

**Wisdom,
Philanthropy, and Killed Colt Creek: The
Enlightenment Exploration of the Lewis and Clark
Expedition**


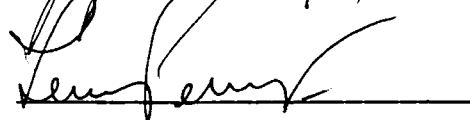
By

John Overton Belcher

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On the basis of this thesis and
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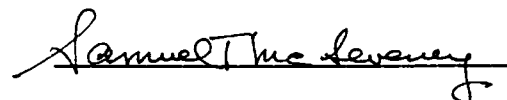


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John Overton Belcher

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I

Enlightenment Exploration versus Frontier Reality

More than one year and a thousand miles away from civilization, Captains Meriwether Lewis and William Clark participated in a process that was by then familiar to them--the naming of geographical phenomena. They had come upon two new rivers that ran into the river they had been following, which they had already named the "Jefferson." These rivers, really not much more than mountain streams, were given the names "Wisdom" and "Philanthropy," for "those cardinal virtues, which have so eminently marked that deservedly selibrated character [Thomas Jefferson] through life."¹ Later, high among the snow-covered Bitterroot Mountains, in what were perhaps the most perilous days of the expedition, another stream was named. On September 14, 1805,

¹ Gary E. Moulton, ed., The Journals of the Lewis and Clark Expedition, vol. 5 (Lincoln: University of Nebraska Press, 1988) p. 54. Hereafter referred to as "Journal 2-7."

Clark wrote that the party "Encamped opposit a Small Island at the mouth of a branch on the right side of the river...here we wer compelled to kill a Colt for our men & Selves to eat for the want of meat & we named the South fork Colt killed Creek."²

The naming of these three streams suggests a struggle that was present throughout the expedition's history--the struggle between Enlightenment exploration and frontier reality.³ The Lewis and Clark Expedition was an Enlightenment venture because of its fundamental operating assumptions concerning science and exploration. These assumptions, which centered around the notion that exploration was a carefully controlled experiment in which man could observe, categorize, and order nature on his own terms, guided the expedition from its conception through its execution, leading it to ask certain questions and attempt to achieve specific goals.⁴ Through careful planning and preparation and a strong reliance on taxonomic science, Lewis and Clark were able to apply these assumptions to a vast and unknown frontier, creating in their minds a scientific construct that allowed them to order the wilderness and break it down to its individual parts. As long as the wilderness fit neatly into this order

² Also "Killed Colt Creek." Journal 5, p. 205.

³ Definitions are in order. In this paper, "Enlightenment" and "Jeffersonian" are more or less synonymous, each referring to the particular scientific mind-set that was shared by Jefferson, Lewis, and Clark. The term "frontier reality" is meant to suggest the power of the frontier as presented in Turnerian terms. Turner is explained in Part I. It should be noted that the association of the expedition with the Enlightenment is not uncommon. For instance, John Seelye characterizes the expedition as "the premier epic of the Enlightenment in America." John Seelye, "Beyond the Shining Mountains: The Lewis and Clark Expedition as an Enlightenment Epic," Virginia Quarterly 63, 1 (1987): p. 38.

⁴ Since early American exploration was typically a male activity, the terms "man" and "mankind" are herein used rather than gender-neutral alternatives.

they imposed upon it, they could observe and classify it in a manner that was both rational and objective. However, when particular frontier phenomena and experiences confounded the framework of this scientific construct, the explorers often lost their objectivity and detachment.

In this sense, the explorers were continually struggling to master the frontier. The frontier, though, was far from being a passive adversary. Frederick Jackson Turner, the premier historian of the American westward movement, called the frontier "the outer edge of the wave--the meeting point between savagery and civilization."⁵ What Lewis and Clark were trying to do was to use civilization to master savagery, or more specifically, to use science to master the wilderness. In this respect, the entire saga of Lewis and Clark is the story of the struggle for mastery between the explorer and the frontier. After all, "civilization" and "savagery" were mutually exclusive--if one was to advance, the other had to recede. In order to master the frontier, Lewis and Clark would have to meet it on their terms and not allow it to determine the outcome of their mission.

Such a task would not be easy. In his famous frontier thesis, "The Significance of the Frontier in American History," Turner claimed that the frontier's overwhelming power shaped those who went west, breaking them down and stripping them of their cultural

⁵ Frederick Jackson Turner, "The Significance of the Frontier in American History," The Frontier in American History (Tucson: The University of Arizona Press, 1986) p. 3.

accoutrements in a process that would ultimately "Americanize" them. He said,

The frontier is the line of most rapid and effective Americanization. The wilderness masters the colonist. It finds him European in dress, industries, tools, modes of travel, and thought. It takes him from the railroad car and puts him in the birch canoe. It strips off the garments of civilization and adorns him in the hunting shirt and moccasin....In short, at the frontier the environment is at first too strong for the man. He must accept the conditions which it furnishes, or perish, and so he fits himself into the Indian clearings and follows the Indian trails.⁶

Turner, then, would argue that it was the tendency of the frontier to "master the colonist," and other historians have incorporated this concept into their work. For instance, in Regeneration through Violence: The Mythology of the American Frontier, 1600-1860, Richard Slotkin examines the power of "the American frontier myth" over American history.⁷ Lewis and Clark, though, who sought to master the frontier by the careful application of their fundamental views of science and exploration, would seem to represent a challenge to this notion. Their expedition clearly and effectively demonstrates the conflict between man and the frontier, civilization and savagery, and Enlightenment exploration and frontier reality. In the end, neither Lewis and Clark nor the frontier could claim an unqualified victory. Both sides were compromised. At

⁶ Turner, pp. 3-4.

⁷ Richard Slotkin, Regeneration Through Violence: The Mythology of the American Frontier, 1600-1860 (Middletown: Wesleyan University Press, 1973) p. 23.

times, the frontier exposed the inadequacies of Lewis and Clark's Enlightenment approach. However, at other times their Enlightenment inquiry allowed them to control their environment. Ultimately, it is the interaction between man and the frontier, rather than the results of the venture, that is most important to understanding both the expedition and the nature of the territory through which it passed. Slotkin concentrates on this process. Of Thomas Jefferson's interaction with the frontier, he says:

he views the bridge [Virginia's Natural Bridge] from two points of view, one of which harrows him with sublime terror, while the other soothes him with visions of harmony. Both experiences, he suggests, are necessary to a true sense of the land and its meaning....Thus for Jefferson the ideal experience of America is one which enables a man to immerse himself temporarily in the wild landscape and then to emerge on a high plane of thought, from which he can analyze the significance of the spectacle below him.⁸

To both Turner and Slotkin, then, the frontier was as much a process as it was a place. And as a process, it was incomplete without the frontiersman to enter it. In the Lewis and Clark Expedition the frontiersman not only entered the wilderness, but he actively sought to win the upper hand in the interactive process by maintaining his "high plane of thought" and trying to keep from being "immersed in the wild landscape." Whether he could do so was dependent on his technique, his preparation, and the frontier itself.

⁸ Slotkin, pp. 245, 247.

