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Wilderness of Hope: The White Mountains

George DeWolfe

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WILDERNESS OF HOPE
THE WHITE MOUNTAINS

George Edward DeWolfe
Candidate for the Master of Fine Arts
in the College of Graphic Arts and Photography
of the Rochester Institute of Technology

November 10, 1972

Thesis Committee

Neil Croom, B.S., M.Ed., Associate Professor, School of Photographic Arts and Sciences, Chairman

Lakshmi Mani, B.A., M.A., Ph.D., Assistant Professor, College of General Studies

Robert H. Johnston, B.S., M.A., Ph.D., Dean, College of Fine and Applied Arts

Approved
Neil Croom
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of Fine and Applied Arts
To Richard D. Zakia

Who has led me along the paths of expression to a crossing where doubt fades and belief continues. He has shown me how the mind can, struggling with its inner wanderings, project what Donne called "infinite love in a finite room." This is a crossing beside which the outer universe of light-years is meaningless.
Acknowledgements

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George E. DeWolfe

Rochester, New York
October, 1972.
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We say, I will walk abroad, and the truth will take form and clearness to me. We go forth but cannot find it. . . Then, in a moment, and unannounced, the truth appears. A certain wandering light appears, and is the distinction, the principle, we wanted.

Ralph Waldo Emerson

It was not to see a few particular objects, as if they were near at hand, as I had been accustomed to see them, that I ascended the mountain, but to see infinite variety far and near in their relation to each other, thus reduced to a single picture.

Henry David Thoreau

I have experienced -- as a photographer -- the persistent enigma, the finding of some basic key of statement and communication. This key depends upon more than the esthetic factors; the problem as a whole must be explored, for the implications -- social and otherwise -- are far-reaching and intricate. Interpretation is more than a factual enterprise; it relates not only to the communication of literal aspects, but to the revelation of the deeper impulse of the world.

Ansel Adams
"Man," Henry David Thoreau has somewhere remarked, "cannot afford to be a naturalist, to look at Nature directly, but only with the side of his eye. He must look through and beyond her."1

"... through and beyond. ..." The phrase comes down to me across the years and pauses hesitantly. It is in the heart and mind, I have come to believe, where the search commences. It takes the imagination to grasp this faint urge of freedom, the wistful glance through the forest, to sense the mysterious one-dimensional world beyond the natural. I know little about how these remarkable passages through an invisible thicket occur, but I have seen them happen. I believe in them. I can attest to them. That world is there.

It is of the discovery of that world that I would write. To tell the story is to establish figuratively how great artists, poets and photographers have looked upon and have evoked the illusive lights and leafy shadows of the natural world.

With Thoreau, this search was unique. His gaze touched the old roots and leaf falls of Walden Pond, and his mind, like the outer universe itself, was engaged in pouring over limitless horizons. From Thoreau we have learned what it is to evoke and sometimes explain the miraculous unexpectedness of nature which our technological society tries so vainly to
eliminate.

Thoreau expanded the horizons of men by the sheer power of his own tremendous thought. The world of nature, seen through his eyes, has never been seen in quite the same manner since. Something has been added which does not lie within the careful probings of natural science. He held up a questioning finger to the winds of time and hurled gigantic questions at seemingly immovable stones.

If we look for a moment at Thoreau's ascent of Mt. Kathadin in Maine, we come upon the climb of a mountain which is, I believe, nearly unprecedented in the pages of mountain-eering literature.² He is able to evoke from the mountain the physical sense of the earth and casts upon its summit the side-long glance of his thought, which figuratively splits stones and calms the storm.

At length, leaving his companions far behind, Thoreau, now above timberline, enters what he calls a "cloud factory"³ as he stumbles over "the raw materials of a planet dropped from an unseen quarry. . ."⁴ the relentless boulder fields of the high tundra. From the heights of the mountain, where mist forms and is as quickly swept away, he remarks, feeling the presence of gods,

It was vast, Titanic, as such as man never inhabits. Some part of the beholder, even some vital part, seems to escape through the loose grating of his ribs as he ascends. He is more lone than you can imagine. There is less of substantial thought and fair understanding
in him than in the plains where men inhabit. His reason is dispersed and shadowy, more thin than subtle, like the air. Vast, titanic, inhuman Nature has got him at disadvantage, caught him alone, and pilfers of some of his divine facility.  

Instinctively, he felt that he would then witness a momentous miracle, veritably and suddenly boiling out of the heap of stones and streaming cloud wrack. He marveled how thin vapors, stones, wind, and sun form an alembic remarkably like the mind, but that they can also throw off ominous shadows that threaten to take real shape when no one is looking. Man, figuratively, "man on the plains", cannot comprehend this spirit, and they would, if they could, confine the spirit to their own narrow thoughts, lest the spirit do some imaginable and shocking act -- create, as an afterthought -- a being more thoughtful and more beautiful than man.

Perhaps I most fully realized that this was primeval, untamed, and forever untamable Nature, or whatever else men call it, while coming down this part of the mountain... Nature was here something savage and awful, though beautiful. I looked with awe at the ground I trod on, to see what the Powers had made there, the form and fashion and material of their work. This was the Earth of which we have heard, made out of Chaos and Old Night... There was clearly felt the presence of a force not bound to be kind to man... What is it to be admitted to a museum, to see a myriad of particular things, compared with being shown some star's surface, some hard matter in its home! I stand in awe of my body, this matter to which I am bound has become so strange to me. I fear not spirits, ghosts, of which I am one -- that my body might -- but I fear bodies... What is this Titan that has possession of me? Talk of mysteries! Think of our life in Nature... rocks, trees, wind on our cheeks!... Who are we? Where are we?

"What is this Titan that has possession of me?" he broods.
Intuitively, Thoreau felt the terror of the creative spirit of nature locked within the confines of his brain. He seems to have been informed interiorly, however, that the way he traversed had been visited at long intervals by great minds. Though he sought a road that no man seemed to be walking on, the nature that we profess to know never completely contained him. He constantly ended in paradox: "Who are we?" He had been struck by the shadowy spirit that flies to and fro in our minds as fleetingly as the mists of the mountain upon which he stood.

