Recasting the Unalterable Order of Nature: Photography and the First Oil Boom

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On August 27, 1859 a single act forever changed the culture of a handful of towns in northwestern Pennsylvania and instantly ordained the future of another handful that did not yet exist.¹ It was neither a natural disaster nor a political uprising, but it possessed similarly epic proportions. Lives here and elsewhere would be uniquely altered by the occurrences of this day. In the terminology of historian Carolyn Merchant, what began that day in this remote place was no less than an "ecological revolution."²

A change abrupt enough to be called a revolution in a region's ecology occurs most often when humans drastically reconfigure the fashion in which they perceive of or use a natural resource. Human cultures can make choices that cause a shift such as the development of subsistence agriculture, the implementation of a market economy, or irrigation projects that will enable agricultural pursuits in arid regions; however, this is only one direction of the changes going on within such an episode. The people living through an ecological revolution are also dramatically and permanently altered by it. Human culture can never emerge from such revolutionary events in the same state as it enters. Details of everyday life that derive from basic ideas and techniques of land use cannot help but be radically and often immediately altered.

On this day in 1859 outside of Titusville, Pennsylvania, Edwin Drake, who represented the Seneca Oil Company of Connecticut, used an artesian well-drilling method to strike the world's first flowing well of oil. For the next twelve years, the shorthills of the valley surrounding Oil Creek, which connects Titusville to the Allegheny River and then on to Pittsburgh, endured the world's first commercial oil boom. This was an industrial boom unlike any previously seen. Forty-niners came there from California expecting a much more refined boom than what they had experienced in the unsettled western territories. Instead, they complained that the conditions in the Oil Creek Valley were crazier than anything they'd ever seen.³

The details of the first boom have been the fodder of many regional histories. Legends, stories, and facts detail the incredible fortunes that were made or lost in oil speculation; the boomtowns that sprang up overnight; the felled forests that fueled the steam engines and supplie building material; the thousands of derricks that suddenly appeared; the mud and excess oil that flowed freely throughout the area; the thousands of newly-arriving, temporary residents, as well as the saloons, brothels, and opera houses that this breed of nomadic industrialist utilized.⁴ Yet beyond each of these is this boom's most striking fact: that it was so widely seen or witnessed by a broad cross-section



of Americans. The visual record makes it possible today to chronicle the dramatic revolution that went on in the Oil Creek Valley.

The fact that people not directly involved in the early industry were made privy to its odd appearance is the accomplishment of one nineteenth-century observer more than any other: the photographer John Mather. He realized history was taking place in the Oil Creek Valley of the 1860s and that he could possibly make a living recording it.⁵ While moving between Ohio and Pennsylvania, Mather was introduced to photography by a travelling daguerreotypist. Others would also make the images of Pennsylvania's oil boom, but Mather's collection survived to become the largest portion of this significant visual record.⁶

Mather traveled the valley by skiff and wagon.⁷ When wells came in, Mather was often called by owners to record the event in hopes of encouraging other investors. His lens could validate the well's success and chronicle its position in the history that was unfolding in the valley. To the contemporary historian each photo is a precious artifact of the change going on in the valley. The view within each photo reveals great detail of how technology changes peoples' lives; however, the photographic record as a unit is also a source of cultural significance. Why did this place warrant such a unique record?

To grasp the significance of Mather's collection, contemporary researchers must first consider the rationale behind the photographer-historian's work. It is also necessary to examine photography's role within nineteenth-century culture. This analysis will look at Mather's work in a larger context while also utilizing his images as historical sources. If taken within the cultural tendencies of the age, the photographic record of the Oil Creek Valley can be seen as a way of rationalizing the furious experiences of those living in the Oil Creek Valley during the 1860s. The massive change exerted for only temporary economic gain was possibly made more palatable by the assurance that through the photographic record each stage of development would be preserved for later reflection or consideration. The pace of change need not be feared if such a record could be preserved.

Many of these thousands of glass-plate negatives present carefully preserved scenes of the landscape of the Oil Creek Valley.⁸ Mather's surviving negatives present an unparalleled opportunity for industrial historians to discover the specific locations and processes of extraction during the valley's boom. Additionally, such data present researchers with a represented landscape that can be analyzed like an actual physical landscape. By referring to these representations, the historical landscape can be recreated and assessed, revealing details of the culture using the land.

Anthropologist Clifford Geertz writes: "As interworked systems of construable signs..., culture is not a power, something to which social events, behaviors, institutions, or processes can be causally attributed; it is a context, something within which they can be intelligibly—that is, thickly—described."9 How can this "thick description" be achieved for a past place, and specifically how can this depth of inquiry reconstruct ethics and values practiced in the land-use of the Oil Creek Valley? The 1860s landscape itself offers the key and Mather's photos are the best resource for reconstituting this locale.

With such a mandate, the landscape of this locale's boom—of "Petrolia" swiftly offers significant revelations.¹⁰ One of the most basic is that Mather's photographic collection has survived. While discussing how these documents can be used by the researcher, this analysis will also seek to answer why such a record was valued enough to be preserved. It was more than entrepreneurial wiles that drove the efforts of Mather and other photographers of the region. The need to chronicle the major shifts of an ecological revolution is based in American culture and founded in conflicting lines of thought: the free acceptance of massive change and the need to preserve a record of what would be lost by such change.

In 1831 Alexis de Tocqueville observed that the American,

...gets accustomed to everything. He gets used to every sight....[He] fells the forests and drains the marshes....The wilds become villages, and the villages towns. The American, the daily witness of such wonders, does not see anything astonishing in all this. This incredible destruction, this even more surprising growth, seem to him the usual progress of things in this world. He gets accustomed to it as to the unalterable order of nature.¹¹

Technology has often driven the engines of change throughout American history. While at one level a photographic record such as Mather's preserves a chronicle of human technological supremacy over nature, it more specifically preserves a record of what is or will soon be lost through further technological advancement. In this way photography is more the recording of activity upon a borderland, active with give and take from each side. In Petrolia, technology's role was a fleeting one—one that could last only as long as the resource's supply. During the nineteenth century, industry and technology were so enmeshed in visions of economic, cultural, and social progress that almost any avenue for profit was acceptable.¹² This acceptance of technological change ran so deeply that a scene such as that in Figure 1 could become an ideal of American progress.