II

Scientific Assumptions

Lewis and Clark attempted to master the wilderness through two mechanisms: the careful application of a distinct scientific method and the reliance on planning and preparation that was so thorough as to leave nothing to chance. In "The Constitution of Nature: Taxonomy as Politics in Jefferson, Peale, and Bartram," Christopher Looby explains how science could allow one to control his environment. According to him, if "the scientifically formulated world...is essentially inert and is therefore a world about which there can be certain knowledge,"⁹ then

knowledge of the names and qualities of the beings in nature was not only the basis of the American's control over his environment, but might also be, in some sense, the foundation of the collective life of the new nation of which he was a member. Not only could it serve to make the elements of the new world familiar to him and render them useful for his purposes, but it could also help him to imagine the shape of the new society that he was then in the midst of making.¹⁰

Lewis and Clark, then, could use taxonomic science to make the unknown wilderness familiar and thus potentially useful. It is this notion, in fact, that is the key to understanding the Lewis and Clark Expedition. Neither of the men were professional scientists, yet their perception of exploration openly embraced science and they were to

⁹ Christopher Looby, "The Constitution of Nature: Taxonomy as Politics in Jefferson, Peale, and Bartram," Early American Literature 22 (1987): p. 252.

¹⁰ Looby, p. 257.

become integral parts of the American scientific movement, for they were able practitioners of Jeffersonian utilitarian science. John C. Greene provides a basis for understanding the scientific context of the times in American Science in the Age of Jefferson. According to Greene, American science was anti-theoretical in nature and oriented towards utilitarian goals. America had neither need nor room for theoretical and abstract scientific philosophy. As a country in its infancy, it instead needed people to explore, study, and detail its vast wildernesses, new species, and exotic natives. In short, the abundance of raw scientific material combined with the practical American nature produced a brand of science that was primarily concerned with the "exploration of the New World: naming, classifying, and describing its plants, animals, and minerals; studying its geological structure; determining the latitude and longitude of its towns and cities; [and] researching and speculating about its aborigines and antiquities."¹¹ Given the nature of these tasks, amateur scientists such as Meriwether Lewis were often virtually as effective as highly trained professionals; and since they were much more common, they accordingly became an extremely important element of American science.

It was thus the duty of Lewis and Clark to accurately and thoroughly describe the many new phenomena that they would come into contact with in the West. Nothing was to escape their description and quantification (for the essence of their expedition was the quantification of the unknown), whether it was a hill, a

¹¹ John C. Greene. American Science in the Age of Jefferson (Ames: The Iowa State University Press, 1984) pp. 3, 27.

stream, an animal, or an Indian mound. Lewis and Clark examined all of these things, and more. They wrote extensively on plants and Indians, measured daily air and water temperatures, and meticulously recorded travel distances, times, and dates. Jefferson could have done no better. Greene says that Jefferson

had a passion for collecting facts, and a mania for measurement. He measured all kinds of things: the trunks of trees, the height of mules, the weight of peas and strawberries grown on his plantation, the time it took a workman to fill a wheelbarrow and roll it thirty yards, the time it took a stone dropped in the fountain at Nîmes to reach the bottom of the pool, the dimensions of the arches in the amphitheater at Arles, the size of Roman bricks in the Bordeaux circus, how long it took to pass through the locks at Béziers, even the time it took to dig the grave of his deceased friend Dabney Carter.¹²

In short, to Lewis and Clark, exploration was not merely a passive absorption of information. To answer the types of questions that Jefferson wanted answered necessarily required a high degree of organization and planning. Jeffersonian exploration was, to quote the noted frontier scholar James P. Ronda, a "carefully programmed enterprise."¹³ This programming took the form of preparation and planning, but ultimately depended upon anticipation. If explorers were to program their voyages in advance, they had to have some form of knowledge of both their goals and the territory which they would explore. Correspondingly, Ronda, and others such as historian

¹² Greene, p. 30.

¹³ James P. Ronda, "Dreams and Discoveries: Exploring the American West, 1760-1815," William and Mary Quarterly 46, 1 (1989): pp. 147-148.

John L. Allen, point to preconceived ideas about geography as the key to understanding western exploration. Such images were certainly known to Lewis and Clark, for ideas of what the West was like were as common then as ideas about what lay across the Atlantic were four hundred years previous. For instance, the trans-Mississippi West was believed by some to be a "garden," by others to be a desert.¹⁴ Other preconceptions were fantastic, such as the idea that there were tribes of Welshmen and Hebrews among the Indians, mountains of salt, and active volcanoes. And, of course, there was the firm belief in the ever-elusive Northwest Passage that would link Western civilization with the Orient and be one of the central objectives of the Lewis and Clark Expedition. Allen indicates the effect of these images, saying:

Preconceived geographical ideas have always had an impact on exploration--if only for the simple fact that explorers do not go out in quest of nothing but have certain objectives gleaned from the geographical lore of their own and earlier times. No territory is ever really *terra incognita*, since minds abhor blank spaces on maps just as nature abhors a vacuum. That the knowledge from which men create regional images of unexplored territories is invented or imagined knowledge instead of real knowledge is unimportant--for invented geography is perceived as real until proven unreal by exploration and observation.¹⁵

¹⁴ John L. Allen, Passage Through the Garden: Lewis and Clark and the Image of the American Northwest, (Urbana: University of Illinois Press, 1975) pp. 2-3.

¹⁵ Allen, p. 225.

A close look at the degree of "programming" of the Lewis and Clark Expedition validates Ronda's and Allen's claims--preconceived ideas were of vital importance to the establishment of a strict agenda by which Lewis and Clark could carry out their experiment. However, there is something that neither Ronda nor Logan sufficiently addresses and that is what was perhaps the most important perception of all--the explorer's perception of himself. Lewis and Clark saw themselves as men whose task it was to construct an order for the previously uncharted trans-Mississippi West. Accordingly, they "programmed" their enterprise so that it allowed them to ask the questions that would create this order. As long as they maintained their ordered relationship with the wilderness through which they travelled, they were able to see themselves as masters of their experiment and thus achieve the goals which they had established.

III

Physical Programming

There was both a physical and a mental programming that went into the Lewis and Clark Expedition. In the former, the expedition moved from theory to reality as leaders and members were chosen and incorporated into a party that could withstand a prolonged wilderness voyage. In the latter, the leaders of this party prepared themselves scientifically by gathering lists of questions and carefully formulating their goals. Whether physical or mental, all of this planning, organization, and preparation grew out of the

fundamental Enlightenment assumption that it was within man's power to control and understand his environment. The creation of an ordered, coherent expeditionary party that had been carefully constructed to achieve specific pre-determined goals was a very logical step from this assumption. This step, though logical, was not easy. Indeed, the final product, the Corps of Discovery, represented the culmination of many years of painstaking thought, planning, and preparation.

In many ways, the "programming" of the Lewis and Clark Expedition began with its very conception in the mind of Thomas Jefferson. The idea of western exploration was, at first, merely a vague idea in his mind--a certain itch, a will to know what was unknown. In any case, to Jefferson the West was always more than a potential new addition to the territory of the United States. It was an immense scientific laboratory wherein exciting new flora, fauna, and geographic phenomena lay waiting to be examined by the enlightened eye. His attempts to have this new area explored can be traced back to 1783, when he wrote to the renowned woodsman George Rogers Clark and offered him command of a far-western exploratory venture. In 1783, though, the United States was only just emerging from colonial rule and faced more pressing matters than the exploration of a far-off and abstract wilderness. Indeed, the frontier of the Ohio was still in the process of being tamed. In any event, Clark declined the offer. The trans-Mississippi region would have to wait--Jefferson's hopes were still little more than dreams. In the following years there would be other proposals and other plans.

Not until 1793, though, would Jefferson's dreams see any realistic chance of being enacted.

