something more. This third volume in his jungle series is more subdued in tone than his earlier ones. Here, he is not the newcomer to the jungle. It still holds surprises and moments of wonder for him, but these essays do not contain the vivid descriptions, charged with enthusiasm, that one finds in his earlier essays. Yet his accuracy

and fidelity in reporting give the work an even quality, the degree of which he had not previously reached.

Here there are no "brilliant flashes" of description as in his other works, but there are those that the reader finds graphic and quite satisfying. For instance, describing the flight of the vulture, he says,

> I was surprised to see that he did not head for the regular vulture table, but slid along a slant of the east wind, banked around its side, spreading and curling upward his wing-finger-tips and finally resting against its front edge. Down this he sank slowly, balancing with the grace of perfect mastery, and again swung round and settled suddenly down shore, beyond a web of mangrove roots.[35]

Also excellent is his description of the death of Opalina when the frog dies:

> There comes a time when the sudden leap is not followed by an inrush of food, but by another leap and still another and finally a headlong dive, a splash and a rush of water, which, were protozoans given to reincarnated memory, might recall times long past. Suddenly came a violent spasm, then a terrible struggle, ending in a strange quiet: Opalina has become a link.[36]

It is difficult to surpass the vividness and beauty of such writing.

Once more Beebe succeeds. He gives us the facts, but he goes beyond that, for as he says, "even a pack-rat can assemble a gallon of beans in a single night." The important thing is to link the facts together, to make them form a concrete whole: "to make A fit into ARCH and ARCH into ARCHITECTURE, that is one great joy of life which, of all the links in my chain, only the Editor, You and I--the Mammals--can know."[37] He fits the links beautifully, mainly because he follows his own advice that a strange city, shore, or jungle "should be glanced at, not scrutinized, listened to, not examined, wondered at, not studied."[38] Therein lies the difference between the method of the

nature writer and that of the scientist.

Donald Culross Peattie

Peattie's An Almanac for Moderns is a collection of three hundred sixty-five short essays (from one paragraph to no more than a page), one for each day of the year. Each essay takes as a heading the date of the year, beginning with March 21, the vernal equinox. The work is further divided into twelve sections which are given the names of the signs of the zodiac, beginning of course with Aries. The structure of this work is similar to the eighteenth century Natural History of Selborne by Gilbert White, which Peattie says is "a piecemeal affair of unsystematized material, neither a naturalist's diary of the year. . . nor a thorough investigation of anything in particular." Yet its rambling quality makes it popular, and "for the naturalist it is still a model in the art of investigating the commonplace in the certainty that it will yield up treasure."[39]

Peattie might well have said all of this about An Almanac for Moderns. The topics it covers are as various as the author's days: many are pure description, many are subjective reactions, and many are highly discursive and philosophical. The subject matter generally relates to the season of the year in which it is written, but the essays follow no apparent pattern and in some ways reflect the moods of the writer. For instance, during the winter months Peattie can make fewer excursions. Therefore, he evidently has more time for thinking and many of his essays are philosophical and reflective. The diversity of the subject matter makes any kind of summary statement impossible.

However, a close analysis of the work will show that Peattie returns frequently to certain subjects. The significance of the work lies in these repetitions because they establish the themes which recur throughout Peattie's subsequent works.

One thing Peattie does consistently throughout the work is to celebrate the birthdates of great naturalists. The accomplishments of such celebration are threefold. First, it shows Peattie's abilities as a biographer. Besides pointing out the great accomplishments of these men, Peattie shows the small achievements, the failures, sometimes their futile struggles against social, political, economic, and physical odds. Thus, we find Darwin struggling against the attacks of men who seek to maintain a social status quo, and Buffon embroiled in political affairs. Audubon had no sense of economics, and Huber, though blind, became the authority on ants. Nor does Peattie ignore their faults. Audubon's irresponsibility toward his family, Linnaeus's poor marriage and hasty work, and Nuttall's wasting of his ability for economic security are brought out, yet forgiven in the light of their accomplishments. In short, Peattie makes them very human and therefore very alive in these brief sketches. Second, these sketches show Peattie's preference for certain naturalists. The reader realizes that such preference is a matter of personal taste (though Peattie justifies his choice by his enlightening sketches), but he finds among the list many who would appear on any such list. These sketches also broaden the scope of the Peattiean canon on naturalists and nature writing. His statements on a few of these help us to see where Peattie placed them in the history of the naturalists, and in a more detailed study of Peattie, they might reveal the source of many of his techniques.

As indicated in an earlier chapter, Peattie also used the pages of An Almanac for Moderns to reveal his joy in living and his faith in life as well as his personal philosophy. Besides revealing these things, the book also shows Peattie's abilities as a writer of description which is hard to surpass. The following are some random examples. First,

> Under Audubon's brush, birds live as they live in the wild--forever in motion, now teetering on a bough, now flinging themselves upon the blue sea of air, now diving like the kingfisher or osprey, now snapping up an insect or standing almost on their feathered heads to reach a pendent cherry.[40]

Second,

> A day of silver rain, pouring down straight and tumultuously on the roofs, on the trees; silver rain like a flight of javelins blown down from all over the sky. And the white-throat singing, perhaps for the last time before this little winter resident takes flight.[41]

Third,

> So frost is on the land at last, the stiff rime of it dusted across the grass, treacherous on the stones, exquisite along each vein of the leached-out skeleton leaf. Frost is in the golden crown of that beggar king, the dandelion; frost pushes up out of the red clay in a gleaming forest of curving icicles, so strong that it has lifted the earth and even little stones high on its cold prongs, so frail that at a touch of my cane I can slay it as easily as so many glass flowers. Sickles and spirals and curls like a carpenter's shavings are shooting out of the stems of the frost-weed, that modest little member of the rock-rose family, and from the dittany, which has the same odd property of extruding the water in its stem.[42]

Such descriptions are rather common in this work. With a basic belief in life and a great enthusiasm and joy for living, Peattie was able to observe very closely the commonplace as well as the great in life and describe it with fidelity. This latter, if we can agree with Peattie himself, is a basic tenet of good nature writing. Although many of his essays concern biographical and philosophical subject matters

which do not lend themselves to poetic treatment, Peattie gives a poetic treatment to others, as the excellence of imagery in the foregoing passages clearly shows. Judged by any standards, An Almanac for Moderns is well worth reading.

A Book of Hours is one of Peattie's best. It contains twenty-four essays, one for each hour of the day; nevertheless it is a well-structured, unified whole. The general structure of the work is evident from the title, but Peattie goes beyond what is suggested there. He did not simply write an essay for each hour of the day; instead, he wrote an essay on the activities that he had associated with each hour. Therefore, he did not begin at midnight or noon, or some other convenient hour, as one might have expected. He began at 3:00 a.m. because that is the hour when the first stirrings of awareness begin in the waking man. Peattie then takes his reader through the hours of expanding awareness, to full wakefulness, and back into sleep again. The work has a beginning, middle, and end which parallel the Linnaean Floral Clock which also begins at 3:00 a.m. Thus, the very structure points up the kinship of man's diurnal nature to that of other natural life.

Although the work is tightly structured, the individual essays stand alone, and they are essential to a study of nature writing because of their content as well as their style. As Chapters I and II indicate, the content is indispensable in helping one define Peattie's theory concerning naturalists and nature writing. The work's stylistic successes should become clear through the following analyses of Peattie's techniques.

First, many essays are controlled by a single image. In "THREE Ante Meridian," for instance, Peattie says that that hour is "sleep's

fringe," that time between sleeping and waking, the experience of which he describes as the sensation of being washed up on a beach: "Here the small waves whisper and flash; the half drowned swimmer lies beached, innocently, with his face in the warmth of sand, and the ebb of sleep lapping his tranquil nakedness." One has the desire to linger here, but the land birds call, and the consciousness arises.[43] Peattie maintains the image of the drowning man and related images throughout the essay. In two essays, he does the same with terms of ant life by which he describes the activities of man in the cities. In "FIVE Ante Meridian," he says that at the hour of sunrise the "hive" is clean; man's activities have not yet begun.[44] But in "NINE Ante Meridian," he says that nine is the hour at which the "human termitaria, the modern cities" come to life, and throughout the essay he compares man's comings and goings to those of ants.