The Physical Landscape as Source

To analyze the landscape as a cultural construct, one must begin with a point of view offered by cultural geographer Bret Wallach. He writies that landscape "begins with the values that comprise the substrate of all human geography and ends with all the visible manifestations of those values....¹³ These human values are imposed on the landscape through technology and controlled through ethics.¹⁴ The landscape becomes the crucial and telling juncture in which a researcher can ascertain a culture's environmental ethic. As historian Richard White notes:

Culture itself shapes environments, limits the uses to which technology can be put, and governs the intensity of production. These material forces are not truly independent. Both symbolically and materially, culture shapes the natural world....Culture mediates between people and the natural world.¹⁵

Understood in this fashion, the landscape is a product of the relationship of humans to their natural surroundings. Therefore, the modified landscape that is produced can serve as a source for understanding the resident culture's environmental ethic and the values with which it perceives its natural resources.

"Landscape" becomes an all-encompassing term, including in one ensemble any alteration or modification imposed by human culture. The geographer D.W. Meinig, writes that landscape:

...is always inclusive of man and nature, rather than a way of distinguishing, or at least emphasizing, nature....The idea of landscape runs counter to recognition of any simple binary relationship between man and nature. Rather, it begins with a naive acceptance of the intricate, intimate intermingling of physical, biological, and cultural features which any glance around us displays. Landscape is...the unity we see....¹⁶

As each of the specific changes is wrought by the human hand or mind, the unity of these alterations also serves as a product of human culture. While microscopic studies of building types or plowing techniques, for instance, can reveal systematic cultural changes in land-use, the reconstructed unity of the historical landscape can reveal entire cultural processes.

With less and less land left unsettled and unused, the landscape of the nineteenth-century United States was most clearly defined by the use to which it was put. As a certain vision of economic progress sweeps through a culture, it can very obviously be seen on the resident landscape. In early New England, for instance, historian William Cronon demonstrated how fences and other demarcations of ownership immediately marked the imposition of European models of capitalism and property ownership on the land.¹⁷ Geographer Terry Jordan traced an occurrence as nebulous as the backwoods frontier through the use of a specific cabin type.¹⁸ Anthropologist Anthony F.C. Wallace



Courtesy Drake Well Museum and Archives

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revealed how the first industrial revolution brought textile industry to river towns in Southeastern Pennsylvania.¹⁹ These are only a few of the varied visions of progress that have become manifest on the physical landscape.

Economic progress was often orchestrated through the implementation and development of technology. Particularly during and after the second or later industrial revolution, the technology used in the United States became capable of entirely remaking the physical landscape. Such an increase in potential impact brought a revolutionary shift in the ethics with which natural resources were utilized. This period of industrialization has been noted for its alterations to the landscape, particularly those surrounding and using rivers, or the pollution or waste created by coal mining or steel-making.²⁰ However, more than any single physical change, this period imposed a basic ethical shift in the values by which Americans judged the natural landscape as a commodity, and the extent of their jurisdiction over it.

In contrast to Cronon's New England landscape, the human domain and governance over natural resources became uninhibited during industrialization. Such a transformation is seen in a view such as Figure 2, in which one of the old agricultural farms is represented by the white home that remains, but is now surrounded by the products of its new crop. Steam and equipment sheds litter the hillside in order to power the derrick apparatus and the well of oil that each drives. Some sheds were also used for housing, but most oil field workers lived in boarding houses—which were often converted farmsteads, such as the white building. As Merchant writes of this period, "Nature was engineered with machines to maximize production, while aesthetics was assigned to the realm of the private."²¹

The industrial landscape presented a scene where natural resources were harvested and categorized with a callous rationale based purely on immediate monetary gain. Little regulation was sought when these resources fell into the hands of wildcatters who cared little for the Oil Creek Valley's long-term ecological or economic stability. The landscape created by this materialistic and entirely utilitarian view of natural resources is most basically a unity composed of many physical artifacts, each of which possesses meaning to the trained eye of the cultural historian.²² The tendency of industrial archeologists and others is to look microscopically at continuities in implements, such as derricks, well caps, or steam engines. However, if this original unity can be reconstituted, instead of separated into its composite parts for analysis, such seemingly vague concepts as environmental ethics and values can be available for study from past artifacts.

If we return to Geertz's definition of culture, the unified landscape is one of the most basic contexts in which human culture is carried out. In Figure 3 we see some of the ancillary impacts that the industry had throughout the Oil Creek Valley. In such a locale, the industrial landscape becomes entirely one Courtesy of Drake Well Museum and Archives, Titusville



with the commodity being extracted from it—it is very nearly no longer a place to reside. Simply, it becomes less an ecological or even human community and more an economic one, the domain of the product to be supplied to the rest of the nation and the world. In this way, this cultural construct becomes a sacrificial zone—a place where ethics can be suspended in an effort to most simply and rationally expedite the industrial purpose being carried out.²³

Photographs as a Historical Source

A photographic record greatly enhances the researcher's ability to recreate the past. Photography made it possible to freeze a nonrepeatable event. Unlike painting or drawing, where the subject is reconstituted or situated by the subjectivity of the artist's memory and mental processes, the making of the photographic image occurs almost immediately. A moment is, for all intents and purposes, available for future consideration. As historian Alan Trachtenberg writes: "the determinable, datable character of the photograph and its machine-like exactness of whatever detail falls within the lens' focus give the camera image a privilege among images in regard to the past."²⁴