In 1793 the French botanist André Michaux nearly became the explorer who would bring Jefferson's long-held dreams of discovery to fruition. Although politics would ultimately foil the Michaux odyssey, it is nevertheless worthy of close study, for it was to directly foreshadow the Lewis and Clark Expedition. Jefferson's letter to Michaux of April 30, 1793 bears examination. In that document, Jefferson wrote:

the chief objects of your journey are to find the shortest & most convenient route of communication between the U.S. & the Pacific ocean, within the temperate latitudes, & to learn such particulars as can be obtained of the country through which it passes, it's productions, inhabitants & other interesting circumstances...You will, in the course of your journey, take notice of the country you pass through, it's general face, soil, rivers, mountains, it's productions animal vegetable, & mineral so far as they may be new to us & may also be useful or very curious; the latitude of places or materials for calculating it by such simple methods as your situation may admit you to practice, the names, numbers, & dwellings of the inhabitants, and such particulars as you can learn of their history, connection with each other, languages, manners, state of society & of the arts & commerce among them. Under the head of Animal history, that of the Mammoth is particularly recommended to your enquiries.¹⁶

It is important to understand the context in which the Michaux expedition was conceived. The American Philosophical Society, a

¹⁶ Donald Jackson, Letters of the Lewis and Clark Expedition, vol. 2 (Urbana: University of Illinois Press, 1978) pp. 669-670. Hereafter referred to as "Letters."

collection of the country's leading minds, was to finance it. Logically, as the financiers, it was these men who would set the agenda for the voyage. In its written report of January 22, 1793, concerning the "Agreement of Subscribers to André Michaux's Expedition," the society further emphasized the goals and hopes that it held for the venture. The report stated that the members of the society were "desirous of obtaining for ourselves relative to the land we live on, and of communicating to the world, information so interesting to curiosity, to science, & to the future prospects of mankind."¹⁷ It is through these words that the scientific spirit of Jefferson, Lewis, and Clark can be understood. They were the words of science, the words of the Enlightenment. In them one can see a blend of curiosity ("information so interesting to curiosity") and utilitarianism ("the future prospects of mankind"). To Jefferson, then, exploration was a process whereby man increased his knowledge and bettered himself through utilitarian applications of his newfound wisdom. Michaux's voyage was aborted for political reasons before he ever crossed the Mississippi, but its significance as a forerunner of the Lewis and Clark Expedition was already very real. Jefferson's dreams would soon become a reality.

Jefferson's realization of his dreams came by way of his election to the Presidency of the United States. If the nation's highest office afforded Jefferson the opportunity to carry out the exploration of the West, though, so did it create a dilemma. What had once been conceived of as a scientific venture had suddenly

¹⁷ Letters, p. 668.

entered the political realm. A professional scientist would have been best suited to the type of exploration that Jefferson had originally wanted. After all, such a person would have had the trained eye, experience, and background knowledge necessary to analyze and categorize new species of plants and animals. Jefferson had found a man of science in Michaux, who was a botanist. However, when he had dealt with Michaux, Jefferson had acted under the aegis of the American Philosophical Society. Michaux, had he completed his expedition, would have been answerable only to that body, as it controlled his goals and his finances. As President, though, Jefferson was forced to make certain compromises. The only way that any western expedition could receive funding from Congress was if it had specific diplomatic and commercial goals. In his message to Congress of January 18, 1803, Jefferson emphasized the role of such an expedition in promoting trade, establishing relationships with the various Indian nations, and searching for a Northwest Passage. He said, "The interests of commerce place the principal object within the constitutional powers and care of Congress, and that it should incidentally advance the geographical knowledge of our own continent can not but be an additional gratification."¹⁸

There were further consequences of the mutation of the proposed expedition from purely scientific to governmental. If detailed maps and charts were to be made, materials and instruments would have to be taken. If the Indian nations were to be brought under a common trading network, large amounts of trade

¹⁸ Letters, p. 13.

goods would be needed. Large stores of goods would have to be protected from would-be Indian raiders, therefore, professional soldiers with extensive weaponry were necessary. To transport all of this equipment, boats were a necessity; ergo, the expedition would have to include boatmen. George Rogers Clark had recommended a small party of "three or four young Men,"¹⁹ and as late as 1803 Jefferson conceived of "a party of about ten men."²⁰ Just over a year later, however, the Corps of Discovery, consisting of more than forty men, began its trek up the Missouri River. As a party it had been organized so that it was capable of functioning in both a scientific and diplomatic capacity.

Such a feat might well have been impossible had Jefferson adhered to a more European, theoretical view of science. To him, though, science was concerned more with practical description and classification than the application of complex laws or the creation of theories. Greene says, "Jefferson was more impressed by Edward Jenner's discovery of the cowpox vaccine for smallpox than by William Harvey's demonstration of the circulation of blood. The latter, he conceded, was a 'beautiful addition to our knowledge of the animal economy,' but what had it done to improve the practice of medicine?"²¹ Jefferson wanted facts, not theories, and he realized that an intelligent man with some basic training in the sciences would be sufficient, if not optimal, for the expedition. Meriwether Lewis, Jefferson's private secretary of two years, was just such a

¹⁹ Letters, p. 656.

²⁰ Letters, p. 21.

²¹ Greene, p. 33.

man, and so in 1803 did he find himself preparing to lead the first American transcontinental expedition.

Writing to the noted intellectual Benjamin Smith Barton, Jefferson said of Lewis:

I have appointed Capt. Lewis, my secretary, to conduct it [the expedition]. It was impossible to find a character who to a compleat science in botany, natural history, mineralogy & astronomy, joined the firmness of constitution & character, prudence, habits adapted to the woods, & a familiarity with the Indian manners & character, requisite for this undertaking. All the latter qualifications Capt. Lewis has. Altho' no regular botanist &c. he possesses a remarkable store of accurate observation on all the subjects of the three kingdoms, & will therefore readily single out whatever presents itself new to him in either: and he has qualified himself for taking those observations of longitude & latitude necessary to fix the geography of the line he passes through.²²

Lewis was not a professional scientist, but he was capable of meeting the scientific goals that Jefferson had for the expedition. He could ascertain and describe what was "new," and by doing this alone he would be fulfilling an important role. Jefferson repeatedly said that Lewis's existing knowledge was sufficient to allow him to "readily seize whatever is new in the country he passes thro, and give us accounts of new things only."²³ But if he was not a trained scientist, then neither was he an experienced explorer. Instead, he was a military man with the intelligence, temperament, youthful vigor, and

²² Letters, p. 17.

²³ Letters, p. 18.

experience necessary to lead a protracted wilderness expedition. In short, he was a compromise between two opposing ideals, and as such, he was perhaps as close to being a perfect leader as Jefferson was likely to find.

Before the expedition could depart for the wilderness, Lewis had to organize a party that would be able to overcome the practical challenges of the journey and thus allow for the successful attainment of both scientific and diplomatic goals. This task was crucial to the overall success or failure of the expedition, for no matter how many scientific discoveries it made, and no matter how logical and precise its observations, if it could not deal with the elements, the native inhabitants, and the wilderness, then all would be for naught.

The actual organization of the party was rational and methodical. First, Lewis chose a second in command, William Clark. Clark, who had served with Lewis before, was given equal status for the expedition, and the partnership between the two was a successful example of joint leadership. Clark brought several things to the party. His affinity with the Indians and with the frontier in general made him an excellent addition, for not only was he able to contribute to the scientific study of the Native Americans, but he also proved to be an excellent diplomat when it came to Indian relations.

The choice of Clark as co-leader was probably not difficult for Lewis. The two were friends, and seemed to complement each other without creating tension. The selection and training of a party, though, was a different matter. If exploration was a controlled experiment, then the composition of the exploratory party was one of

its key ingredients. Whereas Jefferson had lost much of his direct control over the expedition with his selection of a leader, Lewis lost much of his control over the ultimate outcome with the selection of a party. The expedition was only as good as its members.