Second, in A Book of Hours, so full of passion for life, the reader easily finds highly rhythmical and poetic passages. A few examples should suffice. He describes daylight moving west over the American continent:

> Westward the mirror of Ontario picks up the reflection of the zenith streamers, then almond Erie catches the gleam like humor in a long eye, then woman Huron, with its bays like arms flung open, then the pure pendant drop of Michigan, and last Superior, high and deep and ocean-cold.[45]

In this passage, Peattie gains his rhythm through a repetition of parallel noun clauses, the last four prefaced by "then" and "finally." Because they become more elliptical and, therefore, shorter as the sentence progresses, there is achieved a falling movement in the sentence. That movement suggests the movement of the sun over the

face of America. Of the grave Peattie writes,

> The uneasy earth mound erodes away, in the end. The boards are punkwood and fixfire. With a slow tug of gravity, and a frost heave, earth claims back even her stone, rubs away the graving on it, tilts it, floors it, and finally scrawls her own idea of an epitaph, in lichen runes.[46]

Here Peattie creates his rhythm through a repetition of verbal phrases. That rhythm is broken by the comma near the end, which creates an effective pause before the finality of the last phrase. Finally, of the morning sun Peattie writes,

> Meeting shore, it runs a finger of cold shine down marginal sand. Now the sea marsh grasses, stiff with the brine in their veins, shake light from their swords, spilling it toward the turf of rush and samphire in long runnels from the gutters of the blades. It smiles wanly on the crooked tidal creeks in their ebb, where the clapper rails prod in the black mud with sensitive bills.[47]

This passage has the metaphorical and rhythmical quality of poetry.

Generally, A Book of Hours is a work full of the joys of living through which the writer's enthusiasm becomes infectious. But it is not the "bubbling" of "emotion recollected in tranquility" but rather a realistic view of modern man and an exploration of the things in which he can find a reaffirmation of faith in himself when everything around him to others might seem a shambles.

Peattie's next book of consequence is Flowering Earth. The lover of nature writing may not be as satisfied with this work as he is with the preceding ones, for the style here does not seem to measure up, consistently, to the criteria set down by Peattie himself. Despite that fact, there is much in the work that pleases.

On first glance, it might appear that Peattie's title for this volume was poorly chosen since more than half of it is not about the true flowering plants. The verbal in the title, flowering, is the key word

which seems to reflect in some way the content of the work. It is suggestive of nature in process, and indeed Peattie is more interested in the processes of plant life than in any static description of it. Therefore, there is very little description here. He says of his writing about modern flora, "If I have left no simple impression of what it is like, then I have left the correct impression."[48] Such seems to have been his intention with the entire work. The reader leaves it with a strong awareness of the general life processes but with little of any particular natural object.

Stylistically, the work is not metaphorical and generally lacks the poetic qualities which Peattie himself felt were necessary for nature writing[49] and which he had achieved in his earlier writing. Instead, the style of this work often has a "gasping" quality. It seems, at times, to be forced and awkward; Peattie often seems to be struggling with his sentence structure. For instance, at one point he writes, "For, fundamentally, and away back, coal and oil, gasoline and illuminating gas had green origins too."[50] The effectiveness of "green origins" is somewhat blunted by the numerous commas, which result in choppiness rather than in rhythm. Choppiness also results at times from the insertion of parenthetic elements into short sentences: "Chlorophyll alone is hitched to what is, for earthly purposes, the infinite."[51] It results in others that are perhaps somewhat overpunctuated: "The heat and the immense arc of the sky, the prevailing westerlies and the sense, almost suffocating, of being landlocked at the center of a vast continent, became at last hypnotic."[52]

If the "ups and downs" of such passages become monotonous to the reader or fragment his thinking, perhaps the work is saved by the

many passages in which his prose rhythms are apparent. For instance, of proteins he writes, "Animals can elaborate them, building them into flesh and horn, the beetle's shard, the lion's mane, ivory, apes, and peacocks."[53] Or, "Day after day--only calm and sunshine, kelp and fish and birds."[54] A final example is a passage in which he notes that one of the beautiful ironies of nature is that the moment of flowering is also a moment of death, for the blossom is an "organ that lives to give life away; that is born to die in the bearing of seed. It is the blind beauty, the lonely fragrance, the twisted art, the seduction without shame, that we adore, and call a flower."[55] In the first sentence and the first part of the second, Peattie builds rhythms through the repetition of like sentence elements. He creates an effective pause with "that we adore," which prepares us for the more effective periodic quality of "and call a flower." Peattie has control here which is difficult to surpass.

In such passages, Peattie achieves a style similar to that of his earlier works, and in light of those works, any weaknesses of style here come as a surprise to the reader. But perhaps those weaknesses can be explained. Peattie admitted that he was afraid to write a work on botany, the field he knew best, because it might not meet the standards of the scientists. Indeed, science may be the general base of his stylistic problems, for at one point he waxes poetic and then says, "This is not science; this is trifling with the great plant story I have set out to tell."[56] Although he did not want to write a scientific book, his knowledge of botany sometimes overcomes him and he gets rather textbookish (page 186 is a good example). Therefore, he was caught in the middle: he could write neither a scientific work nor a piece of

nature writing which was poetic as he felt such writing should be. It is interesting to note that Peattie was successful in those instances when he was able to do one or the other (A Natural History of Western Trees on the one hand and An Almanac for Moderns and A Book of Hours on the other). It appears, then, that Flowering Earth was produced by a writer whose technical knowledge of his subject matter would not let him poeticize it.

Joseph Wood Krutch

As the title suggests, Krutch's The Twelve Seasons has a calendar structure, popular with many modern nature writers. It contains an essay for each month, beginning with April. Its subtitle is A Perpetual Calendar for the Country; the entire book has a kind of envelope structure. Krutch ends his calendar, of course, at the place where he began it. His first essay deals with man's movement away from nature in marking his holidays, and the last one deals with his movement away from nature in marking the beginning of the year. With the notable exception of "February: The One We Could Do Without," he makes such full circles in structuring each essay. His pattern is to begin with some general statements about the month and a description of the phenomena he sees then. Something in what he observes launches him into reflection and discussion of various aspects of man's condition. Then at the end of the essay, he returns to other general statements concerning the month or to a restatement of the point with which he began. The essay for August can serve as an example. Krutch begins by stating that in this season, everything is fat and seems dormant. Even the bourgeois country man sits back and surveys what he owns. This

last idea gets Krutch into a discussion of ownership. At last he comes back to the apparently dormant condition of things that has underneath it a forecast of the autumn to come.

Krutch's style in The Twelve Seasons is not frequently poetic (nor is it in most of his nature writing); however, there are some passages in which he presents excellent figures of speech, much to the reader's delight. For the sake of illustration the following examples are offered. Krutch writes,

> Sometimes, I will admit, even in the country we do have rather too much of one kind of good weather for too long at a time--as we have been having it just now when rain has been falling and falling and falling as though some sorcerer's apprentice had forgotten how to turn it off.[57]

He writes of the asters in the late summer season:

> Through all its shades they repeat one color and that is the color of mourning. Their blooming is part of a grand ceremony, part of what is called in France (there usually with some tinge of exaggeration) the pompes funèbres. Someone is hanging purple on the doorpost of summer.[58]

In writing of man he says,

> Perhaps that is the reason why he is almost the only animal whose blood shows clearly through the delicate skin, hinting that it flows red, red, red just below the covering just as the clothing of a woman hints of nakedness beneath.[59]

Finally, of the snow he writes,

> And yet each individual grain, billions upon billions upon billions of them, is finished perfectly as one or another of the hundreds of different six-pointed stars; as though each, instead of being piled in unnoticed, uncounted heaps, had been formed by the careful eye of some connoisseur with a lens.[60]

These passages are but a sample of the many that show Krutch's ability to present an image and to get the right turn of phrase.

More apparent than the poetic qulaity of Krutch's style is its richness in literary allusion. He uses literature in two specific ways.

First, besides quoting stanzas and lines from poems, Krutch often works into the text of his essays lines and quotations from literary sources, sometimes with and sometimes without quotation marks and reference to the source. Sometimes he rewords the quotations to fit his context:

> The rain, I can still say a bit smugly, falleth upon the just and the unjust. It has no intentions. It is good for those who can take some advantages of it; bad for those whom it will drown or rot. "The stars are little twinkling rogues who light us home sometimes when we are drunk but care for neither you nor me nor any man."[61]

Of a frog he writes, "Presently he will waddle away again, confident that he has been laying up, in his very belly, treasures that moths will not corrupt and no thief break through to steal."[62] And speaking of man's awareness of life around him, Krutch says, "Full many a flower is born to blush unseen, but if it could be consulted it would hardly agree that its fragrance was wasted."[63] And finally, he says, "History is not ancient enough to tell us when mankind first discovered that smiling fields make glad the heart. . . ."[64] Such use of literary sources makes his prose highly stimulating. Each allusion fits the context, yet the reader easily isolates the lines and recognizes them or feels that he has read them before. He probably has if he has read Western literature, particularly the Bible and the poets. The other type of literary allusion Krutch uses is the typical one of alluding to the ideas contained in the works of various writers, from Aquinas to Shaw.

Finally, a word needs to be said about the tone of the work. Although Krutch is dealing with serious problems facing mankind--problems which have become momentous in the past fifty years--he is able to treat them with congeniality and good humor. Sometimes the reader senses a kind of ironic and perhaps even bitter humor as Krutch

explores some of man's follies, but nowhere does one sense that he is the prophet of doom, the forecaster of chaos. Despite his view of the dehumanizing effects of technology, there is often a tone of optimism and hope, even if it is based on no more than knowledge that he, in some way, has taken a stand against that dehumanization.