Many early observers were awestruck at the medium's potential, as well as at its ability to alter the existing culture. Most notable among these observers was Oliver Wendell Holmes. Beginning in 1859, he wrote a series of essays for the Atlantic Monthly in which he suggested the cultural significance of the photograph. He initially tried to appease the general fear that photography would lessen the value and appreciation of art. He stipulated that it would more likely do just the opposite. "The unrivaled precision attained by Photography..." he wrote, "renders exact imitation no longer a miracle of crayon or palette; these must now create as well as reflect, invent and harmonize as well as copy, bring out the soul of the individual and of the landscape, or their achievements will be neglected in favor of the facsimiles obtainable through sunshine and chemistry."25 Holmes, however, did not stop with his statement that photos deepen the meaning contained in painting and other visual arts. The objectivity and exact replication available in photos, continued Holmes, made the original unnecessary. With such a concept Holmes added a new level of meaning to nineteenth-century perceptions of photographs of Petrolia and others like them.

In Holmes' writings, photography became a grand catalogue that could now liberate Americans from a fear of change and progress. This occurred through photography's ability to preserve the original forever. He referred to photography as "The Mirror with a Memory." This idea of the photograph as a "keepsake" is important when reading landscapes in historical photographs, particularly in reference to Tocqueville's statement concerning the fickle American view of the landscape. Holmes' perception is also consistent with overall cultural patterns in post-Civil War America. Historian Howard Mumford Jones has suggested that the ease with which the Oil Boom was accepted was at least partly a product of cultural changes exerted by the American Civil War. Literally, Americans viewed themselves as being entitled to heaven-sent opportunities since they had endured such suffering. For instance, in 1865, the *New York Times* published an article explaining:

The historian hereafter of this great struggle will record with wonder how nature herself seemed to try to heal the fearful waste and loss of the war, so that the most profitable natural discovery of the century occurred between 1860 and 1865. While pouring out our means in the costly effort for upholding liberty and law on this continent forever, the mountains and the oil wells have opened their treasures to restore the national wealth.²⁶

Here, oil is offered as divine compensation for a war well fought. The experience of the Civil War enabled Americans to feel additionally entitled to seek reciprocity from natural resources or other available venues. The popular journal *Every Saturday*, sold in the United States and England, provides another litany of oil through the ages, but then adds an interesting twist when arriving at 1859.

But it remained for America where...nature does everything upon the largest scale, and Man aims at accomplishing all things possible in the most extreme style—to exceed in its production of the raw material, and ...excel in their application, and rush in the maddest spirit of speculation into commercial mania almost unparalleled in modern times. The most extraordinary feature of the story is, that Nature has...so far replied to the extravagant demands...as would never have been dreamt of by the most sanguine enthusiast.²⁷

The moral here is simple: leave it to Americans to make the most of their natural resources. Such confidence in one's culture and society truly drove the pistons of industrial development and allowed Americans to become comfortable with and even excited by dramatic shifts in land use.

Such a cultural setting combined with the physical setting presented in the photograph allows viewers to consider meanings behind the patterns of a changing landscape. The views of Petrolia were unlike any scene witnessed previously, and yet few observers felt alarm or hesitation when confronted with them. Even when the ethics and techniques of the industry caused repeated fires and floods, the oil industry and its boom were seen almost exclusively in an emphatically positive light. The photographic record aided speculators and residents in validating their investments, their region's oddity, and the product's historical and economic importance. Additionally, the views aided development by creating the facade that changes could proceed further because intermediary steps had been securely preserved.

Alan Trachtenberg writes of a similar situation when he discusses an 1868 Congressional photographic report on western mining lands. In these images, writes Trachtenberg, "'nature' has already been worked over, converted to 'culture'—culture not as an abstract category but as the product of a specific history—and depicts itself as something made by human labor, as much a technological act as the reduction of ore to silver bullion."²⁸ Among many sub-objectives, Trachtenberg stresses that the photos in the report seek to make this place, this landscape, "real by making it graphic; by putting a view to it."²⁹ This was yet another purpose behind the creation of a photographic record of Petrolia—to ground the oddity as fact. Mather's photos were released first as a stereographic series in the 1860s and then again in 1884.³⁰

In Petrolia, making the scene real would liberate land-users to do as they wished: because a historical record of this place had been secured, they could proceed without restriction. Photographs also validated the accomplishments of the young industry for posterity, history, and business. Finally, and possibly most troubling, the existence of such a massive photographic record reveals that from its outset the oil industry was regarded as transient. The record was made and kept because in a moment the entire industry could be gone from the Oil Creek Valley. This is a disturbing addition brought by Petrolia to all of American industry: the rationalization and even celebration of the idea of a sacrificial landscape—that one place's permanent cultural and ecological demise was worthwhile because it would greatly benefit Americans as a whole.

The Appeal of the Ethic of Extraction

At the most basic level, changes in land-use and the application of technology witnessed in these images reflect major shifts in the regional and national environmental ethics that guided and limited the use of natural resources. These ethics demonstrate the changing value of the natural resources of the Oil Creek Valley as the landscape was commodified through the process of extracting oil.³¹ This shift in values and ethics was largely carried out through the intensified use of technology on the landscape.

Figure 4 demonstrates such shifts in its presentation of a scene reminiscent of the hinterlands surrounding a remote factory or refinery. This view of Petroleum Centre in 1864 reveals portions of the industrial purposes of the land, particularly the derricks, storage tanks, barreling area, and empty flat boats. Residential areas and even a church can be found just beyond the



industrial and commercial development that holds to the river's edge. Oil Creek is clearly integral to the infrastructure of industry in the valley. Photographic technology often makes water appear murky, in Mather's images, however, Figure 4 and others definitely reveal the presence of oil in or on Oil Creek. This view adds an additional detail about the local culture by including two dairy cows standing knee-deep in the river. Figuratively and literally the presence of cows in the polluted river illustrates the region's shift in values from its agricultural past to its industrial present. Anyone who was willing to endure life in Petrolia desired to be involved in the oil business in some way that is where possible fortune lay; it was not available in farming or raising cattle.