Perhaps it was the destined role of Thoreau to be a stranger among men. In his own time he failed to influence the common man, but as time has passed, he has come again. He has come now because he recognized on a desolate mountain that the thoughts of men are like clouds, and a puff of wind may govern them, or, in Thoreau's case, torment those thoughts into greatness. There are few among us who can notice the passage of a streaming cloud over a mountain's summit and ask ourselves such profound questions. David Brower has made the statement that we should have "... a chance to seek answers to questions we have not yet learned how to ask." Thoreau asked these questions over a century ago -- ones to which we still seek answers. Thoreau knew then, as we know well now, that science and the human spirit together may find a way across a mountain whose shadow still looms menacingly above us. His own faith has been ill-kept within our time.
Such experiences as Thoreau's ascent of Kathadin are not, however, confined to space or time. It was such an event that came to me one afternoon on the high tundra of the White Mountains. I was tired and alone.

I had come down from a mountain and was descending a long ridge in a slanting shaft of afternoon sunlight. The timberline was rushing up before me as the last rays of light brushed the mountainside. It is here, just above the forest, where neither rock nor tree quite prevails, that I distantly became aware of a long shadow, my own, looming against the hillside, as though lingering there for night to fall.

At the instant the sun vanished, the shadow faded into the forest as though it had wrenched time so as to walk from the waning light of day through the cleft of darkness. My feet faltered and I almost fell. I was walking to meet a phantom who had been with me for twenty-seven long years. The shadow had, in a moment, spread out before me the wild background of a forgotten past and had brought it out alive, cast upon the spruce forest in the flowing twilight. We had met, and, as my dry mouth strove to utter a word of recognition, I became aware that he had passed me as a stranger, his gaze directed beyond me, and that he hastened elsewhere. I had beheld the image, but not the reality, of myself.

I groped for a boulder and braced my continued descent. Around me stones seemed to move like shadows. I suppose I was
a similar shadow, made so by the one I possessed. But what did it mean? The shadow had been part of me in life. We had been friends, not enemies. What terror, except the living's fear of the dead, could have so powerfully overtaken me.

On the dark winding trail through the forest, trudging homeward, the answer came. I had betrayed myself. Through the pangs of youth and adult desire I had betrayed myself. I had studied natural science and geology and had been immersed in the pains of learning photography. I had always loved nature and was familiar with her outward ways. But all the time the accusing spirit, the shadow, had lingered in my brain. Finally exteriorized, he had cast himself upon me, alone, on the low heath of a distant mountain in the autumn light. That looming shadow had pointed a figurative finger backward into the entangled gloom of a forest from which it had been my purpose to escape. I crossed then, I believe now, the juncture between two worlds. One, the outward world of natural science and order, the other, the realm of a greater and a greener enchantment which, try as I may, I will never be able to avoid again, however far I travel. I caught there the spell of the world beyond what we call natural, on the barren waste of the tundra at twilight, beneath the tumbling debris of mountains, where the heart and mind run on alone.

It may appear that I have been wandering mentally amidst irrelevant and strange events -- a spirit glimpsed by a poet
through the wisp of cloud on a mountaintop -- a shadowy figure cast out against a forest. I have touched upon solitude, as Thoreau, the dweller along the edge of the forest, once touched it. This loneliness often and, in the case of the artist, frequently leads to an intense observation of nature and a critical self-examination. "Who are we? Where are we?"

Thoreau expresses the intense self-awareness that is the burden and hope of the true artist. The spirit literally cannot contain itself. It will talk as it did on paper, to Thoreau, or to Cezanne, in his apples, or to Ansel Adams, in the Yosemite.

It is the part of the artist to evoke from nature the world beyond, just as it is the part of the scientific naturalist to impose upon it taxonomic order and certainty. Man desires the fact but he also transcends it. In this, as in so many other aspects of life, man inhabits a realm half in and half out of nature, forever reaching beyond the fact and the law. The pen, the brush, and the lens represent the eternal search, that sensitive recognition of the world beyond the statistic where the individual exists as a unique creature. My search, like Thoreau's, has been to wander along silent forest pathways in torment of hope to learn of the miracles hidden in common earth.

It has been my purpose and objective "... to photograph the beauty, shape and form of the diversity of wilderness in the White Mountains. I have tried, through the power of the
lens, to feel the form of a stone, the presence of a mushroom, and the shape of shafts of light as they drift through the forest. The search has been compounded of fear and hope of mountains, dark thickets, and wild places which, to the heart and mind, seem to contain the hint of a lurking spirit, beautiful, yet at the same time, indifferent, to man. It is the diversity of nature, that mysterious principle which leaves all other mysteries concerned with life insignificant by comparison, through which the shapes and forms are organized. Like some dark passing shadow in nature, it molds the toadstool and spaces the chirrups of a gray squirrel in its nest. The principle of diversity arises out of nature to the perceptive artist and, thus, arrays itself in form. Amidst the seeming order of natural things, the world of predictable law and conformity, the artist sees the individual act, form, and event. These images are a kind of disobedience of normality, unprophesiable by science, unduplicable by other individuals on demand. They are part of that unpredictable newness that the artist seeks.

Across the twilight landscape I have traveled with my burden of fear and hope bearing with me the shadow, the spirit, which seeks from the dark world of the natural some dawn beyond the horizon. I am unable to cast it off, so I must simply believe in it and live with it.
But I hesitate now. It is plain that something is wrong. The shadow is momentarily escaping, a sense of bigness beyond my power to grasp, the essence of life in its great dealings with the universe. It is better, I have decided, for emissaries returning from the wilderness, even if they only carry a camera, to record their marvel, not to define its meaning. In that way those miracles will perhaps echo in some other individual mind from the beyond out of which they emerge.
History of a Feeling

The photography of the natural scene has had a sporadic and, at the same time, glorious history. From the industrious labor of the first daguerreotypists, through the hardy individualism and documentation of the frontier photographers, we have arrived, if only momentarily in this century, at a place where that shadowy essence of nature has been expressed on film by men who have cast a sideways glance toward the natural in a manner not unlike Thoreau's. It is my contention that every man who attempts this kind of photography possesses within himself a spirit similar to the one Thoreau found on the heights of a mountain. If, in addition to this spirit the man is a sensitive craftsman in his work, he will see strange shapes amidst forest trees. The history of the photography of the natural scene mirrors aesthetically what an individual must learn to become aware of the many possibilities confronting him. To begin such a record, it may be well to start with the photography of the frontier 100 years ago. This brief record, as it unfolds, may defend with something of its own magic the small story of an observer who has tried to press against the walls of photographic expression in his own time.