When the reader first picks up Krutch's The Desert Year, he might expect Krutch to give him a description of the seasonal changes that occur in the desert Southwest. There is some of that, but primarily the book is about Krutch himself and what he learned during the first year that he spent in Arizona, a land vastly different from New England. The content of some of the essays has been discussed in detail in earlier chapters. Throughout the work Krutch has much to say about himself and man in an overcrowded world. His concern for the future well-being of man is evident, and that concern makes the work somewhat uneven. On the one hand, he gives detailed pictures of the desert in four seasons and delightful narratives which reveal his observations of the toads and bats. On the other, he presents a very heavy essay on his view of man's existence, "From a Mountaintop." His observations there do not seem a result of what he observed in the desert, but rather he seems to use a trip up to the mountains as an excuse to expound his philosophy. That may be disturbing to lovers of nature writing who would expect the presentation of the writer's philosophy to be subordinated to his presentation of nature.

The lover of nature writing may also be disappointed about Krutch's style if he believes as Peattie did that the nature writer's prose comes closer to poetry than any other. There is hardly a passage in The Desert Year that one could recall as having poetic qualities,

that is, having been given particular attention in the selection of words for their sounds and in arranging them in rhythmical sequences. If Mr. Peattie meant that the writer must poeticize nature, then Krutch fails in that respect.

Despite the lack of poetry, The Desert Year has excellent stylistic qualities. Mr. Krutch liberally spices the work with anecdotes, conversations, and allusions to literature. The allusions and anecdotes, however, are not those of a pedant, but those of a man from the academic world in the crowded East who finds himself in the strange world of the desert Southwest. He naturally draws as many relationships as he can in order to bring meaning to his present situation.

In fact, the work takes on a conversational tone which is supported in part by his irony. For instance, he says that the tame Gambel's quail furnish "as much 'sport' as would the Public Library pigeons in New York. . . ."[65] He also tells how "old-fashioned" bird lovers, Audubon included, shot the birds in order to study them,[66] and how on the grave of the great naturalist Biedermann, who retired from society to spend the remainder of his days with nature, the name of the man is overshadowed by the advertisement of his achievements.

Similarly, Mr. Krutch supports his conversational tone with bits of humor here and there throughout the work. For instance, he follows up a description of the habits of the velvet ant by saying that the male "seizes the female at mating time and takes her aloft for a plane ride from which she could not walk home if she wanted to."[67] He draws humorous comparisons between frogs and psalmists[68] and shows how people play a game called "expert-baiting."[69] The work also contains many humorous anecdotes. He tells of "an indolent student who took a

course in 'The Bible' because it was reported to be a cinch."[70] and the compliment given Krutch by the man who asked him if he had written an article in Aquatic Life called "A Successful Caesarian Operation on a Guppy."[71]

In short, Mr. Krutch does not become one of "those who make a parade of their convictions." Rather, he has set about leisurely but methodically observing and becoming familiar with the life in the desert. His writing reflects that leisure. He frankly admits his lack of knowledge of many things he encounters, so he conducts his own experiments, goes to his books, or corresponds with the experts. In all of this there is a sense of honesty; the reader feels that Krutch's reactions to life in the desert are sincere and that he has recorded them honestly. That honesty is in a large part what gives the book its tone and makes it very readable.

Krutch's The Best of Two Worlds is his fourth book of nature writing. As indicated earlier, he pursues in it the same basic themes that he pursued in The Twelve Seasons. Generally, the book is written by a man who is filled with the joy of living and who wants to make each day as long as he can by living it to the fullest. He is one who has found the best of two worlds: the knowledge that the man-made world can give him and the mysteries that the natural world provides.

One finds in this work the heavy reliance on literary allusions that marks Krutch's work, but he finds fewer of those excellent figures of speech. However, there is a kind of Thurberesque quality in the humor, especially in "Things That Go Bump in the Night" and "The Harmless Necessary Mouse." And pervading the work is a warmth that is stronger here than in most of his other works. It doubtless results,

in part, from the fact that these essays are not as heavily philosophical as many of his nature essays. But it is due probably more to the extensive use of personal anecdotes as opposed to those from his academic life or his philosophical discussions with others that the reader finds in his other works. Here, there is no concerted effort to keep his personality or his personal life out of the essays. References to his personal life may have little significance in the content of the work, but they do seem to reflect a change of attitude in Krutch; as he says in his "Postscript," each nature writer's work has his personal stamp on it. Krutch's personal stamp in The Best of Two Worlds gives it a warmth that comes through only periodically in his earlier works.

Rachel L. Carson

Rachel Carson's Under the Sea-Wind is in many ways typical of her work although it differs greatly from her achievement in The Sea Around Us. First, Under the Sea-Wind is not nearly as "scientific," although it contains vast amounts of vivid factual details. Second, it is not generally as poetic, yet in many ways it is more imaginative. Finally, the whole work is not as tightly structured, yet the individual books (and, of course, the essays themselves) are unified. The following analysis should illustrate these points.

The title of the book fails to give the reader any insight into what the content of the work might be. In fact, Carson has little to say about the sea wind. The work contains three books. The first is called "Edge of the Sea," and as the title suggests, it deals with life forms, particularly the birds, that inhabit and frequent the water's edge. The title of the next book, "The Gull's Way," seems to be a kind of kenning

for "the sea" because that section deals with life within the ocean's waters. The last book, "River and Sea," deals with the life cycle of eels.

This work is so filled with the details of natural life that it is impossible to summarize except in the most general way. Each book takes the form of a loose narrative in which Miss Carson focuses her attention on one or two creatures and takes the reader with her as she goes with them through their life cycles. The first book is about two sanderlings that she names Blackfoot and Silverbar. With them, Miss Carson takes the reader a full circle. She begins with the island life in the spring when the birds arrive and ends with that life in the autumn when the birds return. Along with the narrative of the sanderlings, such an envelope structure helps unify this book. The reader realizes, however, that the narrative is only a device by which Miss Carson can describe the life cycles she chooses. The reader receives a most detailed account of feeding, mating, and nesting habits of various species of birds. He is also made acutely aware of the limitless food chains, in the sea and on the land, that lie at the basis of life on this planet. The second book is a narrative of Scomber, a mackerel, and the third is a loose narrative of Anguilla, an eel. These books have an envelope structure similar to that of the first.

Perhaps her most thoroughly descriptive work, Under the Sea-Wind, defies summary. The following paragraph, selected because of its length, will give the reader an idea of the richness of detail that pervades the entire work:

> Soon the cloak of the tundra was embroidered with many flowers: first, the white cups of the mountain avens; then the purple of saxifrage; then the yellow of the buttercup glades, loud with the drone of bees trampling the shiny

> golden petals and jostling the laden anthers, so that each bore away its load of pollen on the bristles of its body. The tundra was gay, too, with moving bits of color, for the mid-day sun coaxed out butterflies from the willow thickets where they drooped and hid when the colder airs blew or when clouds stole between earth and sun.[72]

Not only is the diction simple and vivid, but the thoughts move faster as the passage progresses. The first independent clauses are short, almost clipped, then there is the longer middle clause, and finally there is the long, slow one at the end. Such descriptive passages are the rule rather than the exception in this work.

As suggested earlier, Miss Carson does not simply present descriptions of this and then that. Rather, she centers the descriptions, for the most part, around the activities of some creature which she gives a name. The reader of nature writing might question such a method if Miss Carson had chosen to present her material from the point of view of these creatures. In such a case, she would have been writing something more like beast fables than nature essays. Instead, she uses the creatures to unify each of the three books in the collection. The creatures are nothing more than <u>representatives</u> of their species. Silverbar and Blackfoot are simply <u>sanderlings</u>, Scomber is a <u>mackerel</u>, and Anguilla is <u>any</u> eel. Therefore, one can say that the three books are unified respectively by the life histories of sanderlings, mackerels, and eels. However, the reader is wise to suspect her method, for handled badly, it can degenerate into giving human qualities to animals, a practice generally frowned upon by the nature writers. As skilled as she is, Miss Carson comes dangerously close to that at times. For example, "Through this water the mackerel darted in exhilaration, aquiver from their snouts to their last tail finlets--ready and eager for the new life that awaited them."[73] Scomber sees a fish caught on a

fishing line. Miss Carson writes, "As the little mackerel fled from the strange sight, the cusk was drawn slowly upward through the water, toward a dim shadow like that of a monster fish on the surface above."[74] The reader finds the passages in which she assumes the creatures' points of view a bit too much to accept. Fortunately, these cases are few.

One cannot help comparing Under the Sea-Wind with The Sea Around Us, her next book. For one thing, the style is not so metaphorical in the former as it is in the latter work. Frequent poetic passages appear in The Sea Around Us; one can only say of Under the Sea-Wind that the descriptive style is vivid and lively. In fact, he can read the book and not be struck by the poetic qualities, except in a very few cases. That fact, however, does not in any way detract from the value of the work.

