Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West Study Guide

Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West by Wallace Stegner

BOOKRAGS

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Plot Summary

Beyond the Hundredth Meridian, by Wallace Stegner, is a work of non-fiction concentrating on the expeditions, government career and scientific work of Major John Wesley Powell. The book begins in 1868 and continues until Powell's death in 1902.

Powell was raised in Midwest America in the years leading to and including the Civil War. When the country began to turn its eyes towards the expansion of the country to the West, Powell was intrigued by the possibilities of scientific expeditions and exploration. He established himself with an Illinois educational institution and began minor, then major expeditions. Gathering qualified personnel and collaborators, somewhat meager financial support and applying his personal determination, Powell launches the first successful expedition to follow the Colorado River through the Grand Canyon.

Powell becomes fascinated with many aspects of science. He develops many theories, and devises projects and expeditions to find facts that will support or repute his theories. After the expedition, Powell enters government service, first in the Bureau of Ethnology, then with the US Geological Survey. Never one to allow mere titles to stand in the way of his interest in a field, Powell continues to work on projects that will affect many fields of science. Powell consistently maps out the path of a project or endeavor, then finds the perfect person to carry the work to its logical conclusion.

Powell moves through the the scientific bureaus of government, organizing them, setting out goals, providing measurable projects and purpose. He leaves a legacy of management that is copied today in every level of government. Some of his projects are continuing to modern times, and many of his principles, such as the value of topographical maps, have been validated many times over.

Powell's first years with Congress and working through government channels are amazingly successful, and he is able to begin many of his projects; however, as he gains power, he gains enemies. His radical ideas about irrigation and the division of powers over land use are fought by politicians, and after a time, he returns to his old love of ethnology to finish out his career. After retirement, Powell continues working on the Sciences of Man, contributing substantially to the knowledge of the field.

As Powell and his staff members sort through the notes, mapping, surveys and data compiled by his own expeditions and those of Hayden, King and other explorers, it becomes clear to Powell that someone needs to devise a definitive plan for the expansion of the West. The plan needs to include the possibilities for mining, farming, ranching and settlement, and provide an ideal situation for the average American who is looking to homestead in the West. Powell realizes over time that the task is one he is ideally suited for and he begins his life's work.

Powell enters government work as an amateur, but as with his amateur status as a scientist, time and experience turn him into an expert. Powell gathers support from

politicians, outside sources, associated institutions such as the Smithsonian, and builds a strong team for his staff.

Part One, The Threshold

Part One, The Threshold Summary and Analysis

On Independence Day, 1868, William Gilpin made a speech in Denver. He speaks of Manifest Destiny and of the glorious opportunities that awaited Americans in the form of the land beyond the Colorado Territory, making a number of unrealistic claims about the viability of settling these vast areas. Gilpin, the territorial governor of Colorado, makes these remarks with the passion for expansion that was common for men of Gilpin's experience and vision in that time.

At the time of this speech, America's explorations of the Western territory that stretched to the Pacific Ocean had revealed vast expanses of forests for timber, meadows for agriculture, mountains for climbing, and land to be settled and cleared. Gilpin's remarks are compared to Major John Wesley Powell, who on this same day in 1868, began an exploration of the Wyoming Territory on a meager budget, staffed with volunteers of limited experience. Major Powell's personality and attitude is introduced to the reader, with an emphasis on Powell's Western-style education. Powell was a man of his time, born and raised in the spirit of an independent thinker and hard worker. Powell pursued so many of his hobbies and interests with a unique intensity, especially in the scientific realm. When he lost his arm in the Civil War, Powell did not slow down on any level.

Powell's Rocky Mountain Scientific Exploring Expedition recevied some excellent publicity through the editor of the Rocky Mountain News, and through Samuel Bowles of the Springfield Republican. No white man has ever followed the Colorado River through the Grand Canyon and it was Powell's goal to have his party be the first. The expedition's membership altered by August, as Powell recruited several of mountain men and trappers to join the party. These men would be useful in providing food for the party and some protection against Indians. Most of the mountain men were in the Civil War as soldiers whereas both John and Walter Powell were officers. The trappers were not interested in scientific specimens or maps but wanted to find gold and new trapping grounds. Powell ordered the boats from Chicago and then went to Washington to look for backing. The four boats were twenty-one feet long, made of oak, and designed to carry 4500 pounds each. They arrived at Green River in May of 1869. The pilot boat was named Emma Dean, after Mrs. Powell, who waited back in Detroit for the outcome of the expedition.

For many years, men had speculated on the possibility of a river that would cut across the West, and provide a water route to the Pacific from the area of the Grand Canyon. A man named Samuel Adams, an adventurer with the gift of talk, was a man who believed such a passage existed and presented himself as an expert on the river itself. He referred to himself as Captain Adams, and set about joining the Powell expedition by route of orders he claimed to have from the Secretary of War. When Powell rejoins the party, he looks at the papers presented by Adams and sends him on his way.

On May 24, 1869, the four boats launch. There is no word from the party for many days, and what is reported is of them is untrue. The Powell expedition sends letters to family and supporters in July, explaining they are 160 miles down the Green River, near modern day Ouray Colorado, and all were safe and alive. By the time the men reach the Flaming Gorge, they are becoming better experienced at navigating the waters, and respecting the river. They are becoming accustomed to the constant roar of the river.

The experience of the Red Canyon rapids is just a glimpse of what is ahead of them, and Powell is extremely cautious about the river ahead. They use a method of going around the falls and dangerous areas by carrying the boat and supplies. The discomfort of traveling down the river in exploration is outlined by the author as he describes the swift change from hot to cold, the continual dampness and the roar of the river. Campgrounds are sandy and the supplies and clothes are soaked. In the days that followed, another boat is almost lost and the cook sets part of the campground trees on fire. Afterwards they had some quiet water, and stopped at a creek that led to a place where the men could receive and post mail. Powell sent two men for the mail and followed hem a few days later with Hawkins and Goodman. Goodman did not return, as he was no longer interested in the expedition.