From the exploratory surveys of the West between 1865 and 1880, the names of Timothy J. O'Sullivan and William Henry Jackson emerge as the two best known documentary photographers.
Of all the recorders of the late nineteenth century West who might be said to have been intimate with that lonely wide open expanse, these two men possessed unusual vision for the job at hand. Both were veterans of the Civil War, and one of them, O'Sullivan, had covered that confrontation under Matthew Brady. Jackson, a painter, had an established studio in Omaha, Nebraska. The photographs of these men and others of that period mark the beginning of what may be called landscape photography. The historian Taft remarks,

"The works of the . . . photographers of the west . . . brought to the rest of the world the first authentic pictorial records of this rapidly developing country. Those of Jackson formed an important link in the creation of our present National Park System. It is almost impossible to estimate the effect of these photographs, especially when we consider the number of people who visited our Parks since 1872. If we admit that the American photographer played even a small part in making the parks possible, we are helpless in attempting any estimate of his influence on American life. . . Many times, doubtless, an idle glance created the desire to see for oneself the original of the scene depicted and putting the desire into action, many were led to new experiences, new modes of life, and to the attendant changes in the destiny of the individual."

This statement is neither frivolous nor speculative. It is one of the clearest estimates of truth I have ever read in photographic literature. Too many times we have been told by historians of photography that the early pioneers were interested in documentation only. Taft, though himself formerly a scientist, spends much time wading through the vast mumble of workers engaged in this effort. Yet, in passing, he is bold
enough to hint at this feature not touched upon by other researchers: the fact that Jackson, O'Sullivan and the other numerous photographers were engaged, not only in documentation, but also in feeling the sense of the natural world, and trying to record it through the clumsy apparatus of the wet plate. Their photographs leave no doubt that they captured this feeling. But they have left us few words.

During the King survey of 1868, O'Sullivan remarks, in a rare moment of candor, standing on the rim of the Shoshone Falls of the Snake River:

There is in the entire region of the falls such wildness of beauty that a feeling pervades the mind unconsciously. . . you will certainly feel sensible of the fact that you are in the presence of one of nature's greatest spectacles as you listen to the roar of falling water and gaze down the stream over the fall at the wild scene beyond.13

Jackson, in the whole of his autobiography, remains objective and aloof. Only once, when climbing up over a ridge to view the Mountain of the Holy Cross, does he exclaim,

It was worth all the labor of the past three months just to see it for a moment. . . Below us as well as before us the clouds billowed out majestically. Then when the mist was heavy in the valley the sun came out. . . I have never seen another like it. . . The day, or at least the morning, promised to be magnificently clear and sunny. . . In order not to lose a single moment I hurried wearily back to the top and set up my cameras.14

The views he obtained of that peak are still, even today, remarkable.15 Henry Wadsworth Longfellow was so entranced with one of those photographs that he wrote a poem on it. Taft
recounts:

This report (the Hayden survey of 1873) chanced one day to fall into the hands of Longfellow, the poet. Longfellow, in whom pictures readily induced a creative mood, was arrested by a picture of that mysterious mountain upon whose lonely, lofty breast the snow lies in long furrows that make a rude but wonderfully clear image of a vast cross. At night, as he looked upon his chambered wall, his thoughts formed themselves into the verses that follow...

There is a mountain in the distant west

That, sun-defying, in its deep ravines

Displays a cross of snow upon its side

The speculation that the photographs of these pioneers represent a deep-seated love of the wild places of earth is looked upon askance in some quarters as reading too much into obvious factual history. Yet I know what these men have felt and experienced! They could not have helped but feel this wonder or they would never have desired to photograph, to inform, to, if you will, "document", the wilderness, and done it so well. The images and writings of the wilderness photographers of the twentieth century confirm this.

The immediate years after the great Western surveys were dominated by the gala of portrait studios and the sentimentality of "pictorial" photography. As a rebellion against the rules of the pictorialists and impressionists, Alfred Steiglitz, along with Paul Strand, Edward Steichen, and several other artists created the Photo Secession in the late 1890's. The movement carried the expression of photography to an equal
standing with painting.

One afternoon, Stieglitz had a visitor in his gallery on 509 Madison Avenue in New York. Nancy Newhall recounts the story:

Stieglitz took "the young photographer's" portfolio without a word, untied it, looked at the first print a long time, replaced the tissue exactly, looked at the second print. . . They were quiet and rich in tone and substance -- a leafless poplar reaching to the sky as an arrested fountain of pale light; with life, they were cool and enduring as stone.

Stieglitz came to the last print, shaped the pile carefully together, closed the portfolio and tied the bows neatly. The young man, sitting on a radiator, thought, "Well, that's that. I needn't have come," and rose to leave.

"Sit down, young man."

He sat. Stieglitz untied the portfolio again, and still in silence, went back over every print. Finally he looked up. . . and said, "Some of the finest photographs I've ever seen."21

At that point, the legend of Ansel Adams was born. In later years Stieglitz was to say, "It's good for me to know that there is Ansel Adams loose somewhere in this world of ours."22 Stieglitz knew Adams not only through his exceptional photographs, but also through their correspondence,23 led Stieglitz to believe that, among the great photographers of our time, Adams felt most intensely the beauty and form of the natural world. It is my belief that many contemporary photographers today have lost sight of Adams the "humanist", for Adams the technician. He remarks himself,

"I am definitely not a scientist or a technician, I was trained -- rather arduously -- as a pianist, and this training, I am sure, assisted me in the development of the discipline which artists must possess in
medium. We know that the Beethoven Sonata No. 110, for example, is incredibly beautiful if perfectly performed -- and a horror if not. So much photography today is, frankly, imperfectly performed and this is ironic in the face of the marvelous equipment and materials provided."

It is perhaps part of Adam's greatness that he has been misunderstood. Through the maze of Zone System terminology, amidst many books on technique and application, his own style has been misinterpreted. What others have failed to do is balance his creative approach to nature with his technical approach. Adams' esthetic and humanistic interests are as much a part of his greatness as the technical skills which have brought him renown. In 1926, on a trip to the Sierra Nevada, he first became aware of the feelings that had captured Thoreau some 75 years before.