It was at this point that Jefferson's compromise in choosing Lewis began to reveal itself for the excellent decision that it was. Had he chosen a scientist, the expedition most likely would have failed. A scientist could have described and classified nature better than Lewis. It is highly doubtful, though, that he could have put together a party that would have allowed him to survive, much less to achieve his scientific goals. The party that Lewis and Clark would need was one that would be capable of handling the challenges posed by thousands of Indians, by wild animals, and by the environment itself. A combination of soldiers, civilian woodsmen, and boatmen, it would have to provide the captains with the technical support necessary to achieve their many goals. Had George Rogers Clark's suggestion that the party be composed of "three or four young men" been followed, the expedition would have been unable to carry out the scientific observation and the political maneuvering that Jefferson wanted.²⁴ In order to carry the trade goods necessary to accomplish the expedition's diplomatic objectives, convey the political message that Jefferson wanted to send to other nations, and transport the many scientific instruments, journals, and specimens that Lewis and Clark needed to categorize what they saw, a large party was necessary--one that could deal with any military exigency

²⁴ Letters, p. 656.

and one that could man the boats that were necessary to move the large volume of supplies.

Almost single-handedly, Lewis set about recruiting such a group. He said, in his letter to Clark of June 19, 1803, "it shall be my duty by enquiry to find out and engage some good hunters, stout, healthy, unmarried men, accustomed to the woods, and capable of bearing bodily fatigue in a pretty considerable degree."²⁵ It is apparent that Lewis understood the degree of difficulty which the wilderness would present his party. He did not seek philosophers, botanists, zoologists, and astronomers to accompany him, for he knew that the rigors of the trail would likely cause a party so constituted to fail. He with his training, and Clark, with his intelligence and perspicacity, would deal with the scientific aspects of the journey. It would have to be so if there was to be any chance of success. And it must be remembered that failure was not to be taken lightly. It might mean an aborted expedition, a disappointment to the President. Or, more likely, it might mean death. The maps available in the pre-expedition years featured an enormous blank area between the Mississippi and the West coast. That this area could easily swallow a small party of men at any time was accepted as fact.

Lewis, then, when he organized the Corps of Discovery, demonstrated the practicality that had entered so heavily into Jefferson's decision to appoint him leader. The final roster of the expedition represented a formidable list of frontiersmen. The veteran interpreter and hunter George Drouillard, the "nine young

²⁵ Letters, p. 58.

men from Kentucky,"²⁶ French boatmen, the blacksmith/tinkerer John Shields, soldiers experienced in Indian fighting--these were the men that Lewis chose to accompany him.

The fact that Lewis had done an extraordinary job in selecting his party is evidenced in the historical record. For two years the expedition travelled through a wilderness that housed every sort of danger imaginable. Not only did the party maintain almost entirely peaceful relations with the Indians and encounter only a few minor disciplinary problems, it also lost but one man--to what was probably a ruptured appendix. This remarkable record of success can be directly attributed to both the captains' enlightened outlook and the excellent organization of the party itself.

IV

Mental Programming

Physical preparation, though essential, was not enough for a successful expedition. In order to make sense out of the wilderness, Lewis and Clark would have to know in advance what their goals were and have the means necessary to meet them. In this task, Lewis received extensive guidance from Jefferson. Nowhere was this guidance more obvious than in Lewis's hurried education in the sciences. This education came about when Jefferson, in a final exercise of his control over the expedition, sent his young protégé to Philadelphia, where his bright but untrained mind was shaped by

²⁶ Journal 2, pp. 509-529. The phrase is a recurring one in expedition history.

several of America's greatest men of science in a brief but spectacular series of tutorials. In early 1803 Jefferson wrote to such men as Benjamin Smith Barton, Andrew Ellicott, Caspar Wistar, Dr. Benjamin Rush, and Robert Patterson, informing each that Lewis would soon be in Philadelphia and advising them to take advantage of their time with him, teaching him as much as possible and providing him with "notes of such particulars as may occur in his journey & which you think should draw his attention & enquiry."²⁷

It will never be known exactly what transpired between Lewis and these notable thinkers during his weeks in Philadelphia, but it is nevertheless apparent that young Meriwether's tutors provided him with ample intellectual guidance on topics such as zoology, botany, astronomy, navigation, record-keeping, ethnology, and medicine. Dr. Benjamin Rush seemed to have been particularly helpful, for the types of information in the expedition journals suggest that the list of questions he gave Lewis was well received and utilized. Rush's list of questions regarding Native Americans was divided into three parts: physical history and medicine, morals, and religion. The first part included such questions as "What are the acute diseases of the Indians?...Is Gouture, apoplexy, palsy, Epilepsy, madness [...] ven. Disease known among them?" The second part made inquiries such as "What are their vices?...Do they employ any substitute for ardent spirits to promote intoxication?" Finally, the third part asked "What affinity between their religious Ceremonies & those of the Jews?...What are the principal Objects of their worship?"²⁸ Rush's

²⁷ Letters, p. 19.

²⁸ Letters, p. 50.

assistance, though, did not stop with questions. In addition, he provided Lewis with several medicines for the party as well as a list of his rules for health, which included such guidelines as "Unusual costiveness is often a sign of approaching disease. When you feel it take one or more of the purging pills," and the more medically questionable "After having had your feet much chilled, it will be useful to wash them with a little spirit."²⁹

What Rush's assistance to Lewis makes clear is the high degree to which the entire expedition was a "carefully programmed enterprise."³⁰ When one reads journal entries such as Lewis's of August 19, 1805, in which he described Shoshone familial structures, morals, appearances, and diseases, Rush's guidelines seem especially important. For instance, it is easy to see the correlation between Rush's instructions regarding disease and Lewis's observation that he "was anxious to learn whether these people had the venereal...the information was that they sometimes had it but I could not learn their remedy...this seems a strong proof that these disorders both gonorrhoea and Louis venerae are native disorders of America."³¹ In addition, when one looks closely at the many cases of sickness throughout the journals and marvels at the medical successes of Lewis and Clark in treating their men, themselves, and the Indians (only one man from their party died in two years of rugged wilderness toil), it becomes apparent that there was more at work than mere luck. Rush's advice was more than a series of interesting

²⁹ Letters, pp. 54-55.

³⁰ Ronda, "Dreams," pp. 147-148.

³¹ Journal 5, p. 122.

suggestions. It was part of a process that ensured that the expedition was planned, down to the last detail, around certain assumptions regarding the role of the explorer. What becomes clear from all of the pre-expeditionary documents is one thing: even if Lewis and Clark were unsure exactly what they would find, their planning and thought was done as if they knew precisely what lay ahead. In this way they achieved a control over the vast wilderness that lay before them, and when they entered it, they did so not as children entering a candy shop to marvel at the wide array of goodies but as soldiers entering a battle in which they had anticipated the nature of their enemy and were prepared to succeed regardless of the difficulty.

If Rush's instructions constituted only a small part of the expedition's planning, Jefferson's instructions were the core around which the expedition was based. They were organized around three primary themes. The first part read:

The object of your mission is to explore the Missouri river, & such principal stream of it, as, by it's course and communication with the waters of the Pacific ocean, whether the Columbia, Oregon, Colorado, or any other river may offer the most direct & practicable water communication across this continent for the purposes of commerce.³²

After describing the first goal of searching for a Northwest Passage, Jefferson instructed Lewis and Clark to determine the nature and extent of the various Indian tribes that resided along their route,

³² Letters, p. 61.

noting their numbers, habits, and customs. Finally, he included a list of "Other objects worthy of notice," which included questions regarding geography, flora, fauna, climate, and minerals.³³

Two things are striking about Jefferson's instructions: their comprehensiveness and their strict utilitarianism. With the instructions in hand, Lewis and Clark had little to do but observe their surroundings and record what they saw in response to Jefferson's questioning. Indeed, one is reminded of Notes on the State of Virginia, in which Jefferson wrote detailed answers to a series of queries regarding the geography, animals, plants, Indians, and cultural and political institutions of his native state.³⁴ The careful ordering of Jefferson's instructions and their overall comprehensiveness meant that little would be left to chance. Lewis knew what he would be writing about long before he ever began his journals. In spite of this comprehensiveness, though, Jefferson's instructions were strictly utilitarian. In fact, virtually every time Jefferson turned to a new area which he wanted Lewis to observe he offered a brief statement concerning the practical benefit of such observation. Before he listed his questions regarding the Indians, he said: "The commerce which may be carried on with the people

³³ Letters, pp. 62-63.