The men of the expedition have tremendous for Major Powell. Although Powell only has one arm, he climbed the cliffs as well as the others, and participated fully in the camp activities. On July 6, the men started the journey further into the unknown lands. By July 7, the men were in a deep canyon that swings in great bends. One afternoon Powell climbed up a rim to get a good look at what is ahead but became trapped and Bradley saved him by lowering his long underwear down to pull Powell up. On the 11th of July, Powell and the Emma Dean were swept downstream and Powell was thrown off the boat. Powell and three others were recovered, but two oars are lost and some supplies. The next day Bradley was almost killed in a similar battle with the rapids. The next canyon was the Gray Canyon and its rapids were just as merciless. After Gray Canyon, the expedition got a short relief as the river slowed down. Here, along the canyons and mesas they find many signs of Indians, and knowing the fate of Gunnison and his crew, did not linger long. The land became moon-like without vegetation and many colors of sand and rock. Finally, they encountered the long awaited junction of the Green with the Grand. So far, the expedition group had traveled 588 miles. The men camped, began making observations and measurements, and correcting the maps.

The author returned to the story of Captain Samuel Adams, the volunteer that Powell did not allow on the expedition. Adams had convinced a group of people to outfit him with four boats and provide him with ten men to explore the same area as Powell has embarked upon. Three of the boats capsized the first week and within ten days, many of the crew headed back to Breckenridge. Adams produced reports of unbelievable water speed, grains growing along the bank, and an easy trip. They continued their journey with decreasing supplies and frail boats. By August, the group was down to one boat. When that one boat also crashed, Adams built a raft but only two of his team decided to continue with him. The raft crashed as well and finally on August 13, the remaining group gave up on the trip. Nonetheless, Adams believed that he had conquered all but the last bit of the passage to the Pacific.

The author compares the ill-planned Adams expedition with the Powell trip. Adams took liberties with the truth, while Powell was meticulously collecting facts, making measurements, while being cautious and determined. The Powell party has been on the river for two months. The author reprints Powell's journal entry of July 19th, describing the difficulty of traversing the canyons just to see where the river might be taking them next. Powell's descriptions were detailed and picturesque, while remaining factual. The men continued on their journey, carrying the boats and supplies around cataract. Their provisions have diminished and the men were able to bring down two big horned sheep. Just as the men seemed beyond fatigue and physically drained, the river relented and gave them a comfortable stretch of twenty miles. As the men passed through Glen Canyon, the scenery changed and became soft and surreal. Powell had originally planned to spend ten months exploring the river, but a lack of provisions forced them to move on through the canyons at a quicker pace. The author described subsequent journeys of men who explore this stretch of the river and how treacherous the area is. As they continued, the boats began to need repair, the men were exhausted, and the weather was increasingly difficult. The author described the party's progress down the river, over the San Juans, and to the Little Colorado. Powell estimated that one canyon wall was over 3000 feet high. The author inserted another entry from Bradley's journal, telling of the hardships and the mood of them men.

The Colorado River became very swift and deep just below the Little Colorado and the men were forced to run rapids they would normally walk around, simply because there were no spaces on the canyon walls for them to maneuver the boats through portage. At night, they cannot even find a place to camp and they sleep fitfully on ledges. Many days passed with the boats in continual peril, and the men in the river more often than not. The boats were battered daily and oars were lost. The men seldom had a camp with fire and their food supply was severely diminished. Even Powell was tiring of the expedition and the men had only five days' rations left. On August 27, the expedition reached what appears to be an impossible canyon with rapids worse than they had ever seen. They studied it for several days but only found one route and they decide to go forward.Three men, the Howland brothers and Dunn, decided that they do not wish to continue with the expedition, choosing instead to walk out of the canyon and find the Mormon settlements. The men parted ways on good terms, and the men who were not going down the river took some of Powell's notes and letters from the men to their families. There were only two boats now and very little rations for the six men who remained on the expedition. The author describes in detail the heart-stopping moments on the river the men experienced as they traversed the rapids, especially in an area called Lava Cliff. Bradley's boat was almost lost and all the men and boats are badly beaten through the event. Yet they survived and the Lava Cliff nightmare turned out to be the last of the great trip through the Grand Canyon. On August 30, the men reach a Mormon man named Asa who had been assigned by Brigham Young to watch for the party. The Mormons were interested in Powell's group for the information they could provide as they expanded their colonies in the West.

Time had come for the men to disband and Powell divided what money was left between them. Bradley and Sumner took one boat to Yuma, and Hawkins and Hall followed the Colorado's entire length to the sea. Major Powell and his brother Walter

headed to St. George, Utah. The Powells inquired along the way for news of the three men who had left the expedition and found to their dismay that the men were killed by Indians shortly after climbing out of the canyon. Upon returning to Illinois, the brothers were hailed as heroes and the success was credited correctly to the vision and caution of Major Powell's leadership. Soon afterwards, the Congress allocated $10,000 for him to continue his explorations.

Samuel Adams entered the story again, claiming that he did all that Powell did and more, and did it first. As Powell continued his work towards opening up the West for exploration and mapping, Samuel Adams faded into history as almost comic relief. For the next decade, Powell committed himself to government science and public service, with a concentration on the unopened West and how the country will use it.

The author has entitled the analytical section The Threshold, and the contents of the section reveal several interpretations of that title. In 1868, Powell was on the threshold of his first expedition into the Grand Canyon and also on the threshold of his career of civil service for America. America herself was on the threshold of entering a vast new territory, unmapped and unexplored that stretched out to reach the Pacific Ocean. The mindset of the American public was on a threshold as well, full of myths and romantic beliefs about a land that was completely unlike the East Coast and Midwest, from which the settlers will embark. This section introduced the major characters of Powell's life, including his wife, his competitors, and his collaborators. The land that shaped Powel's devotion and passion was described in detail through the trip down the Grand Canyon, and the character of Powell himself was shown through his determination, fairness, and undaunting courage.

Powell seemed an unlikely hero for any story, as his personality was unassuming and he displayed no grand ambition or goals. Powell approached life and adventure with great curiousity, a clear scientific methodology, and with an eye to the future use of the lands he surveyed. The author chose to focus not on Powell's life but his career and there was much to be learned from the work done by Powell.

The author listed a few notable characters surrounding Powell but it was clear that the focus will be on the man himself and the land he spent his life mapping and protecting. Although Stegner states that he is not interested in the man's personality, it would be difficult to tell the story of Powell's career without including the man's steely determination, cleverness, and vision.