I awakened, opening my eyes on a gigantic glittering dome of stars. The Galaxy, a vaporous plume of white fire, poured down the southern sky, extinguished by the black incisive spires of the forest. The stars loomed with terrifying brilliance, the darkness beyond them throbbed with unseen light. A cold wind passed between me and the remote splendor of the night, drawing sound after it through the groves of evergreen and aspen. The wordless meaning trembled on the mind's edge and passed on, while with almost hypnotic persistence, I watched the stars slowly stream over the earth. A short spell of sleep, and the white tower of dawn had reared out of the east. . . I walked toward the knife-sharp forest with the cold burning of the morning star glinting above me. I thought, as I ploughed through the dew-damped grass, that there could be nothing so complete in its glassy splendor as the sequence of star-light and dawn-light, with the crystalline chaotic murmur of the stream, and the hollow movement of wind. There was no sentimental precedent, there was no imaginative experience with which to compare this magic actuality. My reactions spared
neither my emotions nor my body; I dreamed that for a moment time stood quietly, and the vision of this actuality became but the shadow of an infinitely greater world, that I had within the grasp of consciousness a transcendental experience.26

Another time. . . I was climbing the long ridge west of Mount Clark. It was one of those mornings when the sunlight is burnished with a keen wind and long feathers of cloud move in a lofty sky. The silver light turned every blade of grass and every particle of sand into a luminous metallic splendor; there was nothing, however small, that did not clash in the bright wind, that did not send arrows of light through the glassy air. I was suddenly arrested in the long crunching path up the ridge by an exceedingly pointed awareness of the light. The moment I paused, the full impact of the mood was on me; I saw more clearly than I have ever seen before or since the minute detail of the grasses, the clusters of sand shifting in the wind, the small flotsam of the forest, the motion of the high clouds streaming above the peaks. There are no words to convey the moods of those moments.27

Because the natural world is unpredictable and uncontrol-

lable Adams has had to learn to control the lens and every-
thing behind it, including himself. It is not easy to capture skyward immensities with a box, some glass, and a patch of sensitive emulsion. Even when the photographer works with some-
thing close at hand, at the perfect moment the winds begin to blow, or a cloud obscures the sun, or a bird flickers across the subject. But through this wavering tension between control and unpredictability, Adams has made the commonplace into poetry.

He claims no special privilege, "What happens out there is. . . far more important than any image I or anybody else can make of it."28
He has felt, as Thoreau once felt, a love for nature that transcends commercialism and exploitation. And his images are a permanent statement of that sense of heightened awareness and dedication. Ansel Adams has occupied more than forty years of his life, more than anyone alive or dead, dedicated to the photography and interpretation of the natural scene. Yet, in spite of the somewhat dominant position he has obtained, he is not alone in quality of imagery and sensitivity to his subject. Edward Weston, Wynn Bullock, Elliot Porter, Phillip Hyde, and Richard Kauffman are a few of the men who stand beside Adams. Like frogs in the spring along wet meadows and mist enshrouded ponds, they make together a shrilling chorus endlessly reiterating the hidden spirit of the woods, mountains, and seashores. I suspect that to a greater ear than ours, their interpretations of nature make a similar ringing sound that travels a small way into the night. From the heights of a mountain, or a marsh at evening, or a wave flowing landward, their statements blend, and with all the other sleepy voices that, in croaks or chirrups, are saying the same thing.

This "same thing", the persuasive spirit of the wild, has caused many of these men to comment in a rather similar fashion on this essence of their work.

Edward Weston once remarked:

The photographer's power lies in his ability to re-create his subject in terms of its basic reality, and present this re-creation in such a form that the spec-
tator feels that he is seeing not just a symbol for the object, but the thing itself revealed for the first time. Guided by the photographer's selective understanding, the penetrating power of the camera-eye can be used to produce a heightened sense of reality -- a kind of super realism that reveals the vital essences of things.29

Wynn Bullock reflects:

Two worlds exist on opposite sides of our sense organs; the inner world of ideas in our minds and the outer world of events that stimulate our senses. Visual communication is based on the supposition that relationships between these two worlds can be established.

My feeling of four dimensional space-time came direct- from my contact with objects I photographed. When I first became a photographer, I photographed with only a conscious awareness of objects and their physical qualities, plus an academic awareness of how to compose objects within the format of my print. It never occurred to me that objects had their own real time, and that space was fullness, ranging physically from solid objects to invisible air and light. In short, I never thought too seriously of either. Only when I became dissatisfied with object seeing and photographing did I seek an escape. My search led me to a greater awareness that all objects were events constantly changing on sub-microscopic, microscopic and macroscopic levels in time and space. This included everything. My entire viewpoint gradually changed as did my pictures. For myself, I needed no definition to make me aware of four dimensional space-time events; I feel them.30

Elliot Porter, who tried to photograph the feelings Thoreau had toward nature, remarks of his experience:

In Maine I first read Walden, finding it rather a chore; in Maine I also became a photographer, and the subjects I photographed were things, I like to believe now, Thoreau might have described.

Shortly following World War II I became seriously involved with Thoreau's work. Just when this occurred and under what circumstances I no longer remember, but it was about this time that my wife suggested I do a book on Thoreau. My photographs, she thought, were like his writing. Her remark took deep root in my mind although I did little about it at first except to reread Walden and to collect Thoreau's works. Intermittently,
in no logical order, I read them and slowly began to find out what kind of a person Thoreau had been and what he had said about the outdoors. At first I thought only the descriptive passages were suitable for a book of photographs, but on reading other authors, among whom Aldo Leopold and Joseph Wood Krutch influenced me most, those passages in which he wrote about man's relation to nature became greater in importance to the book I envisioned.