Another striking difference between Under the Sea-Wind and The Sea Around Us is that there are more descriptions and less documentation in the former than in the latter work. There Miss Carson often gives the history of sea life, explains scientific theories concerning certain phenomena, and often expounds on the history of scientific research. Here one finds none of that; she simply gives us a picture of things as they are and offers no explanation of how they got that way.

One final contrast might be drawn. Under the Sea-Wind is far less philosophical than The Sea Around Us, in which Miss Carson makes man painfully aware of his insignificance in the face of the totality of life and his subordination to certain cosmic rhythms and cycles which he can probably never understand, much less control. Here man's position in the universe is not considered. He appears as a

fisherman, fulfilling his role as predator, but his role is left without comment. As a result, there is no treatment of the contamination of nature, and specifically, the sea, as there is in The Sea Around Us.

As a final point, one might indicate the balance in Miss Carson's sentence and paragraph structure. The following series of sentences will serve as an example of the first:

> The summer's work was done. No more need of bright petals to lure the pollen-carrying bees; so cast them off. No more need of leaves spread to catch the sunshine and harness it to chlorophyll and air and water. Let the green pigments fade. Put on the reds and yellows, then let the leaves fall, too, and the stalks wither away. Summer is dying.[75]

And the following paragraph will show the balanced or envelope structure typical of her paragraphs:

> Now, with the passing of the storm, hunger was abroad on the great barrens. Most of the willows, food of the ptarmigans, were buried under snow. The dried heads of last year's weeds, which released their seeds to the now buntings and the longspurs, wore glittering sheaths of ice. The lemmings, food of the foxes and the owls, were safe in their runways, and nowhere in this silent world was there food for shore birds that live on the shellfish and insects and other creatures of the water's edge. Now many hunters, both furred and feathered, were abroad during the night, the short, gray night of the Arctic spring. And when night wore into day the hunters still padded over the snow or beat on strong wings across the tundra, for the night's kill had not satisfied their hunger.[76]

Although Under the Sea-Wind differs considerably from Miss Carson's best selling book, it has much to recommend it. One has to look long for a book that is as interesting, readable, and consistent in the clarity and vividness of its descriptions.

A quick reading of Rachel Carson's The Sea Around Us leaves the impression that she has attempted to give us as complete a picture of the sea as possible and in the process has produced a rather loosely

structured collection of essays. Such is often the case when some of the essays in a collection first appear in periodicals. The collection is certainly uneven. The general nature of the content in the first and third parts contrasts sharply with the detailed, more technical content of the second. And the reader will find most appealing the rhythmic prose and frequent poetic passages in the first part, while the last two may seem somewhat dull. However, The Sea Around Us is a book that one can read a second time, and a second reading will reveal certain intricacies of structure and themes that unify the work and make it a well-wrought piece of nonfiction.

At first, a structural pattern is not evident, but on closer examination the reader finds that Carson has presented her material in a chronological order. In Part I, she traces the beginnings of the sea, its formation and its landscape eons ago, and brings the reader back to the present time. In Part II she presents the cosmic forces which at present affect the rhythms of the sea and which presumably affected it from the beginnings. But she cannot be sure of those effects, and rather concentrates on what recent scientific exploration of the sea has told us about it as it is now. Part II comments on man's relation to the sea at the present but suggests man's future dependence on it.

Carson has also consciously ordered the essays within each part. Parts II and III each contain three essays, and the reader has no problem in seeing thematic unity in them. However, Part I has eight essays which may not apparently relate but which Carson has wisely ordered. "The Gray Beginnings" deals with the formation of the seas that we know today. She devotes the second and third essays ("The Pattern of the Surface" and "The Changing Year") to the surface waters, the

fourth ("The Sunless Sea") to the lower depths, and the fifth, sixth, and seventh ("Hidden Lands," "The Long Snowfall," and "The Birth of an Island") to the ocean floor and its landscape. The final essay in the section ("The Shape of Ancient Seas") deals with the confinement of the ocean waters to the boundaries thay have had in historical times. Thus, the reader finds in this Part a strict analytical structure.

The entire book has a kind of envelope structure. In "The Gray Beginnings" the reader finds man issuing from the sea, and in "The Encircling Sea" finds him going back to it. The circle is an apt image, for when he reaches this last essay, the reader finds that he has gone a full circle: from the mystery of man's emergence from the sea to the mysterious force that desires his return.

The Sea Around Us also has thematic unity. The basic themes for the entire work are set down in "The Gray Beginnings," an imaginative essay about the beginnings of the sea and the life that issued from it. Her themes include man's inability to pierce the mysteries of the sea and his insignificance in the face of natural forces, his dependence on nature (all of which ultimately depends on the sea), his desire to return to the sea, and his exploration and final plundering of the sea. In this first essay, Carson creates a kind of myth of the sea. It becomes an archetypal mother, the primal source that mysteriously gives issue to living things. In man, long descended from the mother sea, the reproductive cycle is symbolic of his evolutionary birth. He carries the salt of ancient seas in his blood, and he is subconsciously drawn to the sea, to return to the womb. The sea operates not only as such a symbol but becomes the sustenance for man.

A closer examination of some ways in which Miss Carson developed her themes will reveal the wide range from which she drew her materials. Such a range was dictated by her audience: she wrote not for the scientist, but for the general reader, one who could read The Sea Around Us with the most elementary training in the sciences. Although she is generally dealing with scientific information, really known and understood by only a few people in the world, she keeps it simple. She does not offer technical, scientific explanations for the phenomena she describes. Rarely does she use scientific names; if she does, she usually defines them by way of common terms or examples. She rarely burdens the reader with figures and dates (she does this in Part II and, as noted above, the work suffers). That she is constantly aware of her readers is clear in her comparisons of oceanic phenomena to continental phenomena which the reader clearly understands. One example is the extended comparison of the falling sediment to the snowstorm whose winds, like undersea currents, drift the snow and distribute it unevenly upon the surface of the earth ("The Long Snowfall"). Another is the comparison of submarine mountain ranges with the continental ranges ("Hidden Lands").

Keeping her material simple and interesting is a feat since most of Miss Carson's developmental material is made up of scientific facts and theories. She often supplies generous quotations from such sources as Charles Darwin, Thor Heyerdahl, R. A. Daly, Robert Cushman Murphy, and pilot manuals from various countries. More often, however, she is summarizing theories of geological time, of the earth's formation, of the oceanic currents, of submarine waves. In fact, a great part of "The Global Thermostat" is a summary and analysis of

Otto Pettersson's theory of climatic changes.

Related to such scientific materials is that which Miss Carson draws from history, particularly the history of science. "The Gray Beginnings" and "The Shape of Ancient Seas" are brief geological histories of the world, and there are few essays in which the reader does not find a survey of the history of oceanic research or exploration related to the particular topic under consideration.

Miss Carson also draws upon the literary artists who have treated the sea. She quotes Joseph Conrad's description of the winter sea[77] and comments on Edgar Allan Poe's use of his knowledge of tides in "Descent into the Maelstrom."[78] She also suggests reflections of climatic cycles in the themes and subject matters of the Icelandic Sagas and Eddic poetry.[79] Finally, Miss Carson identifies with the poets' attraction to the sea. Once, for instance, the sea presented a scene which set her to searching her memory for lines from Coleridge. "The sense of a powerful presence felt but not seen, its nearness made manifest but never revealed, was infinitely more dramatic than a direct encounter with the current."[80]

Finally, she draws from man's myths concerning the sea, which man has proved or disproved through time: Oceanus and Atlantis of the Greeks, Fimbul-winter and Götterdämmerung of the Germanic peoples, the Sargasso Sea dreaded by early seamen who dared to cross the oceans.

One of the most interesting aspects of The Sea Around Us is the style. As suggested previously, many of the themes turn around the central symbol of the sea as the mother from which life comes and to which it returns. This symbol is central to the discussions of all the

cycles present in the work such as the food chain, the currents, the tides, the weather, the advance and retreat of the sea boundaries and the ice caps. The recurrence of images related to this central symbol helps to unify the work.

The work is quite often figurative. Here are two brief examples:

> In waters where the protozoa Noctiluca is abundant it is the chief source of this summer luminescence, causing fishes, squids, or dolphins to fill the water with racing flames and to clothe themselves in a ghostly radiance. Or again the summer sea may glitter with a thousand thousand moving pinpricks of light, like an immense swarm of fireflies moving through a dark wood.[81]

And,

> Day after day the Albatross moved in a small circular room, whose walls were soft gray curtains and whose floor had a glassy smoothness. Sometimes a petrel flew, with swallow-like flutterings, across this room, entering and leaving it by passing through its walls as if by sorcery. Evenings, the sun, before it set, was a pale silver disc hung in the ship's rigging. . . .[82]

These examples should suffice to illustrate the metaphorical passages which abound in the work. In most instances, as in these, Miss Carson controls the metaphors. In the first passage, for instance, she is describing the phosphorescence she sees, moving light without heat; hence, "racing flames" with "ghostly radiance," the glitter of "moving pinpricks of light," and "an immense swarm fireflies." In the second passage, Miss Carson consistently compares the fog which surrounds the ship to the walls of a circular room (circular, because of her ability to see equal distances in all directions as she stands in the ship). These passages are indeed highly imaginative and well-controlled.