While such cultural change is obviously made possible through innovation, resourcefulness, and engineering, it is also made possible by the overall culture's acceptance of such scenes of economic progress. The built forms and general land-use practices seen on the physical landscape reflect the implementation of new technology while also demonstrating its larger cultural acceptance. The physical landscape, therefore, becomes a source of cultural change on a variety of levels. While this analysis has speculated about some reasons that Americans were particularly accepting of dramatic changes in land use such as those seen in Petrolia, it has not yet explored how these tendencies could transcend mere acceptance to become celebratory.

In Petrolia, Americans chose to overlook unpleasant details and see only economic considerations. Indeed, they would go so far as to idealize such a place. One reason is the widespread trust and faith in human resourcefulness and technology during the nineteenth century. This trust is evidenced by the cultural acceptance of the industrial landscape as a place that evoked emotion and wonder. Much as natural wonders were depicted in art and literature as "sublime," the American trust in progress allowed sites of industry not to remain unsightly views of dirt and grime, but to become wonderful visions of the future through the idea of the "technological sublime."³² The idea of the technological sublime made industrial change an ideal and therefore increased its ready acceptance. It would be a long process that would take the technological sublime from relatively tranquil sites such as a railroad cutting through picturesque farmland to the morass of Petrolia's landscape. However, such sites were both considered ideals during the 1860s.

This evolving definition of the technoligical sublime begins with one of the first sites in the United States that attempted simultaneously to be a natural wonder and an industrial prime mover. Niagara Falls, New York, was one of the first natural wonders to overwhelm Americans with feelings of subliminal meaning. The vision of the Falls was soon repeatedly reproduced in paintings and lithographs. Such views would be further disseminated by the Hudson River School painters, who found in nature subliminal connections to spirtuality and religion.³³ Scenes of the Falls also became linked to the national identity, and were reproduced internationally in order to publicize the wonders of the New World. This reaction led eventually to the drive to preserve natural scenes their beauty depicted.³⁴

In addition to its iconographic importance to the nation, a site such as Niagara Falls also represents a spot along the line that separates humans from the natural world. It is a borderland, such as Petrolia, through which one can monitor increases or decreases of humans' effort to instrumentalize the natural world. Information can be learned about the existing culture by studying how a place is treated, visualized, or recreated by social and cultural shifts. As it becomes more and more instrumentalized, or put to human use, the site reveals major shifts in the ethics that govern human use of natural resources. The great Falls came to represent a vision of raw power that acted as the perfect stage on which Americans could display their courage and technological resourcefulness.³⁵

Niagara revealed nature's awesome power like few other places in midnineteenth century America. Towers were soon constructed dangerously near the Falls. Boat trips began taking tourists as near as possible to the crashing waters. Man tempted nature and exerted control by allowing it to maintain its natural power— but only within his jurisdiction or guidelines. He tested the limits in this meeting between the natural and the human worlds. In addition to those wishing to make money from the spectacle itself, many onlookers watched the Falls and were struck by the economic possibilities of the motive force. Similar to Henry Adams' experience with the dynamo, these onlookers were overwhelmed by the potential significance the Falls could have to society, culture, and commerce.³⁶ The later movement to preserve the Falls was spurred by the rapid commercial development to exploit it both as a wonder to tourists and as a form of motive power.³⁷

Similarly, the sights of Yosemite National Park also attracted the preservationist's eye. As the focal point of the increasing American interest to escape to wild, natural areas, Yosemite was the first area set aside for recreational use.³⁸ Tourists were attracted by the magnificent oddities of the place, such as the high waterfalls, majestic mountains, and, of course, the giant sequoias. In a similar fashion to Niagara Falls, the ethics of the technological age penetrated the preservationist instincts. Even though these individuals represented nature preservations' best hope, they also were incapable of overcoming the mechanistic, utilitarian ethics of the industrial age—namely, in one way or another, to tame or dominate nature.

Bringing tourists to Yosemite was the major objective, and the methods for doing so were often shockingly unnatural and devoid of environmental ethics. For instance, the infamous "firefall" is one of the best examples of this lack of consideration for the natural surroundings. This spectacle originated with a large fire built on Glacier Point whose embers were then pushed over the edge of the point after dark. For hundreds of feet down the cliff, the fire would fall with the water.³⁹ In such an example, the natural site is reconstrued as something nearer to an exhibition of the technological sublime—the human's ability to dominate or usurp the power from a natural wonder. Awestruck visitors would inevitably return to their homes and tell others of the fascinating spectacle they had witnessed amid the wilds of California.

Both Yosemite and Niagara Falls demonstrate the dichotomy of the technological sublime, the cultural pull between technical utility or dominance and natural awe. However, even if the technological sublime were not the specific focus of such a scene, these sights also involve a cooperative venture between the human and biological worlds. This is the understanding that is at the very foundation of such cultural, perceptual activity, whether the site is Petrolia, the great Falls, or a coal town in Eastern Pennsylvania.

The technological sublime of the nineteenth century passed through Mauch Chunk, in Carbon County, Pennsylvania. During that era this place was the scene of such economic progress that tourists wished to come visit and bear witness to the dynamo of their age. Mauch Chunk, which is modern-day Jim Thorpe, was founded by the Lehigh Coal and Navigation Company. The small town was the hub of its transportation business, home to some of its most successful coal mines, and the focus of its most dynamic new technologies. Some of the first rail lines in the United States were employed here, and the famed "switchback" railroad is viewed by many as the precursor of the modern roller coaster. Additionally, this site employed one of the nation's earliest canal systems, as well as many of the most cutting-edge technologies of the coal industry. All of these were interlocked into an awe-inspiring industrial apparatus.