Fitting our time well and giving pause to our thoughts is Thoreau's admonition and despairing cry: "most men, it seems to me, do not care for nature and would sell their share in all her beauty for a given sum. Thank God men have not yet learned to fly so they can lay waste the sky as well as the earth." Lines like these could not be illustrated, but they made me realize that illustration was not all I wanted to do. I hoped to be able to complement in feeling and spirit Thoreau's thinking one hundred years ago, and to show the peril we face even more today by our ever faster destruction of life not even our own.31

It has thus been my purpose to establish what one may call "the history of a feeling." It is, over and above all else, the thread that runs through the work of these photographers and men like them. From Jackson to Porter, this "feeling", that heightened awareness and love for the natural world exists as the common substance of their expression. To be sure these photographers have been fine craftsmen; it was, however, the reaching out that caused them to be better. In reaching out spiritually for the secrets of nature, they sought in the quagmire of photographic technology straightforward techniques and materials to record their marvels. Wisdom inter-fused with compassion underlies their discoveries; the aspects of the world beyond the natural they have genuinely revealed. Propelled by the rising flame of consciousness, they have
ingested more than simple nature. They have, instead, fed upon the contingent and the possible within their own minds.

Thoreau would have nodded in assent. Over a century ago, his sensitive ear, listening for any overgrown spectre in nature, admitted, "There seemed to be some intelligence which responded to the unseen serenity in a distant horizon. . ."32

He was seeking a way back through a leafy curtain that has swung behind us. There would be no way of returning through that curtain save perhaps one: through the power of imaginative insight, which has been manifested among a few great photographers and artists in our time. If their record, like that of the 19th century frontier photographers, seems clouded by frequent misunderstanding of their purpose, it is only because, as Thoreau once suggested,

Any subject is a mere groping after it, mere rubble, stone, and foundation. It is only when many observations of different periods have been brought together that one begins to grasp his subject and can make one pertinent and just observation.33

In the world of photography, as in other worlds, we are all observers; what is seen by one may often be lost or become obscure to another.
Development

I have tried to establish, in the two previous sections, a basis for my development as a wilderness photographer. Without a feeling for what one is doing and, just as important, without a knowledge of what others engaged in similar pursuits have accomplished and expressed, I have come to regard such a search for the wonders of nature, trying and difficult. Bereft of feeling, one can only imitate. Ignorant of the history of such a feeling, one obtains no perspective. Thoreau has remarked of such a search:

Many an object is not seen, though it falls within the range of our visual ray, because it does not come within the range of our intellectual ray. i.e., we are not looking for it. So, in the largest sense, we find only the world we look for.34

One has, in short, to refine one's perceptions. The common man is preoccupied with living. As a consequence, he sees little. He thinks a miracle can just be "seen" to be recorded. Quite the contrary. One has to be reasonably sophisticated even to perceive the miraculous.

This, then, is ostensibly the record of the photographic probings of one man who has lost his way, only to find in a thicket a mysterious hole that a child would know at once led to some other dimension at the world's end. After one or two experiences of getting impaled on thorns, the most persistent individual is apt to withdraw and assert angrily that no such
opening exists. My experience has been the opposite, but I have been fortunate. After several unsuccessful and sometimes unconscious attempts, which I intend to disclose, I have gained the ability to come and go in nature warily and softly. That story, a long search technically, aesthetically, and spiritually, I have tried faithfully to fulfill in photographing the White Mountains -- to me, as it must now be apparent -- a wilderness of Hope. Hope: that airy intangible substance out of which the human dream is made.

Since boyhood I have always been charmed by nature. Originally, this is what led me into geology, but after a time I became aware that something was missing amidst my rocks, fossils, and various bones. Something more was needed. Long college weekends offered the escape. I found a form of metaphysics, known as mountain climbing. In retrospect, the clearest, most enjoyable, and humblest moments of those years came on the side of a cliff, clinging to life under an overhang by my fingertips, or descending a rope through 200 vertical feet of empty air. All I had to do was set forth physically and the joy descended. From the point of view as a career it was quite a different matter. One cannot make one's living upon the side of a mountain, or can he?

In the spring of 1964 I was fortunate enough through my experience to be invited on a mountaineering expedition to the European Alps. I brought with me an instrument with which, at
the time, I had only the vaguest familiarity. That camera changed my life.

Infrequently, now, I will remove from the dusty tray of slides of that summer a few fading pictures. I peer at them on the light box. There, where only long familiarity can dispel disbelief, is the experience. Some of those photographs of mist-enshrouded mountains and strange men mirror exactly the illusive feeling of that experience. There, I have come to decide only recently, lies the hope of life, although I have felt it unconsciously for a much longer time. It was, perhaps, the images of that far-off summer which presaged my future.

The last years of college were occupied more and more with photography. Through the help of one far-sighted professor, I gained a modest knowledge of the photographic process. I became aware that my eye had potential. I won a contest and worked as a staff photographer for local publications. I recorded every mountain experience of those days as if it were going to be the final one.

Once, on leave from the Navy, my father asked me candidly what I would do with my life. I hesitated a moment, fearing some parental disapproval. "I want to be a photographer," I said matter-of-factly. "A journalist."
Photographs: 1964 - 1970
Gross Glockner, Austrian Alps, 1964

Grand Tetons, 1966

Grand Tetons, 1967

Clearing Storm, Montana, 1970

Sierra Nevada, 1970

Climbers, Yosemite, 1970

Cattail, Teton Marsh, 1970
But the words slipped away. I was thinking vaguely of the dimming light on some far mountain peak.

It has ever been my lot, though I aspire myself to be a teacher, to be taught by only a few. The period I considered journalism as a career came and vanished. The empty vacuum that filled the end of that search brought a series of personal experiences, for the most part with teachers, which to this day I can only remember with bitterness. Perhaps it was that troubled time which brought me out of the vacuum. But I also owe a debt of gratitude to one professor.

Richard Zakia is a teacher with a conscience. As the cloud of oppression lifted, it became apparent, under his guidance, that the ruts I had been following were miring me down in proverbial mud.

That road, the one of traditional education is the stifling factor that had to be kept in perspective, and not be treated as a spear in the hand, as some men hold it. The secret, non-existent in ivory towers, is to travel slightly above the ruts one is forced to travel. In this manner, Dr. Zakia has shown me that literature, psychology, and mythology are important to photography, feeling, and expression.

This change in aesthetic thinking has brought about a profound change in my approach to craftsmanship. The battered 35mm camera I had used for so long was replaced with a larger instrument which rendered fine detail of the wilderness with
Clarity and evenness of tone. I experimented with film, developers, and papers to find the combinations that suited this type of work best.\textsuperscript{37} I tested the Zone System of approach to photography at a nearby State Park.\textsuperscript{38} Confidence both in my craftsmanship and my sense of aesthetics increased.