³⁴ This work is an excellent example of Jeffersonian scientific observation, and as such it serves as an important precursor of the Lewis and Clark Journals. William H. Goetzmann says, "If Jefferson's famous Notes on Virginia can be said to constitute a perfect model of the rational eighteenth-century mind organizing the facts of physical and human nature into a broadly conceived and generally useful pattern, then in equal measure the same can be said for the instructions given to Lewis and Clark." And, by extension, the Lewis and Clark Journals can be seen as an attempt to accomplish the same feat. William H. Goetzmann, Exploration and Empire: The Explorer and the Scientist in the Winning of the American West, (New York: Alfred A. Knopf, 1966.) p. 5.

inhabiting the line you will pursue, renders a knowledge of those people important."³⁵ Shortly thereafter he wrote:

considering the interest which every nation has in extending & strengthening the authority of reason & justice among the people around them, it will be useful to acquire what knowledge you can of the state of morality, religion, & information among them; as it may better enable those who may endeavor to civilize & instruct them, to adapt their measures to the existing notions & practices of those on whom they are to operate.³⁶

Giving Lewis a list of detailed instructions was one of the last controls that Jefferson had over the eventual outcome of the expedition. He had already taught his young friend in the course of many conversations in Washington, and he had already sent him to Philadelphia to be tutored by the best minds in America. There was nothing else Jefferson could do. As 1803 moved steadily by, Lewis found himself to be increasingly in charge of not only his own destiny but also of all of Jefferson's long-held dreams. He was the one who would translate all of the talk into action: he was the one who had to apply Jefferson's questions to the wilderness.

This extensive process of preparation, which flowed naturally from Jefferson's and Lewis's assumptions regarding man's preeminence over his environment, led Lewis to write, as he left the Mandan villages on the spring day of April 7, 1805:

³⁵ Letters, p. 62.

³⁶ Letters, pp. 62-63.

Our vessels consisted of six small canoes, and two large perogues. This little fleet altho' not quite so respectable as those of Columbus or Capt. Cook were still viewed by us with as much pleasure as those deservedly famed adventurers ever beheld theirs; and I dare say with quite as much anxiety for their safety and preservation. we were now about to penetrate a country at least two thousand miles in width, on which the foot of civilized man had never trodden; the good or evil it had in store for us was for experiment yet to determine, and these little vessells contained every article by which we were to expect to subsist or defend ourselves. however as this the state of mind in which we are, generally gives the colouring to events, when the immagination is suffered to wander into futurity, the picture which now presented itself to me was a most pleasing one. entertaing {now} as I do, the most confident hope of succeeding in a voyage which had formed a da[r]ling project of mine for the last ten years {of my life}, I could but esteem this moment of my {our} departure as among the most happy of my life. The party are in excellent health and sperits, zealously attached to the enterprise, and anxious to proceed; not a whisper of murmur or discontent to be heard among them, but all act in unison, and with the most perfect harmony.³⁷

Lewis's confidence is unmistakable. He had no intention of being "mastered" by the wilderness. A close reading of this text reveals the many clues which point to Lewis's assumptions regarding man's relationship to the frontier. "Experiment" would determine the nature of the wilderness, and the ample supplies which were packed into the "little vessells" would allow that experimentation to proceed unimpeded. When Lewis's "da[r]ling project" finally got underway, its members were confident, informed, and prepared. And because they were armed with a coherently organized, "harmonious" party; a

³⁷ Journal 4, pp. 9-10.

detailed list of instructions, questions, and goals; and a distinct scientific technique, Lewis and Clark themselves were ready to construct an order out of the chaos that was the wilderness.

V

Within the Construct

By approaching the wilderness as an immense laboratory in which lay numerous unknown phenomena that were to be detailed and classified, Lewis and Clark were able to establish a mental distance from which to observe their data. As long as this artificial construct remained intact, they were able to effectively reduce and quantify the unknown wilderness through precise description and measurement.

From very early in the expedition, the journals of the two captains are filled with the kind of taxonomic descriptions that Jefferson had hoped for and that he had in fact made himself in Notes on the State of Virginia. What is striking about these observations is their objectivity, their attention to detail, and their ability to make familiar what had before been unknown. That they did so was critically important, for regardless of what Lewis and Clark discovered in the wilderness, if they could not clearly transfer their findings to paper then the scientific goals of the expedition would have been unattainable.

Lewis began to make such observations even before he left "civilization." In fact, while descending the Ohio River on his way to the expedition's staging area at Camp Dubois (in what is now Illinois),

he wrote extensively on the flora, fauna, geography, and settlers that he saw. His description of a catfish is typical of the type of observation that Jefferson wanted and that he and Clark would supply throughout the expedition:

we were a little surprised at the apparent size of a Catfish which the men had caught in our absence altho we had been previously accustomed to see those of from thirty to sixty pounds weight we determined to ascertain the weight of this fish after taking the following dementions of it..³⁸

Lewis proceeded to list the measurements of the following dimensions: "length; width between eyes; circumpherence around the head just above the first fins and lower extremity of the gills *being the large part of the fish*; the dementions of the mouth when opened to the ordinary, or easy practicable width was From the center of the lower to the upper jaw; width from side to side..."³⁹ After measuring the fish, Lewis went on to carefully weigh its "head; enterals--very emty; [and] other parts of carcase" and then proceeded to add an additional five pounds for "the loss of blood, its lying out of the water six hours in the sun, & the waistage from the circumstance of being obliged to weigh it in small draughts not having any method of weighing entire." The catfish was indeed a monster--Lewis's measurements list it at four feet, three and a quarter inches long and one hundred and twenty-eight pounds.⁴⁰ A single catfish, although a large one, thus dominated Lewis's journal

³⁸ Journal 1, p. 89

³⁹ Journal 1, pp. 89-90.

⁴⁰ Journal 1, pp. 89-90.

entry of November 16, 1803. The importance of this entry, though, has little to do with the fish. Rather, in it one can see a strong attempt on the part of Lewis to perfectly describe a particular phenomenon, an attempt that was careful to follow the Jeffersonian scientific tradition.