Most intriguing about Mauch Chunk is that in addition to serving as the mainstay of the American anthracite coal industry, it was also laid out in the model of a quaint New England town. Incorporated among this idyllic locale were cozy hotels and inns, suitable for high-brow tastes. It became known as the "Switzerland of America." This odd place was constructed to be a showcase of not just the coal industry, but of all industry. It served much as did the front display window of a department store, in which tourists could come, gaze, and see the future. If enticed by the magical spell, they could become involved themselves by investing their finances in industry. All visitors would inevitably re-evaluate their ideas of progress and technological innovation after viewing such a place.

In Mauch Chunk, Americans wanted to and could see progress at work⁴⁰ at least until it became corroded and polluted, as any coal landscape must.⁴¹ The soiled town of slag piles that evolved by the 1900s was not the desired vision of progress. While visitation dropped, Americans could still peer through the muck and see the technology and industry that was fueling the advancement of society elsewhere. Historian David Nye places such a site in the category of the "industrial sublime," and that is where we also find Petrolia.

The industrial sublime made it possible for awful places to become ideal visions. Historian John Kasson writes that such a scene combines a realistic mode with a "sense of mythic grandeur that intensifies the sublime atmosphere while containing it within a positive symbolism....The total effect is a compelling and ultimately reassuring tribute to the wonder of American technology."⁴² No matter how squalid and unpicturesque, a site remained capable of evoking the technological sublime, and thereby serving as a model of the positive capabilities of human technology.

Even if nature had not been entirely tamed, the process of human technology exerting itself upon natural forces attracted Americans. This humancreated nature often seemed wonderfully wild and out of control. While human dominion over nature was one of the early enticements to such scenes, Mauch Chunk or Petrolia did not necessarily overwhelm the onlooker by exhibiting nature under human control. The border was active: nature was often still in control of these scenes, or at least the human element was not effectively in control of nature. Indeed, at any moment nature could strike the entire scene from view. The attraction of such a place, therefore, becomes the process of gaining control through the contest between two forces, the human and the natural or biological. In Petrolia, the natural landscape of the Oil Creek Valley resisted human domination with fire, flood, mud, and many other weapons.

While it was not depicted in *Picturesque America*, Petrolia was often described in grave detail by the popular press, including the *New York Times*, *Harper's Weekly, Every Saturday, Frank Leslie Illustrated*, and many others.⁴³ These often gruesome descriptions never included an accurate visual. Lithographs were normally included with articles that strove to group Petrolia as a set place "type": normally, this was a quaint New England village that happened to have picturesque derricks among its homes. Yet, by including a place such as Petrolia among the subliminally appealing locales, nineteenth-century Americans intensified the one-dimensional use of this place and also made a model of its techniques and practices. This part of Petrolia's image grew out of the boom's specific timing and the other places and occurrences with which speculators chose to compare the oil boom and its landscape. This additional appeal gave this place a national audience, and this group of users supported and furthered the exploitation of Oil Creek Valley to the point that it could be a sacrificial landscape.

The attraction of Oil Creek Valley was more than just the technological accomplishments attained here; indeed, it included the sullied, scorched, and horrific details of everyday life here and recast them in a new, acceptable light.

Far and away, the reproduced scenes of this region and its industry did not possess the consistently progressive ideology that was standard to the technological sublime, but instead the titillating extremes of boom and bust seen in the form of opulent wealth versus torrential floods and irrepressible fires or hard-working wildcatters versus conniving speculators. Exploitation of one type or another was evident at every turn.

The effort to take a site of industry and not simply accept it, but instead to celebrate and revere it as an icon of progress, is a product of the technological sublime in ninteenth-century society. The photographic record enhanced this by making residents and users less afraid of massive changes. Images by Mather and others reveal a landscape that can be used as a material artifact to illuminate the cultural changes taking place. When this cultural construct is seen in a national context, it reveals a place where the ethics and values guiding the use of the natural resources have been utterly recast.

Oil Creek Valley became a locale where the only guidance for action was immediate monetary gain. This change involves the process of commodification, and presented a model in which the physical landscape becomes one with the resource being extracted from it. Any meaning or significance that the natural landscape possessed prior to its commodification was usurped by this resource. In essence, Oil Creek Valley, has been wholly sacrificed for the valuable product it provided, because its cultural and ecological significance has been entirely subjugated by petroleum's economic potential.

The Landscape as Stage

During the 1860s technological change was almost automatically considered positive. If millions could be made from a substance that had previously been only marginally useful, it did not matter what was sacrificed to create the commodity. The photograph thereby becomes important as a method of preserving the lost or soon-to-be-lost scene, as well as also placing a vision with a well-known scene. Considered in toto, these views enable contemporary researchers to reconstruct these ethics and principles that drove early American industry.

Through the landscape, the interpretation of a period is enhanced so that today's scholar can use a photographic record to reconstitute the processes and practices of the early industry. Historical images can go beyond being documents so that even their view can become an artifact. With such a perspective, patterns of change within this ecological revolution can be reconstructed and the ethics and priorities of the land use revealed.

Just as with the pioneering social history of Herbert Gutman and others, use of the landscape as an historical source offers a broad history, much more free from excluding certain classes or races of people than the written record. Historian Lizabeth Cohen in recent years has attached this effort to the analysis of the presentation and ordering of the interiors of working-class dwellings. She writes: "workers who left no private written records may speak to us through the artifacts of their homes."⁴⁴ Using photographs from magazines and other sources, Cohen recreates the unity of the inner landscape. Similarly, the study of vernacular architecture also includes those who left no written history.