Almost a year had passed and I had to start thinking about a thesis. I wanted to do something good, but what seemed to escape me. Finally, selecting the White Mountains as my topic, I suggested to my advisor that it would be best to obtain a preliminary study of the area. The results of that summer in the White Mountains were more than I had ever expected, indeed, had ever dreamed. It was during a two-week backpacking trip, there, that I discovered the essence of my purpose as a wilderness photographer:

Perspiring freely from pushing back bushes and various forms of undergrowth, I soon came to a small clearing that was surrounded by evergreens. The floor of the clearing was covered with the refuse of decaying vegetation. But, there, in the very center of that open floor, stood a boulder. It was white and glowed quite brilliantly, a magnitude above the dark and gloomy forest.

I stood there, motionless, for what seemed like hours, hypnotized, fascinated by this wonderful form. I recalled later that the feeling was very much like bumping into an old friend that I had not seen in many years.

It finally occurred to me to photograph the stone. In doing so, the very mechanics seemed lost somewhere behind a veil of excitement mixed with wonder, and I somehow felt as if I had discovered some new rhythm, some new pulse in nature. At the moment of exposure, the white rock seemed to fill the clearing, its message resounding through the expanse of trees...

Sometime after that I discovered, at least to my own satisfaction, that what I had encountered was the meeting of two worlds. It was a bridge formed from the outer world
to the inner world of myself. The door had opened for a fleeting second and then had closed again.\textsuperscript{39}

I had, in that moment of truth, passed through the invisible hole in the thicket. That the hole was in stone makes no difference. I did not realize at first what it was that I looked upon. As my wandering attention centered on the stone, a faint buzzing sound tinkled in my lens and heart. I had seen the universe as it begins for all things. It was a small and a laughing universe. After all those years of searching I think I can safely put it down that I had seen a miracle. It is one of the finest, most spiritual acts I have ever encountered. The craftsmanship and feeling had become one; the image contained the experience.

It was during the next year that I discovered Thoreau. The discovery of the illusive world behind nature had grasped me so that I was eager to discover other artists who had experienced the same. Among those I read, including Carl Jung, Joyce Cary, Hermann Melville, Ralph Waldo Emerson, George Santayana, Joseph Wood Krutch, and John Muir, Thoreau stands the tallest in his thinking. I returned to the White Mountains the following summer. I walked almost one thousand miles, and I learned that my first experience with miracles had only been a tantalizing anticipation.

The manner in which the light in the White Mountains creates form is a part, but not the whole, of the secret of the
place. Through leafy branches and dark forest floors it casts its rays to illuminate a patch of fern, or it can create amazing lines of beauty among the trees. To see these things takes experience. One must be quiet and when one finds them it is solely by chance. No one sets up such an act. Or the light can cast a sideward glance onto a rock or boulder and give it form. I have heard many explanations of how these mountains came to be called "White", and none have included this intense feeling of enveloping light. It is so transient that one must literally memorize the exposure to capture its beauty.

Another discovery made that summer, noted by Emerson and borne out in my own experience, exists in the two opposing forces of motion and rest in nature. "Motion or change, and identity and rest, are the first and second secrets of Nature: Motion and Rest. The whole code of her laws may be written on a thumbnail. . . "40-Motion and rest -- a simple prescription -- which becomes more relevant as we confront it day after day. I encountered it when making long exposures in dark woods, where windblown branches turn into a blur on film, and streams diffuse into timelessness. That discovery enabled me, when the light, wind, and mood was right, to express the other side of nature which Emerson so instinctively felt. The delicate motion of leaves and streams balances the eternal rest of rocks and mountains.

The discovery of the form of light and the war between
motion and rest are two discoveries of that summer in the White Mountains. They indicate that the mysteries of nature are on a simple level, yet it requires more than one day, even perhaps, one lifetime, to see even the humblest miracle. It requires much devotion to see what we would observe.

These two discoveries, along with the delicate form of objects themselves, have helped me to express what, for me, are the deeper and more intangible aspects of the wilderness of the White Mountains.

Summer is over, and up here in the White Mountains winter can happen just as summer ends. The days become chilly, the nights crystalline cold, and out my bedroom window the leaves thin in preparation for the long winter. As the leaves fall, the vertical escarpment of Huntington Ravine reveals itself. Sometimes, in the early morning, the headwall of the ravine glows with an incongruous pink and, as the sun comes up, it lights the highest point of land, Mount Washington. The glow lasts just long enough for me to wish I were on the mountain, partaking of that light.

It is at such times that I listen to the comfort and quiet of these mountains. I have cast, as Thoreau once did on Mount Kathadin, my own thoughts among the leaf falls and barren rocks. The photographs of those things represent the upwelling of that inner mountain in its dealings with the natural world
beyond. I know no more than that. This is how the miracle, my own miracle, came to me in its own time and its own fashion. I have tried to put it down just as that inner mountain gathers itself together, and in leaping upward, towers relentlessly over the cliffs of age.
Photographs: White Mountains
Thoreau Falls, 1971
Birch and Ferns, 1971
Zealand Falls, 1971
Mount Adams, 1972
Rocks, 1972
Falls, Culter River, 1972
Ferns, Mt. Clinton, 1972
Toadstools, 1972
Boulder and Trees, 1972
Light and Forest, 1972
APPENDIX

Materials, Formulas and Applications

The materials and formulas listed here were used for the greater part of the photographic work of the thesis. I suggest a thorough testing before any photography of this kind is attempted.

Equipment

Cameras and Lenses

Arca Swiss 4X5 View camera, Model B
75mm Super Angulon f/5.6 in Copal no. III shutter
210mm Goerz Dagor f/6.8 in Copal no. III shutter

Hasselblad 500cm
40mm f/4 Distagon
150mm f/4 Sonnar

Light Meters

Weston Master V
Honeywell-Pentax 1°/21° spot meter

Tripod

Bolex no. 772 with ball-joint head
Films

Kodak Verichrome Pan Film, 120
Kodak Super Panchro Press, Type B, 4X5

Film Developers

The following developers were tested by means of the Zone System of exposure and development. This approach to control of the photographic process is explained in Ansel Adam's book, The Negative. A discussion of that method is beyond the scope of this report as it is treated thoroughly in the above reference and elsewhere.\(^\text{41}\)

Kodak D-23 with Kodalk second bath\(^\text{42}\)

A semi-fine grain developer used to control the densities of contrasty scenes (more than 5 stops from detailed shadow areas to textured highlights) from N+1 to N-6. Temperature when processing should be 68°F with constant agitation. Use once, then discard both solutions. Used for sheet film development.