Part Two

Part Two Summary and Analysis

There was a mindset of the policy makers in the years immediately following the Civil War concerning how a centralized government full of institutions would be used to run the now unified country. Many of these new government organizations would play a part in the expansion of the United States westward. Washington D.C. was fast becoming one of the greatest scientific centers of the world through the formations of National Park Service, the Weather Bureau, and the establishment of the Smithsonian Institute. Significant scientific theories regarding geology and watersheds are arising at the same time, encouraging the new government to begin systematically mapping and exploring the country of the West.

Powell divided the mountain West into three sections that he called Provinces. They were the Park Province, Plateau Province, and the Great Basin Province. His primary interest was in the Plateau Province, most of which lies in present day Utah, and comprises the most uninhabitable portion of the mountain West. The author lists what is known about human history in that area, and acknowledges that much information is missing or incomplete. Exploration up to and including Powell's expedition was sparse and revealed no promise of areas of settlement or of any mineral wealth such as gold or silver to be mined.

The expedition and field work could not begin until the summer of 1871. Powell decided that the key to survival is not to carry all supplies for the entire trip with them from the beginning, but to arrange for supply drops along the way. Powell was also concerned about the Indians, and wanted to ensure his party does not meet the fate of the men who left his original party. To ensure safety, Powell contacted the Utes and coordinated with the Mormons for their background information. Powell joined up with Jacob Hamblin, a man known by the Indians as a Mormon peacemaker, and the two men set out to talk to the tribes that have Powell the most concerned. This time with the Indians increased Powell's interest in ethnology and he makes plans to come back with a photographer and spend more time studying the Indians that he finds there. Powell used the opportunity to travel with Hamblin to the towns of the Hopi Indians and he became even more intrigued.

The second expedition into the canyon brought back far more scientific and usable data than the first. Powell was intrigued by geological formations and the study of Indians and delegated many responsibilities to other members of the party. Powell decided to leave the river earlier than previously, possibly because of the rough waters he knew that lay ahead. In the five years after the Powell expedition, Powell turned his attention from geology to ethnology, Indian and land policy. Powell turned over much of his work through the years to two assistants. They were Grove Karl Gilbert and Capt Clarence E. Dutton.

Gilbert appeared to have been the ideal man for the job of sorting out the notes and maps from the two expeditions. Gilbert worked on the geological history of the area, the drainage, and climate. He applied the laws that Powell theorized to exist for this area. Gilbert became Powell's closest friend and assistant and was the first official biographer of Powell's life. Dutton was a much better writer than Gilbert and is considered America's first literary tourist.

The author compares Dutton's writings about the Grand Canyon with those of Muir and Yellowstone, crediting Dutton with forcing America to see the Grand Canyon for all that it offered, and to turn the country's eyes from constant westward expansion to an attitude of appreciation of the beauty of the stark land. Between Lewis and Clark, Powell's Expedition, the Civil War, the Gold strike and various expeditions and expansions westward, all essentially laden with facts, a curious thing happened to the American perception of this region. Public opinion became fascinated with the legend and lore of the West, and their perception was tainted by this rather than the scientific facts, and that continues even today. As a result, Powell spent a considerable amount of time correcting these romantic notions when they began to interfere with land and Indian policy for the government. When choosing artists to paint and accurately portray the West for use in his distribution of factual information about the region, Powell chose Thomas Moran and William Henry Holmes.

Each creek, mountain range, and area were given names, either by the Indians, or the Spanish, or the white men who followed and mapped it. In the beginning were the Indian names, then Spanish, then Mormon. Each band of explorers left their own names. Powell refused to add his own name to any of the land he surveyed, but quickly named buttes and plateaus after those men who accompanied him on his expeditions. The author goes on to list each place so named, and remarks that many of the names were from people in Illinois, where Powell was from and the landscape of Utah became dotted with these. Many of Powell's names for the gorges and canyons were more descriptive than as a means to honor someone.

The author slows the pace down considerably in this section to give the reader basic information about the land Powell spent his life mapping and protecting. Popular concepts of the time are covered, especially the myth that the clever settler will turn even arid land into a bountiful farm. It becomes obvious that Powell was a visionary on many levels, but unfortunately was ahead of his time. Powell is undaunted by any delays or opponents, and sets about to find the best personnel for every job, the best method for approaching the problems, and the best solutions for the greater good of the people.

This section also notes the beginning of Powell's love of the American Indians and their culture. This fascination with the origins of the Indian people, their languages and their history will occupy Powell for the rest of his life, and his contributions to ethnology will be among his own prized accomplishments. In Powell's typical fashion, he divides the culture of the Indians into sections, and then divides up the progress of civilization. For a man who graduated from the Poor Man's University, getting knowledge from whatever

source he could find, Powell's approach to science, government, and business was remarkable.

Part Three

Part Three Summary and Analysis

There were various expeditions being funded by official entities in the 1870's. Part of Powell's efforts were to obtain funding for his own trips and department, but also to bring some order and organization to the process. Powell was an expert organizer but had to spend much of his time trying to influence the members of Congress, which was a slow process. As a result, Powell became very adept at manipulating the decision-makers into following the grand strategy he had put together for surveying and managing the dryland area of the Grand Canyon. Powell was an unlikely soldier in the war for public responsibility, having no family funds or well known organization to support him, only the strength of his own resolve. Powell began his campaign by enlisting the help of well known scientific men, and by writing letters and meeting with the decision makers. Powell turned his well organized mind to the task of making government science more orderly. Many projects begun by private or semi-governmental entities such as the Smithsonian had outgrown their initial mission and needed a place with the government. America's West was expanding, the different regions needed regulations, water use, surveying, and so much more, but there was no methodology in place for these procedures to happen.