The field of industrial archaeology is of great assistance to understanding the vernacular forms of the industrial landscape.⁴⁵ Most often, however, this involves breaking up the unified landscape to categorize similar forms. Without its unity, the opportunity to analyze cultural changes in ethics and values is largely unavailable. Historian Thomas Schlereth, among others, advocates a holistic consideration of landscape as material culture, through what he calls "Above-Ground Archaeology." Schlereth stresses that the "landscape offers the historian engaging, challenging reading from an ever lively, often unfinished, occasionally indecipherable, but always significant manuscript." In his essays this is the physical landscape spreading out before an observer—not one reconstructed from historical images.⁴⁶ But the historian can also attain the value of "Above-Ground Archaeology" from a photographic record. Cannot the unity of landscape brought about by the doctrines of cultural geography similarly blend with the historical landscape?

Geographer Yi-Fu Tuan has written that landscape is an ordering of cultural reality from both a vertical and a side view.⁴⁷ The vertical, he writes, affords a more objective view of the social occurrences that have taken place. It is from an aerial vantage point that grander, unifying natural systems reveal themselves. The side view, he writes, "in contrast, is personal, moral, and aesthetic." It involves subjective perception. With these two designations, however, Tuan is not stipulating literal vantage points; rather, he indicates mental approaches to the interpretation of the same view. The site beheld is identical; it is the perceptions must be merged into a single view of landscape. With this process in mind, this blending need not be restricted to the physical landscape; the same perceptions are involved in the consideration of the photographed landscape.

A landscape photo affords Tuan's vertical view. It is a scene much like a stage performance, where we can apply ideas such as those of the anthropologist Victor Turner who emphasized that cultural acts can be perceived as performance, which can then be viewed as a paradigm of process. These productions, writes Turner, act as mirrors "that consist of reflecting consciousnesses and the products of such consciousnesses form...vocabularies and rules...."⁴⁸ The perception of these additional meanings is made possible through knowledge of pertinent facts that flesh out the vertical view with perceptions of culture that make up the side view of which Tuan writes. To an observer schooled in the history of a scene—in the processes taking place— the cultural changes reveal themselves through the landscape that is pictured.

By considering Turner's ideas, the landscape in photos becomes a stage on which cultural processes are played out. This rationale can reach a further step if photos can be seen to hold deeper cultural revelations than simply the presented scene—Tuan's vertical view. In other words, photographic representations can themselves be used as material artifacts that reveal the human culture behind its shaping or construction. This would include physical artifacts such as derricks, buildings, and outhouses; yet it also makes actual cultural processes into an artifactual record. This last segment is particularly crucial to this analysis. By mirroring a moment in time, the photograph presents the viewer with a window completely separate from the photographer's original intent. Much as an act on a stage, historical images can reveal practices and processes that illuminate understandings of cultural values and ethics within the viewed world. If a photographic record is complete enough to depict the same basic scene consistently over a set number of years, the progression of photos can reveal the process of cultural change to the historian.

The Processes of Petrolia

Such cultural change is evidenced in many of the technological processes that grew out of the oil industry's boom. The most dramatic of these was the instrumentalization of Oil Creek. Used in a variety of ways prior to the oil boom, the creek after Drake's strike quickly became like a cog in a factory designed to produce petroleum. Indeed, the river was the industry's lifeblood, and it became its entire infrastructure. First, the lowlands along the creek were thought to be the only areas where an oil strike could be made. Second, the creek offered the most dependable mode for transporting the crude out of the valley, until the railroads made the process more efficient. The process related to this second aspect of the creek's importance is especially better understood using the photographic record. For instance, for many years pond freshets, or the artificial raising of river levels, had been used throughout Pennsylvania and elsewhere to transport lumber downstream. Early on, Petrolians decided that freshets could be utilized for oil transport as well. Figure 5 shows the outcome of many pond freshets, which quickly became the acceptable way to take oil out of the valley and down to Pittsburgh.

To the earliest speculators in oil, commodities and technologies were largely interchangeable. With this logic, a skiff full of loose crude oil, which looked very much like a bathtub full of liquid tar, in the minds of valley inhabitants became the equivalent of a solid, round tree trunk that would float naturally atop Oil Creek.⁴⁹ Such a perspective made it much more simple to instrumentalize the natural environment and make it part of the industrial process. These activities on Oil Creek would not have occurred without this perspective dominating local decisions about land-use. Pond freshets required





that skiffs be loaded with oil ahead of an appointed time when mill dams upstream were systematically broken. The flow of the Creek would rise and lift the heavy boats from the creekbed and carry them haphazardly downstream to Oil City. Mather's photographs demonstrate the inherent problems in such practices and processes. After one particularly disastrous freshet, leases were taken out on land along the Allegheny at Oil Creek's mouth for collecting the excess oil from the water.⁵⁰

Figure 5 depicts the pond freshet disaster of 1864, most famous among many jams that took place near Oil City. In a normal freshet trip, two of five skiffs were lost and every skiff leaked significant portions of oil into the stream. Indeed, no matter how successful the freshet trip, one third of the loaded oil was lost by leakage before the boats even started, and another third before it reached Pittsburgh.⁵¹ Any loss from collisions with other boats added to this already staggering amount. Reverend S.J.M. Eaton's 1866 observation of the freshets is applicable to most practices in the Valley: "This extemporized navigation is kept up and regulated by a kind of code of honor. Written laws and legal enactments have not yet learned of its existence."⁵²

Beyond the leakage and spills, the jams such as that seen in Figure 5 led to wholesale destruction of property and commodity. Written descriptions of such events offer a great deal of assistance in understanding technological processes; however, photographs allow one to more completely flesh out the patterns of the process. Like an act on a stage, the occurrence is dramatically recast through visual evidence. This evidence allows one to look within these patterns and thereby recreate the choices that were made by those using the land of the Oil Creek valley. It is through these decisions that the ideas of commodification overtake the priorities of the inhabiting culture.