D-23

\begin{align*}
\text{Water (125°F)} & : \quad \frac{1}{2} \text{ gal.} \\
\text{Kodak Elon} & : \quad 28.5 \text{ grams} \\
\text{Kodak Sodium Sulfite (des.)} & : \quad 380 \text{ grams} \\
\text{Water to make} & : \quad 1 \text{ gal.}
\end{align*}

Dissolve chemicals in the order given. Use without dilution.
Kodak D-25 with Kodalk second bath

A developer with similar characteristics of D-23, except that it is finer grain. Use for roll and 35mm film. The Kodalk bath is the same. Temperature when processing is 68°F with constant agitation. Use once, then discard both solutions.

D-25

Water (125°F) .............................. ½ gal.
Kodak Elon................................. 28.5 grams
Kodak Sodium Sulfite(des.) ........ 380 grams
Kodak Sodium Bisulfite................. 60 grams
Water to make............................ 1 gal.

Dissolve chemicals in the order given. Use without dilution.

Kodak DK-50

A developer used to control below average contrast (flat) scenes from N to N+5. Use for both sheet and roll film. It is available in prepackaged units sufficient to make 1 and 3 ½ gallons.

Processing times

The times given here are based on a Zone III shadow placement on the exposure scale and developed to retain a Zone VIII density for the textured highlights. Be sure to make adequate tests (cf. footnote 41).
Verichrome Pan Film, 120

<table>
<thead>
<tr>
<th></th>
<th>D-25</th>
<th>1% Kodalk</th>
<th>Exposure Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>N+1</td>
<td>7 min.</td>
<td>3 min.</td>
<td>100</td>
</tr>
<tr>
<td>N</td>
<td>5 min.</td>
<td>3 min.</td>
<td>60</td>
</tr>
<tr>
<td>N-1</td>
<td>3(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>60</td>
</tr>
<tr>
<td>N-2</td>
<td>3 min.</td>
<td>3 min.</td>
<td>30</td>
</tr>
<tr>
<td>N-3</td>
<td>2(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>15</td>
</tr>
<tr>
<td>N-4</td>
<td>2 min.</td>
<td>3 min.</td>
<td>15</td>
</tr>
<tr>
<td>N-5</td>
<td>1(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>10</td>
</tr>
</tbody>
</table>

Constant agitation. Stop, fix, wash, and dry in the usual manner.

DK-50(1:1)

<table>
<thead>
<tr>
<th></th>
<th>Exposure Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>5 min.</td>
</tr>
<tr>
<td>N+1</td>
<td>7(\frac{1}{2}) min.</td>
</tr>
<tr>
<td>N+2</td>
<td>10(\frac{1}{2}) min.</td>
</tr>
<tr>
<td>N+3</td>
<td>15 min.</td>
</tr>
<tr>
<td>N+4</td>
<td>21 min.</td>
</tr>
</tbody>
</table>

Intermittent agitation (agitate constantly for the first 15 seconds of development, then 5 turnovers of the tank every 30 seconds thereafter). Stop, fix, wash, and dry in the usual manner.

Super Panchro-Press, Type B, 4X5

<table>
<thead>
<tr>
<th></th>
<th>D-23</th>
<th>1% Kodalk</th>
<th>Exposure Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>7 min.</td>
<td>3 min.</td>
<td>200</td>
</tr>
<tr>
<td>N-1</td>
<td>4(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>200</td>
</tr>
<tr>
<td>N-2</td>
<td>4 min.</td>
<td>3 min.</td>
<td>100</td>
</tr>
<tr>
<td>N-3</td>
<td>3(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>50</td>
</tr>
<tr>
<td>N-4</td>
<td>3 min.</td>
<td>3 min.</td>
<td>25</td>
</tr>
<tr>
<td>N-5</td>
<td>2(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>25</td>
</tr>
<tr>
<td>N-6</td>
<td>1(\frac{1}{2}) min.</td>
<td>3 min.</td>
<td>10</td>
</tr>
</tbody>
</table>

Constant agitation. Stop, fix, wash, and dry in the usual manner.
<table>
<thead>
<tr>
<th></th>
<th>DK-50(1:1)</th>
<th>Exposure Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>8 min.</td>
<td>150</td>
</tr>
<tr>
<td>N+1</td>
<td>$11\frac{1}{4}$ min.</td>
<td>200</td>
</tr>
<tr>
<td>N+2</td>
<td>$15\frac{3}{4}$ min.</td>
<td>300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>DK-50(undiluted)</th>
<th>Exposure Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>N+3</td>
<td>$11\frac{1}{3}$ min.</td>
<td>400</td>
</tr>
<tr>
<td>N+4</td>
<td>$17\frac{1}{3}$ min.</td>
<td>400</td>
</tr>
<tr>
<td>N+5</td>
<td>24 min.</td>
<td>400</td>
</tr>
</tbody>
</table>

Constant agitation in tray. Stop, fix, wash and dry in the usual manner.

In all these processing procedures, I strongly recommend a pre-soaking in 68°F clear water. This reduces unequal development density, and gets the developer to all surfaces of the film at once. A 30 second to 1 minute pre-soak is quite adequate. Longer times will have no appreciable effect.

**Paper and Processing**

The photographic paper chosen for the thesis was Agfa Portriga-Rapid 111. It was chosen for the rich quality of its deep blacks and sparkling whites. It produces a slightly warm, brownish-black tone, which, when intensified with selenium toner, gives a delicate, warm, earthy feeling to the photographs.

Printofine and Dr. Beer's paper developers were used to obtain the maximum quality effect of the Agfa paper. Printofine,
a prepackaged formula, was used where little control over the final print was needed. The Beer's formula must be mixed from scratch, and was used where more control over the image was desirable. The differences in image color caused by these two developers was neutralized by a careful toning in selenium.