Powell was alarmed at the Desert Land Act, passed in 1877, which seemed to benefit developers more than the land itself. Powell submitted a report to the Secretary of the Interior, Carl Schurz, proposing a revolutionary new system of handling the West, while repudiating the traditional myths of the current beliefs of the area in question. It was obvious to Powell that some order must be brought to bear over this land before it is denuded by developers, and fought over by different factions, all to the detriment of the land itself and the future it holds for America. Powell compiled a blueprint to remake the society and use of the land beyond the 100th Meridian. Powell sorted through the Homestead Act, the Timber Culture Act, Desert Land Act, Timer and Stone Act, and the Pre-emption Act, plus a number of grants, existing claims, and myths to present something that would work. A staggering two-thirds of the pioneers who came to the land beyond the 100th Meridian to become farmers failed and returned to their cities of the East. The Homestead Act did not return that land back to the public domain, but gave the land to the banks who had loans against it, thus contributing to the monopolization of the land; each of these Acts adopted by Congress seemed, to Powell, to do more harm than good.

Powell had no misconceptions about the arid land of Utah, Nevada, or Arizona because he had traversed the land, surveyed it, and knew what it held. With small farmers in mind, Powell assigned Thompson, Dutton and Gilbert to determine how much land in Utah was potentially irrigable, and they arrived at a figure of 3%. Powell proposed changing the rectangular grids of surveys to those that shaped according to the water access, thus allowing each homesteader water rights. To prevent any one entity or person from controlling all the water, Powell proposed water districts and pasturage

districts to spread the control to all involved parties. As soon as the Academy's recommendations are made, battle lines are drawn, with the opposition rising stiffly from the ranks of land barons, developers and those who had planned to use the confusion of Acts and grants to their advantage.

The original idea of the Academy's recommendations suffered badly through Congress, but the Western surveys were placed under one director. Hayden wanted the job, but Clarence King was the one chosen, backed by Powell. Powell became the Director of the Bureau of Ethnology, an adjunct to the Smithsonian, and as the years passed, more of his proposals became law. Powell emerges from these battles as a well respected scientist, head of a Bureau of the Smithsonian, and a very powerful man in political circles.

In this section, the true battles for the western land begin. Powell was alarmed about legislation which is contradictory and harmful for the land use of the West and to the unwitting settlers. Powell's recommendations for irrigation districts is radical yet practical, and for the first part of his government service, he wins battles for funding and for legislation. There is significant foreshadowing in this section about the future of the West, especially as seen from the view of the land and cattle barons, and those politicians who seek power.

Powell was originally an amateur scientist and explorer, but his talent for understanding legislation, finding support and funding for his projects, and maneuvering through the halls of government are just as keen. As he wended his way through politicians and legislation, Powell gained considerable power. It was fortunate for the American citizens that Powell was a man who sought only the best for the country, its people and its land, and never used his power for anything except the progression of his vision of fair land and water use.

This section also returns to the persistent myths of the American public regarding land west of the 100th meridian. Even when presented with the facts from scientists and explorers that the land was not able to support settlers on the same large scale as the midwest and the east coast of America had, the myths continued and grew. Even the politicians who lived and represented the states Powell considered arid vehemently denied the truth.

Part Four

Part Four Summary and Analysis

Clarence King has a charasmatic personality and was a well respected scientist. Yet even this formidible character was daunted by the enormous task of his new position. King's personal interests did not lie with public service and he spent little time on his government responsibilities, pursuing women and wealth instead. When King finally officially left his post, he named Powell as his replacement. Powell then assumes joint directorship of the Bureau of Ethnology and the Bureau of Geology, with over a decade of experience in the halls of Congress and the back rooms of politics. Powell was now at the core of American science.

The author presented the system Powell used to divide the Science of Man into five smaller sciences. Powell drew upon the work of Lewis Morgan in defining the myths of the American Indian tribes, and recognized the progress of civilization among these myths. The author notes that Powell's theory of civilization's measurements are a direct result of the predominant view of Americans at that time in history, where democracy is considered the ultimate goal. Powell's work on systemizing the information about American tribes was a chore he worked on with determination until the end of his life. He grouped the tribes by language, and also set about to find out the names of all the tribes and a system for keeping that clear. Although many projects were begun and dealt with for over twenty years by loyal Powell subordinates, few were completely finished and most continue to this day, with the important groundwork laid during Powell's time.

Powell's ability to manipulate the government into providing his bureaus with the necessary funding and authority was considerable His overwhelming need to organize everything he touched worked greatly to benefit the emerging American sciences, and he continually brought brilliant new personnel into the civil service.

The section began with the record of Major Powell answering questions before the Joint Committee of Congress in December 1885 regarding the lack of a map of the United States. Powell recognized early on that the United States had no official record that was useful to its government. By the time Powell retired, one fifth of the United States had been surveyed and mapped. Again, a project Powell had begun, mapping of the USA, was begun but took far longer to complete than had been anticipated. Nevertheless, this project was vital to the management of the nation's land, and the information provided has far outweighed the price in man hours and expenditures to accomplish it.

Politics played a part in government science as it does in every branch of government, with a large amount of effort by the administrators spent rebuking rumors and preventing bad press. Powell generated enemies because his policies changed the plans of those who would use the nation's resources for their own personal benefit. His most dangerous enemies were located in the West, where his decisions and scientific

facts did the most damage to land barons, politicians seeking power, and scientists whose findings were dismissed. As Powell grew in power, the number of his enemies grew as well. When brought before a Joint Commission to explain himself, his methods and his funding, Powell remained unflappable, calm and effective. Some of his enemies tried to turn his staff against him, but each of the staff members informed Powell of the attempts and the ploy did not work.

The author brings to the reader's attention that even though America was already a century old at the time of Powell's administration, there was no defining map of the country. Powell knew these maps were critical, even basic, to the progress of the country, and the authorization for these maps became the focus of all his attention. Powell became a powerful man, working behind the scenes to create the best environment for people and for the land in the West., but he was attracting the notice of men who will lie and defame him to stop his progress.

It is important to note that as Powell conducted his bureaus and manages his staff, he engendered strong loyal relationships with those who know him and work with him. Powell had an unerrring ability to choose personnel who were perfect for the projects assigned, and who embraced the concepts and then applied their own abilities and slant to the job.

Gilbert and Dutton were lifelong friends of Powell, with Gilbert even doing a biography on him. Each man became famous in his own right, and leave a legacy of their own making, based upon the tasks assigned by Powell.

The loyalty of Powell's staff spoke highly of the character of this man.