In spite of causing such disasters, the pond freshet was viewed as the region's latest technological wonder. This process alone made massive oil trade possible before railroads to the area were completed around 1865. Such a critical industrial role allowed onlookers to ignore or overlook the impracticality or base waste of many processes. In the first major history of the region's oil boom, Andrew Cone and Walter Johns lament the fact that the individual who devised the freshet idea will never be known and therefore cannot receive the "undying fame" that he deserves. Yet their own account reveals the ethics of the practice, when they write: "When prices ruled low, oil was shipped in bulk, that is run [loose] into boats and barges. When prices ruled high, shippers did not care to risk so much, and used barrels."⁵³ The only loss would be the value of the commodity being moved; value was placed on little else. The processes of the oil industry thus reveal that the development of profit was the guiding force in Petrolia. Through the use of the technological and industrial sublime, the squalor created by such attitudes could become ideal.

In such historical views, the processes of Petrolia are open to interpreta-

tion. The nineteenth-century observer would have only seen progress in this process and this landscape. Even these often grimy scenes were steeped in the cultural trust and interest in the technological sublime. The processes inevitably point to the same detail of the early oil industry that also fed the need to record its developments: its transience. Mather sought to preserve the impermanent landscape of this industrial boom. It was the industry's transitory nature that also fed the unregulated operation of speculation in the valley and greatly increased its impact on the valley's natural environment. This locale became a sacrificial region when ethics and values guiding social, ecological, and economic relationships were entirely suspended to clear the way for the locating, gathering, refining, and transporting of "black gold."

By considering Turner's ideas, the representations seen in these photos can themselves be used as material artifacts that can reveal details about the human culture behind its shaping or construction by asking questions such as: Who wished to view this landscape? What about it is attractive? What about the scene engages the imaginations of Americans? Why did residents feel the need to preserve a record of their accomplishments? Do the answers to the previous questions reflect a change in broader visions of economic or social progress? However, at another level the processes portrayed in the images also provide a researcher with primary source data about the scene itself. These can answer questions such as: What is the ethic governing the occupants' use of natural resources? Is this a change from what had been previously present? If there is a change, does it reflect an alteration in the cultural values of the occupants? Does this represent a broader shift in the regional interests or views of progress?

The photographic record of Oil Creek Valley reveals the many distinct layers of the effects of industry on the physical landscape, the cultural patterns of humans, and land-use ethics and values toward natural resources. Through historical images the researcher can monitor alterations in physical artifacts such as derricks, buildings, and outhouses; however, he or she may also recover actual cultural processes—such as oil storage, transportation, drilling, or simply residing in this place—within the framework of an artifactual record.

When geographer Peirce Lewis offers ways in which the landscape can be viewed as material culture, he includes its potential to reveal "the ambitions about how environments should be ordered and improved."⁵⁴ This desire to order and improve the environment is guided and limited by ethics and values. Historical photographs are one of the single best sources with which to ascertain these ambitions. Particularly in Oil Creek Valley, Mather's photos reveal the exertion of new technologies for economic improvement.

Historian Henry Glassie writes that "technology requires the sacrifice of extant materials that ultimately do not owe their presence to human beings and so technology—the means of transforming the natural into the cultural—exists as an index to culture's valuation of nature."⁵⁵ In Petrolia, Mather's

work functions to catalogue this index and demonstrate its progression over the region's boom years. The photographic record of Oil Creek Valley presents this episodic change in technological use and can therefore reveal the culture's valuation of nature and the ethics with which it interacts with its natural environment.

Oil Creek Valley is a unique legacy of place—one that allows us to grasp a vision of what occurred. The record would not have been as complete if this place had not been truly historic, if capital had not been readily available to support Mather and other photographers, or if the national public had not so completely trusted and even reveled in the human ability to create technological progress. These dynamics combined with the industry of this valley to make a scene unlike any other. The photographic record affords us access to these views and enables us to achieve a deeper understanding of technology's impact on human culture.

These lessons of Oil Creek Valley can be applied to many locales and scenes that lack such a monumental record. Photography has allowed Americans to become comfortable with the idea of rapid and consistent change of many sorts. The existence of such scenes now allows us to use these artifacts—not just to view them—in order to discover practices and ways of life on the historical landscape.

Notes

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2. Carolyn Merchant, *Ecological Revolutions*. (Chapel Hill: University of North Carolina Press, 1989), pp. 2-5.

3. Hildegard Dolson, *The Great Oildorado* (NY: Random House, 1959).

4. Many people involved at one time or an-

other in the oil industry have written histories of the early oil industry. The most prolific of these are Ernest C. Miller and Paul Giddens, both of whom have written many books and articles on portions of the history. Because of the industry's popular appeal during its early years, many books and pamphlets were also written about the place before 1875, most notably, *Petroleum* by Reverend S.J.M. Eaton and Andrew Cone and Wallace John's *Petrolia*. Most interesting among the few later sources are: *Pithole* by William Darrah and *The American Petroleum Industry* by Harold Williamson and Arnold Daum.

5. While every locale cannot be so carefully documented, this methodology functions for

single photographs as well as extensive collections.

6. For an excellent discussion and collection of Mather's work, see Anne W. Stewart, Dixie Morrow, and Linda A. Ries, eds., *John Mather: The Legacy of Pennsylvania's Oil Region Photogapher* (Franklin: The Colonel, Inc., 1995). Prior to this publication the best source for viewing Mather's photographs was Paul Giddens' *Early Days of Oil*.

7. Ernest C. Miller and T.K. Stratton, "Oildom's Photographic Historian," Western Pennsylvania's Historical Magazine, Vol. 55, #1 (Jan. 1972) pp. 1-54.

8. Mather's collection is among the many holdings at the Drake Well Museum and Archives, Titusville, PA.

9. Clifford Geertz, *The Interpretation of Cultures* (NY: Basic Books, 1977), p. 14.

10. During its early years, the oil industry was a mixture of myth and reality for which writers devised encompassing terms that would include various locales and details under one label. These included oildom, oildorado, and petrolia. In my work, I have chosen to use the latter.