Dr. Beer's Formula

Stock Solution A

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (125°F)</td>
<td>750 cc</td>
</tr>
<tr>
<td>Metol</td>
<td>8 grams</td>
</tr>
<tr>
<td>Sodium Sulfite (desiccated)</td>
<td>23 grams</td>
</tr>
<tr>
<td>Potassium Carbonate</td>
<td>20 grams</td>
</tr>
<tr>
<td>Potassium Bromide</td>
<td>11 grams</td>
</tr>
<tr>
<td>Water to make</td>
<td>1 liter</td>
</tr>
</tbody>
</table>

Stock Solution B

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (125°F)</td>
<td>750 cc</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>8 grams</td>
</tr>
<tr>
<td>Sodium Sulfite (desiccated)</td>
<td>23 grams</td>
</tr>
<tr>
<td>Potassium Carbonate</td>
<td>27 grams</td>
</tr>
<tr>
<td>Potassium Bromide</td>
<td>2.2 grams</td>
</tr>
<tr>
<td>Water to make</td>
<td>1 liter</td>
</tr>
</tbody>
</table>

Dilution Table

<table>
<thead>
<tr>
<th></th>
<th>Low Contrast</th>
<th>Medium Contrast</th>
<th>High Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution A</td>
<td>8</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Solution B</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Water</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

With the above table it is possible to achieve a full grade of contrast above or below the grade being used. Although
only 7 ratios are given above, any combination is possible to correct subtle differences.

**Toning**

The effect of a slight toning in selenium enhances the quality of the rich blacks of the image and also neutralizes any differences in image color among the prints.

After washing the prints for an hour put them in a tray of 70°F water. Immerse the prints in a 1% Kodalk bath for a few seconds to neutralize any acidity present. Stains will possibly result if the prints are not neutralized. Rinse for one minute in 70°F water. Immerse the prints in a solution of Kodak Rapid Selenium Toner and water in a ratio of 1:16 for 5 to 6 minutes with constant agitation. Wash for one hour and dry in the usual manner. It is important that all solutions be at 70°F to avoid any possible shift of image color from the selenium.

**Reciprocity Failure Adjustments**

The following table is used when exposures of over 1 second are encountered. My average exposure in the White Mountain was about 4 seconds, so I was faced with this problem on a day to day basis.
Indicated Exposure | Exposure Adjustment | Development Adjustment
---|---|---
1 sec. | √2X(1stop) | 1 Zone less
10 sec. | 4X(2stops) | 2 Zones less
100 sec. | 8X(3stops) | 3 Zones less

Filters

I carried with me in my pack, along with the necessary camera equipment and light meters, the following filters:
No. 8 (light yellow), No. 12 (minus-blue), No. 25 (medium red), No. 29 (dark red), No. 11 (light green), No. 58 (dark green), and No. 47 (medium blue). They were of the gelatin type, 3 inches square.

My approach to filters has been to use them sparingly. The designated filter factors given by Kodak are rarely as indicated. Therefore various tests with these filters were essential to determine their characteristics under various conditions in the wilderness. The following chart and summary are the results of both testing and practical experience.

<table>
<thead>
<tr>
<th>Filter</th>
<th>Condition of Environment</th>
<th>factor(relative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 8, 12, 25, and 29</td>
<td>sunrise, no clouds</td>
<td>decrease</td>
</tr>
<tr>
<td></td>
<td>sunset, no clouds</td>
<td>decrease</td>
</tr>
<tr>
<td></td>
<td>overcast</td>
<td>increase</td>
</tr>
<tr>
<td></td>
<td>shade and deep woods</td>
<td>increase</td>
</tr>
<tr>
<td></td>
<td>clear blue sky (light source)</td>
<td>increase</td>
</tr>
<tr>
<td></td>
<td>green foliage</td>
<td>increase</td>
</tr>
<tr>
<td></td>
<td>rocks (gray)</td>
<td>increase</td>
</tr>
</tbody>
</table>
Filter | Condition of Environment | factor (relative)
--- | --- | ---
No. 11, 58, and 47 | sunrise, no clouds | increase
| sunset, no clouds | increase
| overcast | normal or decrease
| shade and deep woods | decrease
| clear blue sky (light source) | decrease
| green foliage | normal
| rocks (gray) | normal

From this table it is quite obvious that the color temperature of the light source and the color of an object has an effect on the filter factor. Another element, the fact that most colored objects in the natural world have a low color saturation, makes me wonder why photographers carry filters outdoors at all. The only object that has a high degree of chromatic saturation is a clear blue sky. Hence the popularity of yellow and red filters to darken the sky to bring out the whiteness of clouds. Other applications of filters, however, have suggested themselves during the course of the thesis.

For example, at sunset, the blue of the sky and the reddish nature of the light emanating from the sun falling on clouds defeats the purpose of any filter. I have found that with a No. 12 filter to clear the slight haze present, a most dramatic effect can be obtained with underexposure and prolonged development. In the deep woods of the White Mountains, which are often strewn about with gray-white boulders, a no. 47 (blue) filter with normal exposure and development can suppress the greens of the foliage and enhance the textural qualities
of the stones. It is not my intention, here, to list all possibilities, however, but only to suggest that the use of filters when photographing the wilderness be approached with an open mind and not with dogmatic rules.
Footnotes


3. Ibid., p.520.

4. Ibid., p.519.

5. Ibid., p.520.

6. Ibid., pp.524-525.


9. Robert Taft, Photography and the American Scene, New York, 1938. Taft states on page 243 that "Not until after the Civil War do we begin to have anything like a complete record of frontier conditions." Subsequent research has led me to begin this history as the above statement suggests.


11. Taft, p.311.

12. Ibid., pp.311-313.


15. Jackson's work, along with other photographers mentioned in this thesis, is in the collection at the George Eastman House.


18. This is established below.
22. Ibid., p.155.
23. The correspondence between Adams and Stieglitz is obvious in The Eloquent Light.
25. See Bibliography for Adams books on technique and application.
27. Ibid., pp.36-37.
28. Ibid., p.18.
34. Ibid., p.231.
35. The sport of mountain climbing is often discussed in terms of metaphysics among the climbing constituency. The classic work on this is Mount Analogue (see Bibliography).
36. The results of the research with Dr. Zakia have been published in Photography: Control and Creativity (see Bibliography).
37. See Appendix.


43. Ibid. I have converted liters to gallons.

44. Ibid. p. 22-26.
Bibliography