Such descriptions would become commonplace over the two years of the expedition. All told, Lewis and Clark would record hundreds of precise observations about a wide variety of phenomena. They would weigh, sketch, measure and describe numerous new species of plants and animals, write extensively about the streams, mountains, and plains that they traversed, and make detailed lists of Indian customs, vocabularies, and tribal strengths. At times, they wrote with an eye towards immediate practical application (most of their observations were practical in the long term). For example, on August 3, 1804, Clark suggested, in his rather straightforward style, a possible location for a trading post or fort:

The Situation of this place which we Call *Council Bluff* which is handsom ellevated a Spot well Calculated for a Tradeing establishment, the Bank high & leavel on top well Calculated for a fort to Command the Countrey and river the low bottom above high water & well Situated under the Command of the Hill for Houses to trade with the Natives a butifull Plain both abov and below at no other bend on either Side does the High land touch the river for Some distance up, as I am told.

those Bluffs afford good Clay for Brick, a great quantity on the 3 points one Opsd. one abov & one below.--the Situation I am informed is, within 1 days march of the Ottoes, 1 1/2 of the Panias, 2 of the Mahars, & 2 1/2 of the Loups Villages, also Convenient to the roveing bands of Soux, Those people are now at war with

each other, an establishment here would bring about the peace and be the means of Keeping it.⁴¹

Perhaps some of the expedition's finest descriptive work, though, was ethnological in nature. In addition to documenting the immediately tangible aspects of Indian life, such as dress, housing, and tribal strengths, Lewis and Clark also attempted to describe Indian attitudes and ceremonies. For instance, on August 24, 1805, Lewis wrote:

Among the Shoshones, as well as all the Indians of America, bravery is esteemed the primary virtue; nor can any one become eminent among them who has not at some period of his life given proofs of his possessing this virtue. with them there can be no preferment without some ware-like achievement, and so completely interwoven is this principle with the earliest Elements of thought that it will in my opinion prove a serious obstruction to the restoration of a general peace among the nations of the Missouri.⁴²

These examples of Lewis's and Clark's analytical powers cannot convey the extent to which the two captains reduced the wilderness to the written word. In the literally thousands of pages of their journals one can find every sort of description imaginable--from the nature of the sediment carried by the Platte River to detailed discussions of Indian medicines to the description of a beached whale on the Pacific Coast. After all, the expedition was in the wilderness for two years, and was exposed to new phenomenon virtually every

⁴¹ Journal 2, p. 440.

⁴² Journal 5, pp. 159-160.

day. In spite of being barraged by such a vast amount of information, though, Lewis and Clark were generally able to break it down according to the categories that had been established in their instructions from Jefferson, Rush, and others. By painstakingly separating individual items from this whirl of stimuli and recording their physical properties on paper, Lewis and Clark were effectively exercising Enlightenment exploration as they had conceived of it from the very beginning of their venture.

At no time was this more true than during the explorers' stay at Fort Mandan during the winter of 1804-5. During that period they reviewed their journal entries from their initial trek up the Missouri and compiled several of the important elements into more detailed and thorough accounts, which were then sent back to Jefferson in the spring along with a variety of frontier artifacts, information, and oddities. These accounts represent perhaps the best the expedition had to offer in a scientific context, and they reflect a strong reliance on the expedition's comprehensive instructions. Two compilations in particular were every bit the equal of similar chapters in Jefferson's Notes on the State of Virginia: the "Summary View of the Rivers and Creeks, which discharge them[selves] into the Missouri," and the "Estimate of the Eastern Indians."⁴³

The "Summary View of the Rivers and Creeks, which discharge them[selves] into the Missouri," was a highly organized, extremely thorough catalogue of the various tributaries which the expedition

⁴³ Journal 3, p. 336-505. These pages are grouped into an appendix entitled "Fort Mandan Miscellany." The title "Summary View of the Rivers and Creeks," is actually not a title, but is rather the first line of the account. "Estimate of the Eastern Indians," on the other hand, is a recognized title.

had charted in its trip up the Missouri River. Whereas the journal entries that Lewis and Clark kept on a more or less daily basis were typically a page or two in length, the "Summary View" was approximately forty-six pages long. Each river or creek in this document was carefully described in prose and listed on one of several tables along with relevant numerical data such as distances and widths. This organization was similar to that of Jefferson's response to Query II in Notes on the State of Virginia.⁴⁴

The "Estimate of the Eastern Indians," like the "Summary View," was highly organized and thorough, and reflected a careful consideration of the types of questions that Jefferson and Rush had provided the expedition with before it left civilization. As was the case with the "Summary View," the "Estimate" was of substantial length--sixty-four pages in Gary E. Moulton's edition of the Journals. The "Estimate of the Eastern Indians," was, in Ronda's words, "the showpiece of their ethnography...In concept and design it was as scientific as expedition ethnography ever got."⁴⁵ This is not an overstatement, for the "Estimate" was just that. It was a synthesis of all of the scientific ideals that went into the Lewis and Clark Expedition, and it can be seen as the finest achievement of Enlightenment exploration. Lewis and Clark had travelled for half a year among the numerous tribes of the Missouri River. In the "Estimate" they presented, in tabular form, their observations of each

⁴⁴ Query II reads: "A notice of its [Virginia's] rivers, rivulets, and how far they are navigable?" Thomas Jefferson, "Notes on the State of Virginia," Thomas Jefferson: Writings, ed. Merrill D. Peterson (New York: Literary Classics of the United States, Inc., 1984) p. 129.

⁴⁵ James P. Ronda, Lewis and Clark Among the Indians, (Lincoln: University of Nebraska Press, 1988) p. 124.

tribe arranged as answers to nineteen specific questions. These questions ranged from "g. Number of Warriours," to "j. The places at which the Traffick is usually Carried on," to "n. The defferant kinds of Pelteres, Furs, Robes Meat Greece & Horses which each Could furnish for trade."⁴⁶

In addition to the "Summary View" and the "Estimate of the Eastern Indians," Lewis and Clark also sent back to Jefferson several other collections of notes after their winter with the Mandans. These notes included extensive inventories which listed and explained the plant and mineral specimens being sent with the return party, as well as miscellaneous writings on ethnology, geography, and potential locations for settlement. As with the other work from Fort Mandan, they were highly organized and carefully presented, much like Jefferson's Notes on the State of Virginia.

Based on those items which were sent back to Jefferson with the return party led by Corporal Warfington, it is safe to conclude that Lewis and Clark exhibited their best scientific form during that first leg of their journey which ended with the winter of 1804-5. A variety of factors explain why this work was so well done. First, the expedition had yet to encounter serious physical privation. In addition, wintering at Fort Mandan was generally agreeable to the party, and the atmosphere there was friendly and conducive to the work which Lewis and Clark had to do on a daily basis to prepare their notes for Jefferson. In fact, because it was the first work that Jefferson would see perhaps the explorers were especially careful

⁴⁶ Journal 3, pp. 388-389.

that it should reflect the careful application of his instructions. Also, the territory and phenomena that the party had passed through on its way to Fort Mandan was relatively familiar. It was wilderness, to be sure, and it was largely undescribed and unknown, but relative to what they would encounter once they passed the Mandan villages it was already fairly well travelled by French trappers and traders. For whatever reasons, the Fort Mandan information represented the clear application of the Jeffersonian scientific method that Lewis and Clark hoped to apply to the entire wilderness. For the first part of their journey, at least, their scientific construct had held up well, allowing them to create an order out of the wilderness.

VI

Outside the Construct

If it had little problem in documenting that which was expected--that is, new species of plants and animals, the courses of streams and rivers, and the nature and extent of plains, forests, and mountains; the Lewis and Clark Expedition nevertheless faced moments when its scientific approach broke down.

These breakdowns, though rare, occurred throughout the course of the expedition, and were precipitated by a variety of factors. Moments of crisis, despair, emotion, or privation alternatively served to eliminate the objective distance that was critical to effective observation and analysis. These moments accomplished this feat by pulling Lewis and Clark into "the process,"

whereas their scientific approach demanded that they remain aloof from "the process."