11. Alexis de Tocqueville, "A Fortnight in the Wilds," *Journey to America* (Westport: Greenwood Publishing Group, Inc., 1981), p. 329. 12. There are countless examples of this ethic in Petrolia. For instance, Cone and Johns write in 1870, "Though we had seen more inviting abiding places, we had never beheld one presenting a better chance to make one's first million in, and thus start fairly on the road to comfortable affluence."

13. Bret Wallach, At Odds With Progress (Tuscon: University of Arizona Press, 1991), p. viii.

14. This terminology derives from that used by Ian G. Barbour in *Technology, Environment, and Human Values* (Westport: Greenwood, 1980).

15. Richard White, *Roots of Dependency* (Lincoln: University of Nebraska Press, 1983), p. 151.

16. Donald Meinig, *The Interpretation of Ordinary Landscapes* (NY: Oxford University Press, 1979), p. 2.

17. William Cronon, *Changes in the Land* (NY: Hill and Wang, 1983).

Terry Jordan, *Backwoods Frontier* (Baltimore: Johns Hopkins University Press, 1992).
Anthony F.C. Wallace, *Rockdale* (NY: Norton, 1980).

20. There are many sources discussing industrial river towns of New England. Particularly applicable to environmental history is Theodore Steinberg's *Nature Incorporated* (NY: Cambridge University Press, 1991).

21. Merchant, p. 230.

22. The use of "artifacts" here derives from material culture studies, and specifically art historian Jules Prown: "...whatever else they might be, artifacts are at the deepest level expressive forms....As a primary phenomenon equal to social structure and intellectual reasoning, the artifact must be questioned on its own terms." Prown, "Mind in Matter," *Winterthur Portfolio* (Spring 1982), pp. 7-16. 23. For such a discussion, refer to Brian Black, "Petrolia: A Sacrificial Landscape of American Industrialization," *Landscape*, Spring 1994.

24. Alan Trachtenberg, *Reading American Photographs* (New York: Farrar, Straus & Giroux, 1990), p. 6.

25. Oliver Wendell Holmes, "Something About Pictures," *Atlantic Monthly*, February 1858, p.402.

26. New York Times, 16 February 1865, 4:4.

27. Every Saturday, April 7, 1866, p. 384.

28. Trachtenberg, p. 153.

29. Ibid., p. 154.

30. In search of additional income, Mather finally published a bound selection of a few prints in 1895. Miller and Stratton, p. 57.

31. The idea of commodification is part of contemporary theoretical models that derive post-modern theories. from The deconstruction of commodities has shown that a natural resource is assigned a value by the surrounding or using culture. If placed in a capitalist economy, this value can transfer this resource into a standing of a commodity, in which its use and management is orchestrated in a varrying manner depending on its value and therefore its supply. In 1965 Maurice Godelier, the French anthropologist, wrote "there are thus no resources as such, but only possibilities of resources provided by nature in the context of a given society at a certain moment in its evolution." For discussion of this topic's relation to natural resources, see William Cronon, *Changes in the Land* and *Nature's Metropolis* (NY: Norton, 1992).

32. This is the definition set foward by Leo Marx, *The Machine in the Garden* (NY: Oxford, 1964).

33. These beliefs of the Hudson River School have been tied to transcendentalism and particularly the writings of Ralph Waldo Emerson and William Cullen Bryant. Barbara Novak, *Nature as Culture* (NY: Oxford, 1980).

34. This preservation effort is an interesting episode in its own right and was orchestrated by J. Horace McFarland, of Harrisburg, PA. Alfred Runte, *The National Parks Experience* (Lincoln: University of Nebraska Press, 1987. 35. John F. Sears, *Sacred Places* (NY: Oxford, 1989), pp. 16-18.

36. Henry Adams, *The Education of Henry Adams* (NY: Houghton Mifflin, 1973). 37. *Ibid.*, 184-9.

38. Roderick Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1982). Yosemite was the first protected area that was set off by the federal government, but Yellowstone was the first officially designated National Park.

39. Stanford E. Demars, *The Tourist in Yosemite*, 1855-1985 (Salt Lake City: University of Utah Press, 1991), p. 67-9.

40. For specific discussion of the representation of Mauch Chunk, see Sears, "Tourism and the Industrial Age: Niagara Falls and Mauch Chunk." In addition, for site preservation see the fine study by Venturi, Rauch & Scott Brown, *Historic Jim Thorpe*.

41. For general consideration of the ongoing attraction of industrial scenes, see Richard

Francaviglia, *Hard Places* (Iowa City: University of Iowa Press, 1991).

42. John Kasson, *The Republic of Technology* (NY: Viking Penguin, 1977), pp. 170-1.

43. This coverage is discussed in Black, Land-scape.

44. Lizabeth Cohen, "Embellishing a Life of Labor," in Dell Upton and John Michael Vlach, eds. *Common Places* (Athens: University of Georgia Press, 1986), p. 262.

45. See, for instance, Robert Gordon and Patrick Malone, *The Texture of Industry: An Archaeological View of the Industrialization of North America* (NY: Oxford, 1993), or Francaviglia.

46. Thomas Schlereth, Artifacts and the American Past (NY: AASLH, 1981), p. 184.

47. Yi-Fu Tuan, "Thought and Landscape: The Eye and the Mind's Eye," in Meinig, p. 90.

48. Victor Turner, *The Anthropology of Performance* (NY: Performance Arts Publications, 1986), p. 22.

49. Later a dam specifically for this purpose would be added just below Titusville.

50. *Titusville Gazette and Oil Creek Reporter*, 26 June 1862.

51. Andrew Carnegie, Autobiography (Chester,

CT: Northeast Press, 1986), p. 138.

52. Eaton, p. 166.

53. Cone and Johns, p. 101.

54. Thomas Schlereth, *Material Culture: A Research Guide* (Lawrence: University of Kansas Press, 1985), p. 41.

55. Simon Bronner, *American Material Culture and Folklife* (Logan: Utah State University Press, 1992), p. 48.