Part Five

Part Five Summary and Analysis

The author discusses three Acts of God that made the US government reevaluate their land laws. First there was a horrendous winter of 1868 in the West, resulting in a 30-50% drop in the number of cattle on the land. Secondly, there was a drought in wheat country that lasted over a decade. The third Act was the Johnston flood, reminding man that he was not in control of the weather. After these disasters, Congress was ready to repeal some of the previous administration's land acts, and called upon the Department of the Interior to provide a survey of irrigable lands. Powell jumped upon this opportunity to enact his plan of irrigation districts, which would take about seven years and 5.5 million dollars to accomplish. Through various maneuvers through government, the Irrigation Survey was ordered and begun.

Senator Bill Stewart of Nevada was a strong man who was aggressive and possessed tremendous political savvy. He was set on ensuring the development of the West on his terms, and was in a hurry to get the Irrigation Survey done quickly. Powell was in no such hurry; he saw the job as a threefold process of completing the topographical maps, surveying reservoir sites, and drainage, and an engineering survey regarding headworks and canals. Powell took the Irrigation Survey beyond the actual survey to create a sweeping policy for the management of irrigable lands, and placing those lands under the control of the federal government, safe from the hands of land barons. His justification for this was that it was the only fair way to deal with the arid lands of the West. Powell sends his surveyors out to serve the common interest and to ignore the protests and previous rights claims of the locals. Protests became commonplace, but the largest contention was over damming the Rio Grande. The Irrigation Survey created numerous conflicts, claims, rebellions, disputes and protests wherever it began to do its work. The controversies would take years to settle through the courts, and water laws took on the same complications as land laws had before.

Senator Stewart invited Powell to accompany him on a review of the states of the West, and to speak to them about irrigation. Powell used these opportunities to plant the seeds of water management in the minds of these new states, even suggesting that county lines be drawn with the water basins in mind. However, none of these states listened, and only the review of Powell's speeches in modern times show how visionary he was in his suggestions. The one result of the Irrigation Committee trip was that it brought to light the dislike between Powell and Stewart. Stewart was uncomfortable with Powell's intelligence and angry that Powell was unafraid to move at his own pace, despite threats. However, despite the actions of Stewart and other politicians to curtail Powell's activities for the West, a series of events occurred to move Powell into an even more powerful position as far as land development and public domain definitions. By 1890, according to the author, Powell was the most powerful man in the United States where the development of the West was concerned.

Powell set out his long range plan, utilizing facts in place of the popular myths concerning the feasibility of the land, and using the sources of water as his guiding topographical feature. Powell organized the western states into hydrographic basins and created systems for their use.

Stewart continued to hammer away at Powell, causing Powell to spend a lot of his time and efforts defending his plan. Professor Cope from the University of Pennsylvania brings his longtime feud with Powell to a head with charges of incompetence against the National Academy of Sciences and the Geological Survey, primarily naming Professor Marsh. Although Powell had every right to be indignant and angry about the accusations, he used his opportunity of response to provide a measured and practical statement which deflated most of the sails of the attack. The author includes Powell's response in this section. Professor Marsh gave in to his anger and issued a furious response. Cope is unable to put up more than a feeble resistance to the attacks from Powell and the story died.

The damage done by Cope did not appear completely for Powell until he began appearing before the House Appropriations Committee the next year. Senator Stewart from Nevada and Moody from South Dakota attacked full force, questioning everything Powell was proposing, even maps of the western part of the United States. Moody and Stewart continued by trying to move the Irrigation Survey to the Department of Agriculture, but failed. The basic contention was that the states declared arid and unable to support massive settlement according to Powell, were the states these Senators represented, and less settlement took away their power. The next Appropriations Committee questioned his plans for irrigation districts because it meant more government interference, affecting states' rights. Powell's response is that it would be more criminal to go on as they were, allowing people to settle where there is no possibility to survive. Powell responds to the remarks of the Senator with careful and measured statements, and his facts support him against the Senator's sometimes ignorant questions.

This time, however, good sense did not rule and misguided public opinion did. Powell's General Plan was rejected and Powell suffered the major defeat of his life. He remained the High Priest of Science but did not accomplish the project dearest to his heart. Stewart and his forces continued their attacks, this time changing the funding for his bureaus and specifying what the funds were used for. Stewart was soon joined by others who had suffered some real or imagined slight by the productivity and plans of Powell, and his funding decreased considerably over the next few years. By 1892 the General Plan was defeated completely. In 1893, when Powell addresses the International Irrigation Congress, he is dismayed to find that the old myth of the Great Garden of the West had resurfaced and his presentation of the facts do not change the minds of the delegates.

Powell resigns from the US Geological Survey in May of 1894 and retreats to the Bureau of American Ethnology. The author summarizes the work done by Powell and his carefully selected co-workers over the years, and states the style of organization created by Powell was used again and again in subsequent science departments of the

government. Now Powell could devote himself to the Science of Man, and he began the work without any cynicism or bitterness from his bouts with his political enemies. The author goes into detail concerning Powell's system of attacking the volume of experience, notes, theories, and thoughts he had accumulated over his lifetime in order to spend the last five years of life on the project of the history of the American Indians.

Analysis: This section covers the last years of Powell's government service, and how repeated attacks from Stewart and Cope caused Powell to withdraw somewhat and resign from the US Geological Survey. It is important to note that even with the attacks, the constant testifying before congressional committees, and the gaps in funding, Powell found ways to get work done. He worked within the system to collaborate with other bureaus, and create new ones. He found funding and support behind the scenes. He used every opportunity to explain his vision to the public even if it was in response to congressional inquires designed to cause him trouble. Powell's powers of collaboration, organization and calmness in the face of opponents served him well in his government service.

Part Six

Part Six Summary and Analysis

This section begins with a review of the work begun by Powell, brought forward to the early 1950's of this country, when this book was published. There were a number of complicated water reclamation, flood control and water management projects underway, all inspired by the General Plan of the Powell administration.