The most obvious example of this breakdown can be seen in the expedition's relations with the Northwest Indians. In "Lewis and Clark Probe the Heart of Darkness," William Nichols identifies part of this breakdown. He points to the Corps of Discovery's experiences among the Indians of the Northwest Coast as being responsible for a fundamental change in the tenor of the expedition's approach to the Indians with which it was forced to deal. According to him, Lewis and Clark became frustrated with the thievery, prostitution, and underhanded trading manner of the Indians of the Northwest Coast. When combined with the generally unattractive culture and lifestyle of these Indians vis-a-vis the Indians of the Plains, the party's failure to find a Northwest Passage, and the general fatigue that had set in at that point in the expedition, these annoyances began to dominate the explorers' perceptions of the Indians. Nichols says, "unable to make sense of these societies by means of the disciplined observation that had served them well on their westward journey, Lewis and Clark were thrown back on the irrationally conceived, rigid stereotypes that have been the framework of most Indian-white contact."⁴⁷

To support this thesis, Nichols cites numerous examples from the journals that directly contradict the expedition's earlier Enlightenment approach: Lewis's characterization of the Indians as "treacherous" and his threat to burn their lodges, the use of threats

⁴⁷ William Nichols, "Lewis and Clark Probe the Heart of Darkness," American Scholar 49 (1979-1980): pp. 97-100.

and intimidation to gain food, and violence against the Blackfoot Indians over an incident of thievery.⁴⁸ The following passages indicate a frustration on the part of the expedition that was most likely caused by the severe physical hardship of the Pacific Northwest.⁴⁹ On February 20, 1806, Lewis wrote:

notwithstanding their [the Indians] apparent friendly disposition, their great avarice and hope of plunder might induce them to be treacherous. at all events we determined allways to be on our guard as much as the nature of our situation will permit us, and never place our selves at the mercy of any savages. we well know, that the treachery of the aborigines of America and the too great confidence of our countrymen in their sincerity and friendship, has caused the distruction of many hundreds of us.⁵⁰

This attitude stood in marked contrast to the general trend of Indian relations in the first half of the expedition. On the whole, Indian relations during that time were remarkably open and friendly, and one need only compare the "Estimate of the Eastern Indians" to the "Estimate of the Western Indians" to see the

⁴⁸ Nichols, pp. 97-99. Most of the passages that immediately follow are cited by Nichols, but not quoted. The actual text of the journals is provided here, for it is very revealing as to the mind-set of the expedition.

⁴⁹ During that time in the expedition's history, the party was exhausted, malnourished, and sickly. Food was scarce, flees and disease were common, and the wet weather of the Northwest Coast made for a gloomy winter. Ronda says, "A long way from home, the expedition felt hemmed in by a strange environment and seemingly unpredictable people. Isolation, loneliness, and fear--all extract a high price from even the strongest and most moral. Such conditions often release pent-up feelings of hostility toward outsiders. Fort Clatsop always had an atmosphere of 'us versus them,' unlike the 'we' of Fort Mandan. Lewis and Clark were not the first Europeans who had their moral sensibilities challenged and then eroded by the new American land." Ronda, Lewis and Clark Among the Indians, p. 212.

⁵⁰ Journal 6, pp. 330-331.

differences in scientific efficacy that resulted. In the former can be seen a comprehensive, ordered analysis that was based on careful application of pre-determined questions. The latter, though, offers little by comparison. It was brief, often superficial, and, in Ronda's words, "not nearly as intricate or comprehensive."⁵¹ The following passage, written shortly after the winter at Fort Clatsop, helps to illustrate the frustration that contributed to the scientific lapses the expedition experienced. On April 2, 1806, Clark wrote:

I entered one of the rooms of this house and offered Several articles to the natives in exchange for Wappato. they were sulkey and they positively refused to sell any. I had a Small pece of port fire match in my pocket, off of which I cut a pece one inch in length & put it into the fire and took out my pocket Compas and Set myself down on a mat on one Side of the fire, and a magnet which was in the tip of my ink Stand the port fire cougth and burned vehemently, which changed the Colour of the fire; with the Magnit I turned the Needle of the Compas about very briskly; which astonished and alarmed these natives and they laid Several parsles of Wappato at my feet, & begged of me to take out the bad fire; to this I consented; at this moment the match being exhausted was of course extinguished and I put up the magnet &c. this measure alarmed them So much that the womin and children took Shelter in their beads and behind the men, all this time a very old blind man was Speaking with a great vehemunce, appearently imploring his gode.⁵²

The feeling that emerges from both of these passages is one of confrontation rather than observation. In part, the explanation for

⁵¹ Ronda, Lewis and Clark Among the Indians, p. 124. The "Estimate of the Western Indians" can be found in Journal 6, pp. 473-492.

⁵² Journal 7, p. 58.

this altered mood lies in the roles that Lewis and Clark played as explorers. They were soldiers as well as scientists, and they often had to act as such. The many roles that Lewis and Clark played, though, were not independent from one another. For the most part, the military and diplomatic relations that Lewis and Clark had with the Indians were peaceful, and thus encouraged scientific observation. At other times, though, as in the examples above, the party's scientific detachment was compromised by the relationship that was established with the Indians for practical, diplomatic, or military reasons.

Though the breakdown that Nichols identifies was the major one, there were other less pronounced instances throughout the course of the expedition. For instance, at times the explorers were unable to retain the emotional distance necessary for objective analysis. This form of letdown, while not serious, nevertheless constituted a lapse in the scientific approach. Lewis, when observing the Great Falls of the Missouri River, wrote:

from the reflection of the sun on the spray or mist which arises from these falls there is a beautiful rainbow produced which adds not a little to the beauty of this majestically grand scenery. After writing this imperfect description I again viewed the falls and was so much disgusted with the imperfect idea which it conveyed of the scene that I determined to draw my pen across it and begin again, but then reflected that I could not perhaps succeed better than penning the first impressions of the mind; I wished for the pencil of Salvator Rosa or the pen of Thompson, that I might be enabled to give to the enlightened world some just idea of this truly magnificent and sublimely grand object, which has from the commencement of time been concealed from the view

of civilized man; but this was fruitless and vain. I most sincerely regretted that I had not brought a crimee obscura⁵³ with me by the assistance of which even I could have hoped to have done better but alas this was also out of my reach; I therefore with the assistance of my pen only indeavoured to trace some of the stronger features of this seen by the assistance of which and my recollection aided by some able pencil I hope still to give to the world some faint idea of an object which at this moment fills me with such pleasure and astonishment, and which of it's kind I will venture to ascert is second to but one in the known world.⁵⁴

Obviously, Lewis was frustrated by his inability to describe the Great Falls. New species of plants and animals could be compared to the flora and fauna that were already known to man; they could be weighed and measured; and in addition there was an established terminology that allowed their appearances to be described--for instance, one could discuss the dorsal fins of a fish, the stem of a plant, or the antlers of a deer. It was a different matter entirely, though, to describe the site of the Great Falls, the Rocky Mountains, or the Pacific Ocean. There was no way that Lewis could have prepared himself for the spectacle that the Great Falls presented him, and even if he had been emotionally prepared, he simply did not have the necessary terminology to reduce the sight to words. By wishing for his "crimee obscura," Lewis indicated that only with the assistance of machinery could his talents produce a representation of the Great Falls. Without such mechanical help, the scientific order

⁵³ Moulton identifies the camera obscura as a box which, by the process of light entering through a lens, "would project an image on the opposite wall...which an artist could then trace." Journal 4, p. 288.

⁵⁴ Journal 4, p. 285.

that he sought to impose was futile. He simply could not quantify the sheer magnitude of the experience that he beheld, and because of this inadequacy, civilization could not truly know its nature.