The reader also becomes aware of the abundant rhythmical passages. Such rhythms are achieved mainly through repetition of sentence elements or structures. For instance,

> Down beyond the reach of the sun's rays, there is no alternation of light and darkness. There is rather an endless night, as cold as the sea itself. For most of its creatures, groping their way endlessly through its black waters, it must be a place of hunger, where food is scarce and hard to find, a shelterless place where there is no sanctuary from ever-present enemies, where one can only move on and on, from birth to death, through the darkness, confined as in a prison to his own particular layer of the sea.[83]

Here the reader easily recognizes the repetition of sentence structures in "there is no alternation" and "There is rather an endless night." He also sees the repetition of sentence elements in "where food is scarce" and "where there is no sanctuary" and "where one can only move." This repetition of structures as well as the repetition of words creates the rhythmical quality of the passage. One cannot miss, either, the control in tone which Miss Carson exhibits here. She reflects the austerity of the ocean depths by the use of words which have negative connotation (beyond the reach, no alternation, endless, endlessly, scarce, etc.) or unpleasant connotations (night, darkness, cold, groping, black, hunger, enemies, etc.).

Here is one final passage for analysis:

> Imagine a whole continent of naked rock, across which no covering mantle of green had been drawn--a continent without soil, for there were no land plants to aid in its formation and bind it to the rocks with their roots. Imagine a land of stone, a silent land, except for the sound of the rains and winds that swept across it. For there was no living voice, and no living thing moved over the surface of the rocks.[84]

The repetition of sentence pattern in the first two sentences is obvious; it is perhaps a little more subtle, yet just as effective, in the last. But Carson goes a step further in her first two sentences. She creates rhythms within the sentences by repetition of words in her appositive constructions: "a whole continent. . .a continent without soil" and "a

land of stone, a silent land." One cannot help but pause upon reading passages such as these and note their rhythmic and poetic qualities.

Carson's The Edge of the Sea, her third book on sea life, rounds out her tour de force of the sea's history and the histories of the life that inhabits it and its shores. She tells of the struggles of that life which inhabits the intertidal areas and the "dry" land just above those areas. It is fitting that she waited until last to do this book, for she says in her preface,

> To understand the shore, it is not enough to catalogue its life. Understanding comes only when, standing on a beach, we can sense the long rhythms of earth and sea that sculptured its land forms and produced the rock and sand of which it is composed; when we can sense with the eye and ear of the mind the surge of life beating always at its shores--blindly, inexorably pressing for a foothold.[85]

She has already described those "long rhythms" in The Sea Around Us.

If The Edge of the Sea is distinctive in its subject matter among the works of Rachel Carson, it is also distinctive in its style. Whereas Under the Sea-Wind was highly descriptive and imaginative in style and The Sea Around Us, while factual, was highly metaphorical, The Edge of the Sea is lucidly factual. There are some lyrical passages in the last chapter, but otherwise, the reader is hard put to find the rhythmical passages that often punctuate the factual and descriptive passages of the other two works. Neither can he find any metaphorical passages. Instead, Carson presents a factual history of the various plants and animals that inhabit the shores of the eastern United States. Some typical short paragraphs, one from Chapter III and one from Chapter IV, will illustrate. First,

> Unless its life is prematurely ended by an enemy, a rock barnacle is likely to live about three years in the middle and lower tidal zones, or five years near the upper tidal levels. It can withstand high temperatures as rocks absorb

> the heat of the summer sun. Winter cold in itself is not harmful, but grinding ice may scrape the rocks clean. The pounding surf is part of the normal life of a barnacle; the sea is not its enemy.[86]

Second,

> The ghost crab, pale as the dry sand of the upper beaches it inhabits, seems almost a land animal. Often its deep holes are back where the dunes begin to rise from the beach. Yet it is not an air-breather; it carries with it a bit of the sea in the branchial chamber surrounding its gills, and at intervals must visit the sea to replenish the water. And there is another, almost symbolic return. Each of these crabs began its individual life as a tiny creature of the plankton; after maturity and in the spawning season, each female enters the sea again to liberate her young.[87]

Such passages are representative not only of the treatment of subject in this book but also of tone. The reader notes first the absence of figures of speech; there is not one in either of these passages. Instead, the prose is straightforward, the sentences short, and the diction simple. Most of the words are monosyllabic or dissyllabic and are chosen for their denotative meanings.

Here the scientist is writing with more specific knowledge of her subject than she did in her other two books. Part of the metaphorical style of The Sea Around Us undoubtedly resulted from the aura of mystery that surrounds the beginnings of the earth and seas and the inhabitants of the sea's depths. The material in Under the Sea-Wind was more general than it is here, covering a wide range of life, from birds to the creatures of the ocean depths. However, Miss Carson has not burdened her reader with a scientific tract. In fact, she rarely gives the reader the scientific names of the creatures she is discussing, and when she does, she also gives the common names. Her intent seems to be to make known and vivid to the lay reader this part of natural life; in other words, she seems to be fulfilling her role here as interpreter

of science. For those who wish to pursue the subject more scientifically, Miss Carson gives a scientific classification of the creatures in an appendix to the book.

There is one stylistic element, however, that this work has in common with Miss Carson's other works: for want of better words, its "forecasting" or "projecting" qualities. She moves the reader along by forecasting what is to come; she announces a general subject or idea and then proceeds to discuss it in detail. The following are some typical first sentences from paragraphs in Chapter V:

1. "Within the coral community there are other strange associations."
2. "On certain nights of the year, extraordinary events occur over the reefs."
3. "On these journeys the slugs seem to follow haphazard or irregular paths over the rocks."
4. "For its protection during the feeding journeys, Onchidium is equipped with means of detecting and driving away its enemies."

Each of these sentences announces a subject to the reader and in effect creates "blocks" of subject matter with which Miss Carson makes up her essays. For instance, "strange associations" and "extraordinary events" are general phrases which the reader recognizes as anticipating something to follow. Such a method usually produces a well-structured and readable essay.

Generally, The Edge of the Sea is readable, perhaps more than Miss Carson's other books on the sea. It does not contain the rather ornamental descriptive detail of Under the Sea-Wind or the sometimes

burdensome details of the history of scientific exploration of The Sea Around Us. Instead, Miss Carson gives the reader a rather straightforward prose which can be read quickly.

Loren C. Eiseley

Loren Eiseley's main purpose in The Immense Journey is to explore the mysteries concerning man's descent, to analyze as far as possible what man's existence means in relation to the natural world, and to suggest what does or does not lie ahead as man descends further into time. Yet, the work is not that of the scientist but that of a naturalist who uses his scientific knowledge when possible to shed light on the problem of man's physical and spiritual being. In fact, he recognizes the limitations of science. He says,

> Those who accompany me need not look for science in the usual sense, though I have done all in my power to avoid errors in fact. I have given the record of what one man thought as he pursued research and pressed his hands against the confining walls of scientific method in his time.[88]

When his scientific knowledge leaves off, he explores the problem at hand with the imagination of a poet. The result is that Dr. Eiseley emerges as a man who, like many others, ponders and struggles more fully with the meaning of his existence.

By way of introduction, Eiseley says that the essays are not offered as a guide but as "a somewhat unconventional record of the prowlings of one mind which has sought to explore, to understand, and to enjoy the miracles of this world, both in and out of science." He adds that they have "grown out of the seasonal jottings of a man preoccupied with time" and involve the Greeks' four elements:

> mud and the fire within it we call life, vast waters, and something--space, air, the intangible substance of hope

> which at the last proves unanalyzable by science, yet out of which the human dream is made.[89]

The Immense Journey is unified in ways not typical of collected essays. The first two and the last three essays consist mainly of personal incidents. The first are incidents which have caused Eiseley to reflect upon the evolution of man. That is what he does in the next eight essays. The last three cite incidents which cause him to reflect upon what that evolution means to him in the present and what it will mean to him in the future. The entire work is pervaded with a personal tone, for even in the middle group of essays, Eiseley's imagination takes up where science leaves off. And scattered throughout the work, too, are the moments of humor such as those in which he comments on the strange little creatures who struggle and reach out to ultimately become man. Before the time of flowers, Eiseley says, what was to be man was a creature "about the size of a rat," a "strange, old-fashioned" animal. "He was a ne'er-do-well, an inbetweener. Nature had not done well by him. It was as if she had hesitated and never quite made up her mind."[90] But the flowers appeared, without which "man might still be a nocturnal insectivore gnawing a roach in the dark. The weight of a petal has changed the face of the world and made it ours."[91]

The Immense Journey has an imaginative quality which results from Dr. Eiseley's skillful use of modifying sentence elements. Such use will become apparent to the reader if he examines the passages cited here. Of the evolutionary process he says,

> There are small scuttlings and splashings in the dark, and out of it come the first croak, illiterate voices of the things to be, just as man once croaked and dreamed darkly in that tiny vesicular forebrain.[92]

Eiseley's choice of croaking and illiterate to describe the sound of the creatures that existed early in evolutionary history achieves two basic effects. First, these words are suggestive of the weird world of early evolutionary time, the sounds of which, could we hear them, would be like a croaking that was different from anything we know and that we could not understand. Second, it gives him a basis for his comparison to man's evolution. Just as strange to us would be the croak of the creature that represents the evolutionary forefather of man.