Powell's visionary ideas may have prevented the dust storms of the 1930's, through better land management and better access to the water rights. It appears that over the years, almost every aspect of Powell's ideas was adopted and stood the test of time. The overall spirit of Powell's ideas of cooperation between settlers turned out to be the wisest land and water management propositions for the arid lands of the West. The author bemoans the one obstacle to further enacting Powell's ideas, that of inter-departmental bickering of government agencies. The role of the Army Corps of Engineers in land and water management is discussed. Powell's overarching vision of the "greatest good for the greatest number for the longest time" is discussed in detail as it exists in present day America. The author speculates on how Powell would feel about such projects as the Taylor Grazing District Lands and the Missouri Valley development.

The author lists more of the people who followed in Powell's footsteps, and took his ides to fruition. Powell is compared to a force of nature, like a bullet shot from a gun. Unlike a bullet losing trajectory, however, the impetus of his actions have remained straight and true. Powell died on September 23, 1902, in Haven, Maine. The author's intent was to tell the story of the man's career, not as a biography, but through his work for the country. The author ends the book with the comment that Powell was a man whose ideas were ahead of his time.

Analysis: Powell was an amateur scientist with an explorer's heart who defied tradition and left a legacy of civil service and straight thinking regarding the western United States. The author's introduction to the book lists three points he wanted to make, and the novel covers all three comprehensively.

Powell set the standard for the organization of government bureaus, launching of scientific projects, behavior of government officials and civil servants, organization and expectations of scientific and exploratory expeditions, and especially the commitment to the greater good above personal gain. Powell was a common man with a non-traditional education, no connection to fame from ancestors, and no grand ambition; yet his work made a profound mark upon the future of the expansion of the western United States. His vision was not fully accepted during his lifetime, but his determination and groundwork lasted through the decades and is finally being recognized as the only practical solution for the problems of arid lands. He was not a man to make grandiose unsupported statements, designed to deliver what the public wanted to hear. He was a man who found the facts and stuck by them, planned out projects using those facts, and

proposed legislation that would provide the use of those facts for the common American.

Characters

Major John Wesley Powell

John Wesley Powell is the main character in this book as it is his career of public service to the government of the United States that Stegner has chosen to write about. Powell is a simple man whose work ethic and pursuit of knowledge as an amateur scientist and explorer contributed to the expansion and development of the American West, specifically, the Grand Canyon area.

This book coves the career of Major Powell, beginning with his early attempts to become a scientist, although he did not have the funds to participate in the traditional university education. Powell learned where he could, and applied his ordered methods and pracitcal routines to every job and expedition he undertook. Beginning as an explorer with limited funds, he continually found ways to meet the appropriate people for funding and publicity, continued on a deterimined path, began huge projects with his systematic mind, and recruited the most qualified amateurs along the way to carry on his work.

Powell developed good contacts in the government, and often put his personal concerns aside for the good of the nation. Beginning with work for the Smithsonian and the Bureau of Ethnology, Powell worked his way through the government science bureaus and departments, leaving a legacy of superlative planning, visionary tactics, and the policy of putting the greater good of the nation ahead of politics and personal gain.

Grove Karl Gilbert

G. K. Gilbert was a geologist, originally on Wheeler's surveys but then moved over to work with John Wesley Powell. Gilbert was in charge of interpreting and expanding upon the surveys of the Powell expeditions, and he became Powell's main assistant and friend. Gilbert was well liked within the scientific and government community, and spent his life in public service. Gilbert's association with Powell allowed him to delve into the scientific realm as long as he liked, with the freedom to pursue any line that interested him. Gilbert served as the executor of Powell's will, and was his first biographer.

Gilbert took Powell's ideas and discoveries and made them workable. He took over when Powell was beset by political problems and ensured that the critical work of the bureaus cotinued unabated.

Walter Powell

Walter is John Powell's brother and was a major part of the original expedition through the Grand Canyon. The author implies that Walter had some difficulties in relating to

other people and although John gave Walter considerable responsibilities for the first mission, he does not mention Walter after that.

Ferdinand V. Hayden

Hayden would be considered as Powell's rival for the funding and attention of the government in the field of geology and exploration of the West. Hayden was in the West before Powell, starting some 10-15 years before, Hayden and Powell did not always agree on the appropriate use of the land or its development.

Emma Dean Powell

Emma Dean Powell is the wife of John Wesley Powell and although she does not receive much coverage in this novel, her support of her husband in his wide ranging interests is strongly implied throughout its pages. She accompanied him on some of his early expeditions, and staunchly supported him whenever his motives were questioned. One of the boats on the Grand Canyon expedition was named after her.

Captain Clarence E Dutton

Dutton is described by the author to be like Gilbert, an extension of Powell, taking on the projects Powell laid the foundation for, and building it forward using his own personality and traits. Dutton continued his career with Powell and is remembered for a substantial contribution to the West.

Senator Stewart

Senator Stewart from Nevada originally was on the side of Powell's recommendations for determining land use for his state of Nevada. However, when the Powell decisions began to affect Stewart's own personal finances and power, Stewart became one of the strongest opponents to Powell's efforts. Through continued attacks and accusations, causing congressional hearings that took Powell away from his planned work, Stewart eventually wore down Powell's Great Plan.

Captain Samuel Adams

Samuel Adams was an amateur explorer and scientist during Powell's time but did not adhere to the necessity of factual reporting as well as Major Powell. Adams proclaimed himself a member of Powell's expedition but was put off the boat. Adams managed to use his myths to form his own expedition which did not fare well either, and spent most of his life trying to get the government to pay him for what he had not accomplished. Adams is presented as a foil to the hardworking Powell in this book.

Clarence King

Clarence King began with all the opportunities Powell lacked such as a Yale education, great contacts, eastern-born, and plenty of money. Yet his character was not as strong and he stepped off the path of honest civil service later in life.

Thomas Moran

Thomas Moran was a landscape painter, assigned by Powell to create pictures to be used in pamphets and booklets concerning the geological work by the government. Moran painted beautiful pictures but sometimes sacrificed facts in order to make a more attractive painting.

Jack Sumner

Jack Sumner was a mountain man who was wise in the ways of the West and a valuable member of the original expedition.

Objects/Places

Grand Canyon

The Grand Canyon is so named because the Colorado River has over time cut through an expansive and very scenic canyon for many miles in the Arizona desert. The Grand Canyon plays a critical role in this book as the object of Powell's curiousity, and as the expedition that launched his long and distinguished career in the American government. The land and water use principals forwarded by Powell for this area are in use today.