Though this inability to convey the magnitude of objects that eluded quantification or normal description was relatively rare, it nevertheless suggests the dedication with which Lewis and Clark approached their task. In the above passage one can see Lewis's genuine disappointment at the realization that he could not fulfill his primary duty as captain of the Corps of Discovery--namely, "to give to the enlightened world some just idea of this truly magnificent and sublimely grand object."⁵⁵

If emotions brought on by aesthetic beauty could affect the objectivity of Lewis and Clark, then so could emotions resulting from shock and disgust. As explorers and military men, neither Lewis nor Clark was easily disturbed by the ordinary. In fact, it is apparent that both men were capable of handling even the extraordinary. However, there were still acts on the part of the Indians that caught even Lewis and Clark by surprise. On August 16, 1805, Lewis wrote:

when they [the Indians] arrived where the deer was which was in view of me they dismounted and ran in tumbling over each other like a parcel of famished dogs each seizing and tearing away a part of the intestens which had been previously thrown out by Drewyer who killed it: the seen was such when I arrived that had I not have had a pretty keen appetite myself I am confident I should not have taisted any part of the venison shortly. each one had a peice of some discription and all eating most ravenously. some were eating the kidnies the melt

⁵⁵ Journal 4, p. 285.

and liver and the blood running from the corners of their mouths, others were in a similar situation with the paunch and guts but the exuding substance in this case from their lips was of a different description. one of the last who attracted my attention particularly had been fortunate in his allotment or rather active in the division, he had provided himself with about nine feet of the small guts one end of which he was chewing on while with his hands he was squeezing the contents out at the other. I really did not until now think that human nature ever presented itself in a shape so nearly allied to the brute creation. I viewed these poor starved devils with pity and compassion.⁵⁶

If Lewis could at times demonstrate a great deal of patience and objectivity in his descriptions, then the above passage shows that he was also capable of letting disgust and pity displace scientific analysis. The reader of the journal does not know whether such a feast was commonplace among this particular tribe of Indians, for so overcome by emotion was Lewis that he did not attempt to place the scene into a context that explained a particular aspect of Indian life. Instead, he wrote down his emotional response, one that was built around his assumptions of what was proper and what was "brutish."

Not all of the examples of Lewis and Clark's temporary lapses are as dramatic as this one. Even so, they indicate the difficulty that the two men faced in trying to view the world through the lens of the objective explorer for an extended time period. As scientists, they were generally objective, but they were more than scientists-- they were diplomats, soldiers, leaders, and above all, human beings. When they made journal entries they sometimes did not properly

⁵⁶ Journal 5, p. 103.

change hats from one role to another, and by failing to do so they carried inappropriate biases and prejudices into their writings.

Small things, such as the use of the air gun, cannon, medals, and pirogues to impress and awe the Indians were perhaps inconsistent with Enlightenment exploration but were nonetheless highly effective from a diplomatic, military standpoint. At the same time, both Lewis and Clark were prone to the occasional judgmental comment in which they viewed others by their own standards of what was appropriate. In speaking of the white settlers along the Ohio River, Lewis said, "the inhabitants who live near these riffles...are generally lazy, charge extravagantly when they are called on for assistance and have little philanthropy or continence."⁵⁷ On July 28, 1805, Lewis wrote that Sacagawea, "if she has enough to eat and a few trinkets to wear I beleive she would be perfectly content anywhere," apparently basing his conclusion on the fact that she did not openly show her emotions either when remembering her captivity or returning to her "native country."⁵⁸

In addition to the many factors which precipitated these lapses in Lewis's and Clark's scientific form was one underlying fact: they were but men, and as such they were incapable of perfection. While they were faced with innumerable external crises, it is likely that they were also forced to deal with moments of self-doubt. High in the Rocky Mountains in August of 1805, having led the Corps of Discovery across half a continent, Lewis wrote the following in his journal:

⁵⁷ Journal 1, p. 68.

⁵⁸ Journal 5, p. 9.

This day I completed my thirty-first year, and conceived that I had in all human probability now existed about half the period which I am to remain in this Sublunary world. I reflected that I had as yet done but little, very little indeed, to further the happiness of the human race, or to advance the information of the succeeding generation. I viewed with regret the many hours spent in indolence, and now sorely feel the want of that information which those hours would have given me had they been judiciously expended. But since they are past and cannot be recalled, I dash from me the gloomy thought and resolved in future, to redouble my exertions and at least endeavor to promote those two primary objects of human existence, by giving them aid of that portion of talents which nature and fortune have bestowed on me; or in future, to live for *mankind*, as I have hertofore lived for *myself*.⁵⁹

This passage is of profound significance. In it, Lewis clearly set forth and carefully linked what he saw as the "two primary objects of human existence"--happiness and information. Lewis spoke not of "knowledge" or of "answers," he spoke of "information"--the readily observed, quantifiable facts that both Looby and Greene identify as the goal of Jeffersonian science. This information, because it would increase possibilities for American trade, introduce new plants and animals which would be of a variety of practical uses, and generally increase the potential for prosperity and success of the United States, was the fundamental goal of utilitarian science and as such it was the most basic concern of the expedition.

However, in spite of the optimistic note on which he ended, there is a darker, more pessimistic tone that is evident in the

⁵⁹ Journal 5, p. 118.

passage. How else could Lewis, half-way through one of the most dramatic episodes in exploration history, moan that he had lived only for himself? The words in this passage are the words of a man who believes that he should be able to control his own destiny, but cannot. Likewise, the Jeffersonian perspective held that exploration should be able to master the wilderness, but in the end, it could not completely do so.

Ultimately, those instances in which Lewis and Clark lost their objectivity and thus confounded their carefully constructed scientific model were few, and of significance only to the historian. In its time, the Lewis and Clark Expedition was highly successful and little or no attention was paid to such technicalities. However, in the overall study of the Lewis and Clark Expedition, such lapses help to illuminate the larger struggle between the frontier and the explorer. When Lewis and Clark were among the Indians of the Northwest, they had been in the wilderness for a year and a half. Food was scarce, the elements were severe, and the Indians seemed hostile and savage. Lewis and Clark's Enlightenment approach, which had been so effective in the early days of the expedition (and which would continue to be effective aside from several notable exceptions) did break down temporarily, but so did it recover as the explorers themselves recovered. In effect, at times the frontier "mastered the colonist."⁶⁰ However, during the majority of the time Lewis and Clark were themselves mastering the wilderness. Through painstaking planning, organization, and application of scientific

⁶⁰ Turner, pp. 3-4.

observation they opened a region to the eyes of civilization, demonstrating the ability of rational man to at least achieve a degree of control over his surroundings.

VII

The Interactive Process

A close study of the Lewis and Clark Expedition leaves one with as many questions as answers. The nature of the frontier is questioned, as is the role of the explorer. Was the explorer defined by the land or did he assign it a meaning? How does one assess Lewis and Clark? To an extent, the answers lie within the questions themselves. Regardless of whether they actually did so, Lewis and Clark believed that they were overcoming the frontier. They answered their pre-determined questions, therefore, even if they didn't like all of their answers, they were still judged as successful explorers. At times, the frontier exposed the inadequacies of their approach. Though Lewis and Clark thought they had the apparatus to achieve complete control of the wilderness, they did not. Rather than achieve mastery, they attained an approximately equal footing. What they lacked, though, was not a better approach or a more sophisticated science. Instead, their shortcomings seem to be inherent to exploration. The unknown can never be completely anticipated, and therefore all the explorer can do is prepare himself. If he cannot control what he will see, he must control how he will see. Exploration, then, is a process that involves confrontation, analysis, and interpretation. In this process seemingly contradictory

elements can exist side by side--Turner's frontier and Enlightenment man, chaos and order. Lewis and Clark saw themselves as masters of an experiment. In reality, they were participants in the experiment, and their interaction with the frontier is only a small part of the larger frontier experience of America. By understanding this larger experience, or interactive process, one can see how Turner was both right and wrong. Neither the frontier nor the frontiersman was mastered. Rather, the interaction between the two provided the framework that has dominated American history.

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