Of the flowering plants he writes,

> The old, still, sky-reaching wooden world had changed into something that glowed here and there with strange colors, put out queer, unheard-of fruits and little intricately carved seed cases, and, most important of all, produced concentrated foods in a way that the land had never seen before, or dreamed of back in the fish-eating, leaf-crunching days of the dinosaurs.[93]

The reader notes the modifying elements here: "strange"; "queer, unheard-of"; "never seen before, or dreamed of." Eiseley is comparing the time of the flowering plants to the time before their arrival, the time of the "old, still, sky-reaching wooden world." The latter suggests a drab, simple world, while the former suggests an exotic, beautiful world. Yet this is a world strange to us today, and this imaginative description of it, as the one in the passage before it, is suggestive of the dream or vision of that strange world as it forms in Eiseley's mind. Although the reader realizes that much of the work is imaginative speculation, he realizes, too, that it is speculation based on the authority of scientific knowledge.

Finally, Eiseley said of nature writing that it was the job of the man returning from the wilderness to record marvels, not to define their meaning. In that way, he says, "it would go echoing on through

the minds of men, each grasping at that beyond out of which the miracles emerge, and which, once defined, ceases to satisfy the human need for symbols."[94] In this work, Eiseley has attempted to define the results of the marvel of man's development. He cannot define the meaning of that marvel, for what part of it that is not lost to history is too elusive:

> Here and there through the swirling vapor one catches a glimpse of a shambling figure, or a half-wild primordial face stares back at one from some momentary opening in the fog. Then, just as one grasps at a clue, the long gray twilight settles in and the wraiths and the half-heard voices pass away.[95]

Again, Eiseley's writing has the quality of a recorded dream or vision. Since man's past is so elusive, to "reconstruct" it he must let his imagination take up where science leaves off. The result is a highly imaginative rendering of intelligent guesswork.

Conclusions

One can draw certain conclusions which are implicit, if not made clear, in the foregoing analyses. In his study of nature writing as a genre, Judson Dodds McGehee reaches some conclusions about the writers he investigates that would as well apply to those treated here. First, McGehee concludes about the methods of the nature essayists that it is the "quality of the presentation and character of the author's personality which determine whether his work will be a contribution to belles-lettres or to natural science."[96] This, the reader will remember, is one of Burroughs's dicta for the nature essayist and what Krutch referred to as the "personal stamp." McGehee finds that the nature essayist is a perceptive man capable of careful observation, yet

one who takes imagination, intuition, and wonder to the field. In presenting their essays, the nature essayists aim at self-revelation concerning their own lives in nature. They hope to find fresh truth in old or commonplace facts and seek to learn the relationships between the facts they observe. It is the self-revelation that in a great part creates the interest John Burroughs felt was necessary for nature writing and which Herbert Read found necessary in defining literature. Finally, they are aware of the quality of the language, aiming for direct and forceful as opposed to loose or general statement, and use literary resources, whether their own journals and notebooks or authoritative writings in their field, or both. Mr. McGehee finds that nearly all go back to Thoreau in some way.[97]

Of the outer form of the essays, McGehee draws the following conclusions. First, magazine publication is the chief means of bringing the essayist's work before the public. Second, the essays vary in length, usually from fifteen to thirty-five pages, but the extremes are from fifty pages to one paragraph. Third, since the essayist brings himself to nature, his perceptions, emotions, and personality enter his essays, which are usually written in first person. Fourth, his mode is, of course, nonfiction which contains narration, exposition, description, and reflection, either singly or in combination. Finally, concerning structure and organization, McGehee finds that those essays periodically published have greater internal unity and are presented with a consciousness of artistic effect, climax, or suspense which seems to be apparent in those essays "which, chapter-like, are in some degree related to the larger organization of a book." What McGehee evidently has in mind here is something like Beebe's "Jungle Night"

and Eiseley's "The Flow of the River" as opposed to the "chapter-essays" of Carson's The Edge of the Sea. Whatever the type of essay, McGehee found that a self-conscious or studied structure was not typical of the essays of the six writers he studied.[98]

There is little in McGehee's findings, if anything, that the reader could not conclude as well about all of the writers treated above (Beebe and Peattie appear in McGehee's study also). Most of them have been specifically drawn in one way or another or have been implied in the preceding pages. However, drawing general conclusions about their style is dangerous, for, as Krutch says, the writers' works bear their personal stamps. The best the reader can hope to do is to draw his conclusions on style about each individual writer and then perhaps make some comparative statements.

One point that becomes most apparent from the analysis of William Beebe's work is his feeling of inadequacy in writing about natural phenomena. Some readers may tire of his admission of it, and rightly so, while others who feel that his essays belie that inadequacy may accuse Beebe of protesting too much. If the reader can get beyond these tendencies, then he might see that Beebe is calling attention to the fact that the task of the nature writer is a most difficult one, that indeed, as Beebe says in his description of the Opalina, our vocabulary sometimes breaks down when we attempt to describe the mysteries of nature. If, at times, Beebe was inadequate to the task, he is redeemed by those times when he is successful. He is perhaps the best writer of description among the group considered here. His acute perceptivity of the subtle shadings of color in nature, his sensitivity to its sounds and sights, and his deep sense of spatial relationships in a natural scene

are unsurpassed. Beebe is the master of control in description; more than any of these other writers, he is able to control his descriptions by making them turn about a master word or image. He is likewise the most enthusiastic of the writers, at least in his early work. Sometimes, however, that enthusiasm degenerates into whimsy, much to the reader's disappointment. McGehee finds in both Beebe and Peattie a "conscious and sometimes surprising use of technical and scientific terms as a trick of style. . . ."[99] Beebe does in some cases defend his use of technical and scientific terms, but in others the use of such terms escapes Beebe's control. Passages in which this happens are not difficult to spot, for the contrast with what the reader usually finds is most striking.

Throughout the preceding pages, there are numerous references to Peattie's theory that nature writing should have a poetic quality. To give his work that quality was his goal:

> Personally, I like to use the vocabulary of science in a literary way, and when writing of science I prefer a poetic vocabulary. This is not whimsy on my part. It seems to me only natural, and I think it doubles the strength of my style.[100]

However, he is able to achieve that goal only in A Book of Hours among his works studied here. There his prose in many places has an almost lyrical quality that neither the earlier An Almanac for Moderns nor the later Flowering Earth had. That is not to say, however, that those works have no excellence. In the former, Peattie showed that he was a master of descriptive writing; it is difficult to surpass the preciseness with which he puts the fine touches on his descriptions. In the latter, though it does not contain the precise descriptions, Peattie produces a rhythmical prose as good as any he produced elsewhere, and

in many passages he seems to capture in his prose something of the very pulses and rhythms of nature in process that are the subject of his book. However, it was a new kind of book for Peattie, and as the analysis above indicates, some passages are self-conscious and awkward. At times, too, it has a textbookish quality which results from his overuse of technical terms which he failed to use "in a literary way."

Joseph Wood Krutch feels that nature writing must have a writer's personal stamp on it. Perhaps the best way to describe Krutch's personal stamp is to say that his prose has a kind of warmth and humor that heightens its effectiveness and increases the reader's pleasure. Humor is noticeably absent from the works of Carson and Peattie and most pronounced in the works of Krutch and Beebe. It is interesting to note that those two writers are perhaps the best of the group. Cleanth Brooks finds that the thing which distinguishes twentieth century poetry from that of the nineteenth century is the use of humor, irony, and wit in treating serious subjects. Perhaps as much could be said of other twentieth century literary genres as well, including the essay. Krutch's literary achievement was marked in part by his particular background. Because of his training in belles-lettres, he brings to it a vast knowledge of history, philosophy, and art which he had gained from his reading of Western literature. Thus, his work is rich in allusions. Because he was not a scientist, he did not produce the careful, factual descriptions that one can find in the essays of Beebe, Peattie, and Carson. Nor is his prose generally poetic or rhythmical like that of Peattie or, in places, Carson. It lacks the imaginative quality of Eiseley's. Yet none of these writers can match the excellent figures of speech or the exact turn of phrase that marks Krutch's style. And

Krutch seems to be the most relaxed of these writers so that his prose seems always warm and conversational.