Science of Man

This is a term used by the author to differentiate between the interests of Powell that included the sciences of humans, languages, culture, etc., and not sciences of the earth like geology.

Geology

This is the study of the earth's surface. Geology and geography were the center of Powell's work as he planned his expedition down the Colorado River.

Smithsonian Institution

The Smithsonian is a unique branch of the government that played a major role in funding explorers in the mid-1800's, and providing a forum for various branches of American's scientific community to get their start.

Topographical Maps

These maps were considered vital to Powell as he began his land and water use policies. They are maps that denote the land in specific detail, showing the streams, mountains, hills, and altitude on the page.

US Geological Survey

This branch of the government had the monumental task of discovering what was included in the borders of the United States, and how to measure it.

Irrigation Survey

The original plan for the irrigation survey was devised by Powell as a means to distribute critical water to the homesteaders of the West, especially in the regions he considered arid. The survey was supposed to discover the source of water, determine the watershed, and give vital information to future settlers.

100th Meridian

The United States, as with all the globe, is cut through with meridians or imaginary lines of demarcation to aid in mapping. The 100th Meridian is used by the author as a line of demarcation for Powell's time, between the civilized east coast and the wide open and uncharted Western USA.

Arid Land

Contrary to the myths of the day, the entire Western United States was not a paradise waiting for settlers. There were vast regions unusable for mining, agriculture, homesteading, or occupation of any kind by humans. Also, some land that appeared to be habitable had a history of long draughts and inaccessible water tables. Powell determined these areas to be Arid Regions, and this determination was hotly contested by land barons and those who wished to turn a profit regardless of the complications it caused to future settlers.

Mormons

The Mormon religion was prominent in the Western USA during Powell's initial expeditions and provided him with substantial and valuable information about the land. Also, their beliefs in communal property of water helped him form his irrigation policies many years later.

Themes

Leaving a Legacy

Stegner chose to write this book based upon a man's career rather than to write the traditional biographical novel. The subject of the book, John Wesley Powell, is more commonly known for being the first White man to successfully traverse the Colorado River through the Grand Canyon, but Powell used that expedition to launch a considerable career in government service. Stegner makes the point throughout the book that many Americans have contributed to their country in this manner, working tirelessly for their government, moving the country forward without fanfare, with the only reward being personal satisfaction for a job well done.

Without Powell's selfless contributions of his time, knowledge, and even money, the opening of the West would have taken a different route altogether. Land barons, speculators, and power hungry politicians saw the West as an opportunity to make tremendous increases in their own wealth and power bases. Powell's plans and systems made serious inroads into the dreams of these moguls, so they fought him at ever turn. Powell was determined to do the best for the greatest number of people, and never allowed politics, rivals, or his own personal welfare to interfere with these goals.

As a result of these continued assaults on his ideas and systems, Powell had to spend a great deal of his time defending his concepts before Congress. Powell faced his opponents squarely, providing facts to their myths, reality to their fantasies, and although sometimes he lost the battle, he eventually won the war, as his practices and systems and plans stood the test of time and became the standards in the West.

Stegner offers example after example of Powell and his collaborators sacrificing personal gain in order to serve their country and preserve its future. Going against popular opinion, debunking myths about the arid regions, and proposing legislation that faced tremendous obstacles in Congress, these civil servants did far more to preserve the west than most elected officials of their time.

The theme of an individual's contribution to the future of their chosen country, and spending their entire lives in pursuit of that common good, is prevalent in this novel. Stegner admired Powell for his dogged determination against all odds and this novel is a testament to Powell's legacy.

Seeking Knowledge

Obtaining a traditional four-year university education was a difficult goal to accomplish for the young person growing up in the Midwest United States immediately after the Civil War. The universities and colleges of the East Coast were well established and offered a fine course of studies. The ones outside of New England were new, poorly staffed, and inadequately funded.

A young person in this situation was also an important member of their family's farm or business and could not be spared for four years to be sent to a faraway city for education. Sons and daughters of the Midwest pioneers were forced to expand their knowledge in non-traditional ways.

Powell is a shining example of such a person. In each town that his family moved to, he sought out books to read, borrowing from neighbors. He attended whatever school was offered, sought out amateur scientists, hobbyists, and set out on his own field trips to gather specimens in botany, geology, and archaeology.

Stegner points out that Powell continued throughout his lifetime to surround himself with people who had that same thirst for expanding knowledge, adding to their store of information in any way possible. The theme is repeated with each description of the men who joined Powell as a member of his expeditions or of his staff; that those who take the initiative to continually add to their knowledge base are also the people who have a better insight as to accomplish longterm goals, and more likely to leave a legacy that will be of the most benefit to the country.

Value of Systems and Routines

American government was being reshaped and reformed in the years following the Civil War. The South was in severe recession, and as Washington DC endeavored to put the country back together, the most expedient method was to centralize everything in one place. All government science bureaus fell into this concept, but the logistics of managing each department and bureau was a daunting challenge. The Smithsonian Institute was being established at the same time, and many heated discussions were taking place about its role in the country.

Into this confusion and disarray came John Wesley Powell, who was a man who brought order to chaos with his consistent project planning, goals that could be measured, ideas that might take twenty years to accomplish, but were solid and practical. He launched projects by outlining their purpose clearly and distinctly, then found the perfect administrator to carry them out. Based on facts and well-thought out theories, these projects laid the foundations for the bureau that was designed to handle them, then branched out to form new bureaus.

Powell's methods were quickly adopted by other department officials who recognized a way out of the morass, Because of this one man's tireless dedication to government service, and his innate sense of how to get things done, the new centralized American government had a useful template from which to expand and grow for the coming age of progress.

Style

Perspective

Wallace Stegner writes about John Wesley Powell, but chose to focus on the career and work of the man rather than concentrate on the man's personality. Instead of the traditional biography that begins with the subject's birth and includes all significant events of life such as childhood, ancestry, marriage, and children, Stegner highlights only those particulars of Powell's life that have bearing on his legacy of government service.

Stegner's portrayal of Powell is based on facts and consistently backed through an extensive addendum of notes. Yet it is clear that Stegner admired his subject and there is an economy of words when he is required to describe the background of those who opposed Powell.

Stegner is known for the vast amount of research he undertakes when writing his fictional novels and it is likely he came upon the results of Powell's work when researching some of his other novels. Being a stickler for accuracy and facts, Stegner probably recognized a kindred soul in Powell.

Stegner's perspective in this book is one of a careful admirer who is bringing an unsung hero and his remarkable legacy to the attention of an American public.

Tone

Stegner maintains an even tone throughout the book, presenting fact after fact, copies of speeches, congressional records, historic accounts, and excerpts from journals to make his points about the career of Powell. The book was originally published in 1954, in a time when much of Powell's original ideas were finally being accepted as the practical solution to the problems of the West, and Stegner often compares concepts originally presented by Powell in the 1880's as being used in the 1950's. Ironically, if the concepts had been accepted in Powell's time, much of the irrigation problems and conflicts of the early 20th century could have been avoided.

Structure

The novel is 438 pages, long, including a note from the Author, Notes, Index, Photographs, maps, and an introduction. The work is divided into six sections that include The Threshold, The Plateau Province, Blueprint for a Dryland Democracy, The Revenue of New Discovery, The Opportunity, and The Inheritance.

The Threshold covers the introduction of Powell and what the author believes motivated the amateur scientist to tackle huge projects and to seek out funding and support from

the government to complete his plans. It covers the time before the first expedition, and the men who went with Powell. The first and second expeditions are covered in detail in this section.

In The Plateau Province, the first results become to come out of the expeditions and the mindset of the people in government as well as those of the scientists involved in measuring the vast expanses of land being discovered. Powell's incredible vision and style is exposed as the man begins tackling every aspect of the land he has opened, with methodology, sound practices, and the intuitive selection of his administrators.

In the Blueprint for a Dryland Democracy, the author goes further into the logistics of Powell's plans for addressing the critical issue of allowing homesteaders equal access to irrigation and water sources.

Revenue of New Discovery outlines how people stood to gain, either personally or as a country, from the expansion of the Western states.

The Opportunity analyzes how, through Powell's vision for the West, the American government could have bypassed many power struggles and conflicts in the ensuing years if everyone had followed the same concepts of doing the greater good for the greater number of people. However, as the section so clearly highlights, opportunistic power grabbers prevailed and delayed the enacting of Powell's plans for several years after he retired from government service.

The Inheritance summarizes the legacy left by Powell, and by the men he chose to administer his various projects. It is a stirring reminder to all who read the book that there are many unsung heroes in our government service, working tirelessly, not for glory but because they believe it is the right thing to do.

Quotes

"What infinite hives of population and laboratories of industry have been electrified and set in motion!" (Section I, The Threshold, pg. 2.)

"Acquring learning in the rural Midwest was llike an elaborate egg-hunt - but the rules were fair; there were always eggs if you hunted long and hard enough" (Section I, The Threshold, pg. 12.)

"In 1870 the day of the Indian as wild animal was by no means over" (Section I, The Threshold, pg. 131.)

"To approach a strange culture and a strange people without prejudice, suspicion, condescension, or fear is common enough among students now; it was not too common in 1870 , and it made his councils with the Shivwits an unqualified success" (Section I, The Threshold, pg. 131.)

"Losing one's right arm is a misfortune; to some it would be a disaster, to others an excuse. It affected Wes Powell's life about as much as a stone fallen into a swift stream affects the course of the river" (Section I, The Threshold, pg. 17.)

"Powell's letter to Schurz on May 22, 1877, had made it clear that he was prepared, if necessary, to step completely out of topography, geology, and natural histor y and devote himself to ethnology, to which both his inclinations and his opportunities had led him" (Section III, Blueprint for a Dryland Democracy, pg. 209.)

"From them he had also got a notion of how salutary cooperation could be as a way of life, how much less wasteful than competition unlimited, how much more susceptible to planning and intelligence, how much less destructive of human and natural resources" (Section III, Blueprint for a Dryland Democracy, pg. 227.)

"But who in fact undertook it was a one-armed little man with a bristly beard, a homemade education, and an intense concentration of purpose" (Section IV, The Revenue of New Discovery, pg. 249.)

"One of the principal purposes to which Powell called his assistant's attention was 'to guide the development of agriculture in the greatest practical area' and to prevent the hardship resulting from ill-considered settlement and the failure of homesteaders on family-sized farms" (Section V, The Opportunity , pg. 309.)

"The only thing that kept him from being impossibly busy was the very real efficiency of his bureaus and the high esprit of his collaborators" (Section V The Opportunity, pg. 320.)

"In practical terms, over a span of seventy-five years and within the dynamics of the expanding West, Powell's law of deflection could hardly have been better demonstrated" (Section VI, The Inheritance, pg. 365.)

"But from the river bluffs where we have symbolically planted, himm, looking over the West that was his province, he can perhaps contemplate the truly vortical, corkscrew path of human motion and with some confidence wait for the future to catch up with him" (Section VI, The Inheritance, pg. 367.)

Topics for Discussion

The recorded history of Powell's expedition down the Colorado and into the Grand Canyon was based upon the journals of the participants. How important are present day journals, and how do you think they will be used by future historians?

What do you think of Stegner's decision to make this novel a story of Powell's career rather than create a traditional biography?

Discuss Powell's direction to his assistants to find solutions that would do the greater good for the greater number of people.

Imagine yourself as a member of Powell's first expedition, facing unknown dangers, long periods of time away from your loved ones, and considerable deprivation of basic needs. What would you take with you to assist your survival?

How important was it to Powell's efforts that the paintings of Moran were scientifically accurate rather than aesthetically pleasing?

Stegner referred to Powell's education as the Poor Man's University. Discuss how people with limited access to traditional forms of higher education supplemented with borrowed books.

Discuss the scope of the US Geological Survey, including the responsibilities of naming all landmarks, establishing property lines, and deciding the future of land grants.

Discuss the forms of communication available to the explorers during the time of Powell's expeditions.

What form do modern day amateur scientists take? Discuss computer hobbyists, amateur weathermen, and birdwatchers and add to this list.