Although Rachel Carson did not write many essays, those she wrote exhibit a considerable range of skill. In Under the Sea-Wind she demonstrates her ability as a writer of narrative and descriptive prose. The Sea Around Us demonstrates her ability to write a prose that has rhythmical and poetic qualities. Finally, The Edge of the Sea contains a factually descriptive, yet fast moving, prose. Despite the excellence of these works, the reader sometimes wearies of perhaps too much factual information, the tendency toward giving animals human qualities in Under the Sea-Wind, the summaries of scientific theories, and the kind of documentary prose that he finds in some parts of The Sea Around Us. Yet despite the factual quality of much of her work, the reader is aware that he is not reading a scientific tract, that in selecting and arranging those facts, Miss Carson was ever conscious of her audience.

In many ways, the work of Loren Eiseley is the most stimulating of all that was analyzed here. Just as Beebe was struck by the mysteries of the Guianian jungles, Eiseley is struck by the mysteries surrounding man's long and immense journey through evolutionary time. He does not know exactly where man has been nor does he predict where man is going. But Eiseley does not despair; his prose is alive with his enthusiasm for life and his excitement about the prospects for the future. Because so much of man's past is hidden in the darkness of times past, Eiseley's descriptions of man's early days are highly imaginative. They are almost like dreams of man's racial beginnings, dreams which never exactly form in the mind of man. Related to this

imaginative quality are the exquisite descriptions in which Eiseley reconstructs what the past must have been like. There is also the good humor with which Eiseley views the pride and foolishness of man's opinion of himself. Perhaps most stimulating in Eiseley's essays are the questions he raises about man's past and future. If interest is necessary to a definition of literature, then Eiseley's essays more than qualify in that respect.

It is apparent, then, that these nature writers make a conscious effort at achieving a literary style and, for the most part, they succeed. Besides their style, the reader finds in their works some of the underlying philosophies and universal themes which are typical of other literary genres, and he knows that he is reading a conscious literary effort and not simply natural history or science. Perhaps in some way the foregoing pages show why Van Wyck Brooks, in From the Shadow of the Mountain, defends the works of the nature writers for their literary value. Perhaps, too, in some way they will justify the claim Brooks and Krutch make for nature writing as a part of American literature.

NOTES

[1]Herbert Read, English Prose Style (Boston, 1952), p. ix.

[2]William Beebe, Jungle Peace (New York, 1918), pp. 64-65.

[3]Ibid., p. 120.

[4]Ibid., pp. 153-154.

[5]Ibid., pp. 156-157.

[6]Ibid., pp. 160-161.

[7]Ibid., pp. 268-269.

[8]Ibid., p. 44.

[9]Ibid., p. 55.

[10]Ibid., pp. 62-63.

[11]Ibid., p. 123.

[12]Ibid., p. 68.

[13]Ibid., p. 202.

[14]William Beebe, Edge of the Jungle (New York, 1921), p. 22.

[15]Ibid., p. 30.

[16]Dial, LXXII (January, 1922), 106.

[17]Beebe, Edge of the Jungle, p. 49.

[18]Ibid., p. 50.

[19]Ibid., pp. 52-53.

[20]Ibid., p. 42.

[21]Ibid., p. 90.

[22]Ibid., p. 107.

[23]Ibid., pp. 109-110.

[24]Ibid., p. 120.

[25]Ibid., pp. 136-137.

[26]Ibid., p. 263.

[27]Ibid., p. 273.

[28]William Beebe, Jungle Days (Garden City, New York, 1925), p. 3.

[29]Ibid., pp. 3-4.

[30]Ibid., p. 19.

[31]Beebe, Jungle Peace, p. 4.

[32]Beebe, Jungle Days, p. 79.

[33]Ibid., p. 91.

[34]Ibid., p. 201.

[35]Ibid., p. 7.

[36]Ibid., p. 24.

[37]Ibid., p. 25.

[38]Ibid., p. 130.

[39]Donald Culross Peattie, An Almanac for Moderns (New York, 1935), p. 128.

[40]Ibid., p. 43.

[41]Ibid., p. 56.

[42]Ibid., p. 280.

[43]Donald Culross Peattie, A Book of Hours (New York, 1937), p. 3.

[44]Ibid., p. 25.

[45]Ibid., p. 26.

[46]Ibid., p. 127.

[47]Ibid., p. 24.

[48]Donald Culross Peattie, Flowering Earth (New York, 1939), p. 160.

[49]Donald Culross Peattie, "Nature and Nature Writers," The Saturday Review of Literature, August 28, 1937, p. 11.

[50]Peattie, Flowering Earth, p. 25.

[51]Ibid., p. 32.

[52]Ibid., p. 167.

[53]Ibid., p. 57.

[54]Ibid., p. 93.

[55]Ibid., p. 204.

[56]Ibid., p. 149.

[57]Joseph Wood Krutch, The Twelve Seasons (New York, 1949), p. 34.

[58]Ibid., p. 78.

[59]Ibid., p. 86.

[60]Ibid., pp. 132-133.

[61]Ibid., p. 46.

[62]Ibid., p. 66.

[63]Ibid., pp. 124-125.

[64]Ibid., p. 150.

[65]Joseph Wood Krutch, The Desert Year (New York, 1963), p. 160.

[66]Ibid., p. 220.

[67]Ibid., p. 42.

[68]Ibid., pp. 75-76.

[69]Ibid., pp. 104-105.

[70]Ibid., pp. 105-106.

[71]Ibid., pp. 112-113.

[72]Rachel Carson, Under the Sea-Wind (New York, 1941), p. 35.

[73]Ibid., p. 79.

[74]Ibid., p. 84.

[75]Ibid., pp. 38-39.

[76]Ibid., pp. 30-31.

[77]Rachel L. Carson, The Sea Around Us (Revised ed., New York, 1961), p. 47.

[78]Ibid., p. 150.

[79]Ibid., pp. 165-166.

[80]Ibid., p. 125.

[81]Ibid., p. 44.

[82]Ibid., p. 125.

[83]Ibid., p. 49.

[84]Ibid., p. 24.

[85]Rachel Carson, The Edge of the Sea (New York, 1955), p. 7.

[86]Ibid., p. 53.

[87]Ibid., p. 138.

[88]Loren Eiseley, The Immense Journey (New York, 1957), p. 13.

[89]Ibid., pp. 12-13.

[90]Ibid., p. 75.

[91]Ibid., p. 77.

[92]Ibid., pp. 58-59.

[93]Ibid., p. 72.

[94]Ibid., p. 178.

[95]Ibid., p. 88.

[96]Judson Dodds McGehee, "The Nature Essay as Literary Genre: An Intrinsic Study of the Works of Six English and American Nature Writers" (unpub. Ph. D. dissertation, University of Michigan, 1958), pp. 53-54.

[97]Ibid., pp. 54-65.

[98]Ibid., pp. 68-79.

[99]Ibid., p. 141.

[100]Ibid., p. 64, quoting Peattie.

CHAPTER VI

CONCLUSION: THE CULTURAL SIGNIFICANCE OF THE NATURE WRITING

The foregoing study of twentieth century American nature writing has presented some of the history of American nature writing, a definition of the genre and a survey of the literary theory concerning it, an analysis of some of the basic themes treated by the writers, and an evaluation of the literary merits of five writers. The works of William Beebe, Donald Culross Peattie, Joseph Wood Krutch, Rachel Carson, and Loren Eiseley have made up the core of the study. However, whenever space allowed, references to the works of other writers were made so that the reader might realize that the number of good nature writers is not limited to a few and that the conclusions drawn about the core works in the following pages could be made as well about the works of many other writers.

The historical survey of nature writing as a genre in Chapter I reveals a number of points useful in assessing the cultural significance of the genre. Chapter I shows that nature writing is an old type of literature and has been produced in America from the time of colonization. In a more restricted sense of the term, "nature writing" in the twentieth century has come generally to mean essays that have as their primary purpose the literary treatment of natural history. In fact, most twentieth century nature writing takes the form of the informal

essay. Nature writing or, more specifically, the nature essay as we know it today represents a "department" of American literature (Krutch's term) which, founded by Henry David Thoreau, was made popular and given much of its definition by John Burroughs.

Generally, it is best defined by comparison to scientific writing to which it is akin in some respects. It is synthetic rather than analytical, subjective rather than objective; it appeals to the emotions as well as to the reason and understanding. It gives a humanistic interpretation to natural science. Burroughs says that the human sentiments such writing awakens in us make its interest that of literature rather than of science. Since it is a genre closely tied to science, changes in attitudes toward science are reflected in some ways in the nature writers.

As scientific knowledge has grown, more scientists have become nature essayists, and have made their works a kind of balance between the view of the scientist and that of the humanist. The nature writers of the twentieth century have turned their attention to problems of man in this world, particularly to his spiritual and physical condition which results from the peculiarities of the modern world. They have turned from the nineteenth century attitude toward nature, whether the belief in nature's benevolence as in the philosophies of Emerson and Thoreau or the determinism or indifference of nature found in the philosophies of the late-nineteenth century naturalists. They have assumed a new attitude. Whether it is Peattie's "realistic" one based on science or Krutch's "new kind of pantheism," all take into account the interrelatedness of man with nature.

From this summary, one can arrive at certain conclusions concerning the cultural significance of the nature writing. First, nature writing has emerged in this century as one of the departments of American literature and, as such, deserves to take its rightful place among the other literary genres. As Philip Marshal Hicks and Robert W. Bradford have shown, it was produced in undefined form from the earliest days of American history until Thoreau's time. Its form as we know it today was established by Thoreau, whose nature writings have been given a place in the literature of the American people. Later writers have refined and, in rare cases, improved on Thoreau's form; the literature produced by those writers deserves treatment in the literary history of America.

Besides its close historical ties to American culture, nature writing shares with other literary genres the fact that its formal requirements are as well established as those of most genres. In other words, it has accompanying it a body of literary theory that the student of nature writing must consider in any study of the genre. He must likewise take into account the body of criticism of this genre (at present, a small but growing amount) that now exists. Finally, it is not a static genre. Like most, it is susceptible to innovation. Casual reading among the works of various writers supports that conclusion. However, one fact remains constant. Because most nature writing takes the form of essays, the nature writers can treat any aspect of nature and man's relation to it. As a result, the reader finds among the pages of the nature writers a treatment of most of the basic themes he finds treated in other literary genres. It would appear, then, that if there is cultural significance in other literary genres, there is such

significance in the essay generally or in the nature essay specifically.

Chapters II through IV investigate man's relationship to nature in twentieth century, the basic theme of most twentieth century nature writing. Chapter II defines the role of the nature writer in the twentieth century society; since the nature essay is essentially literary natural history, the nature writer's role is defined in terms of his attitude toward science. His role is basically that of an interpreter of science. He stands between the scientist and the layman, who does not understand the specialized knowledge of the scientist. The nature writer generalizes about that specialized knowledge. However, he is not a popularizer of science. Although all nature writers put their faith in science in varying degrees, they are not writing scientific material for a popular audience. Rather, their efforts are literary, in most cases essays dealing with man's relationship to nature. For the most part, they find that because of so-called "applied" science, man has become alienated from nature in the twentieth century. By writing about nature, these writers hope in some way to help man regain an emotional recognition of his relationship to nature as a balance for his intellectual recognition which science gives him. Indeed, they feel that both man's physical and his spiritual well-being depend on his awareness of his oneness with other life forms, on his sense of identity with nature.

That most people care little for the natural world seems evident today from the facts being made apparent during recent discussions on the present ecological crisis. Much of their attitude no doubt results from their alienation from nature which, in turn, results from the condition of modern life. If the nature writers are correct in saying

that man's spiritual as well as his physical well-being depends on his awareness of his close ties to nature, then their social role becomes more vital as the population increases and man continues to destroy nature at a greater pace. Ironically, after it is perhaps too late, American society is becoming aware of what the nature writers have been saying for decades. More ironic is it, too, that American society finds that it has long ignored not only a possible solution to its present dilemma but also the excellent literary art in which that solution was expressed.

The nature writers' views of the spiritual dilemma in which man finds himself are presented in Chapter III. Not by preaching but by revealing their own personal philosophies, the nature writers have demonstrated that in a world of chaos and spiritual wasteland, some men have been able to arrive, through their respective attitudes toward nature, at personal philosophies which make their lives satisfying and allow them to escape the effects of isolation felt by other men. The philosphies vary, of course, from writer to writer, but most have pantheistic elements in common. These writers do not suggest the likelihood that most of mankind could develop a religion or philosophy of nature such as they have found. That fact, however, does not make their statements on man's sense of alienation and his spiritual dilemma any less significant than the statements on those matters in other literary genres. In fact, their writings may be more valuable than those of the poets and novelists in that respect because the nature writers base their writings on scientific fact. However, the nature writers do not, any more than the novelists and poets, attempt to palm off their personal philosophies onto the reader. What the nature writer

suggests is that the solution to man's spiritual dilemma may lie in its very source--man's concept of his relationship to nature. It could well be that they have found one source of alienation felt by the poets and novelists in this century. Further examination of the theme of alienation in modern poetry and fiction would perhaps show how much of the sense of alienation results from man's retreat from nature into the artificial world which he has created.

Chapter IV deals with the nature writers' attitudes toward the preservation of nature, preferably in wilderness states. They believe that in such wilderness areas may lie the spiritual comfort of future generations. In the future those areas will be the only places where men can retreat from the technological world and renew or reaffirm their ties with nature. The reader finds a sense of urgency in the essays on this subject because increasing population steadily decreases the land areas which might serve as natural museums or shrines. The nature writers are not generally optimistic concerning man's attitude toward conservation. Before he can preserve enough of nature to insure the preservation of his race, man must develop a land ethic; he must replace his economic view of nature with a genuine love for it. He must learn to preserve it because it is nature. The nature essays on these subjects have a humanitarian purpose; the writers call for the preservation of a part of nature so that future generations might know the natural world that this generation has known. If the comfort of the human spirit and possibly the preservation of the human race itself are important, then it would seem that any literary expression of those subjects, as the nature essays are, would be significant enough to deserve a careful study.

Conclusions concerning the literary achievements of the nature writers have been drawn in Chapter V. Generally, the nature essays meet the formal requirements of the informal essay. The styles vary, of course, according to the writer. Cahpter V is, in part, an analysis of each writer's style. It should be apparent from that analysis, however, that the nature essays contain those elements of style characteristic of the best English prose styles. Besides those conclusions, one might draw at least one more significant one. The reader who is not sensitive to exceptional language, aesthetics, or ideas can really have little appreciation for the nature essays. And appreciation of their art is as important as their content, for the love of beautiful things for their own sake is a vital part of the new way of thinking that they feel man must develop if he is to preserve himself as he faces present and future physical and spiritual crises.[1]

This dissertation represents, essentially, an analysis of the nature essayists' definition of man's relationship to nature in the twentieth century and an evaluation of the merits of their literary efforts. Its value lies in the fact that it is the first work of its kind on the twentieth century American nature writers. Therefore, it should serve as a basis for further studies of these and other excellent writers and other basic themes they treat. The revived interest in nature and man's relationship to it will no doubt result in an increased interest in the nature writers. Such interest will create a demand for further study of the genre. Although Hicks, Bradford, and McGehee adequately define the genre and clearly outline its historical development, further theoretical considerations need to be made concerning nature writing as a genre of the English speaking world. Peattie felt that the best

nature writing was either about the New World or was produced by the New World men, and Olson finds that the peculiarities of American geography and history have influenced the development of the genre. Such a study might indicate that the nature essay is the only truly American genre. Finally significant study could be made of the relationships between themes in nature writing, such as those treated above, and treatment of those same themes--or the lack of treatment of them--in other literary genres. Such relationships have been only hinted at or alluded to in the preceding study.

It could well be that such studies suggested here would bear out the ideas of Joseph Wood Krutch and Van Wyck Brooks presented early in Chapter I. Krutch says that the importance of nature writing as a department of literature derives from the fact that most writers of novels, poems, and plays "no longer find the contemplation of nature relevant to their purposes--at least to the same extent they once did," and Brooks says that nature writing is generally ignored because it is "concerned with permanent things outside the changing human world that interests the novelists and most of the poets." If lasting literature is that which deals with permanent or universal things, then much of nature writing should certainly be included in that which future generations will read with pleasure and appreciation.

NOTES

[1]Joseph Wood Krutch makes the point that in wildness is the preservation, not redemption or salvation, of the world. See his If You Don't Mind My Saying So. . . (New York, 1964), p. 374.

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[Anonymous, untitled review of William Beebe's Jungle Peace.] Dial, LXXII (January, 1922), 106.

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VITA

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Candidate for the Degree of

Doctor of Philosophy

Thesis: TWENTIETH CENTURY AMERICAN NATURE WRITING: A STUDY IN THEMES AND TECHNIQUES

Major Field: English

Biographical:

Personal Data: Born in Salina, Oklahoma, May 23, 1939, the son of Daniel Franklin and Irene Paralee Littlefield; married August 8, 1960, to Patsy Ann Pritchett; son, Robert Grant, born June 19, 1961.

Education: Graduated from Central High School, Tulsa, Oklahoma, in 1957; attended the Oklahoma State University, Stillwater, 1957-1960; received the Bachelor of Arts degree in August, 1960, with a major in English; attended the University of Arkansas, Fayetteville, 1960-1961; received the Master of Arts degree in January, 1962, with a major in English; attended the summer sessions at the University of Arkansas, 1963 and 1968; attended the Oklahoma State University, 1968-1970; completed requirements for the Doctor of Philosophy degree at the Oklahoma State University, May, 1971.

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