Brave Companions Study Guide

Brave Companions by David McCullough

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BOOKRAGS

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Plot Summary

Brave Companions is a volume of seventeen previously published articles and addresses about diverse people and events selected by historian David McCullough to inspire Americans to shake off their ambivalence towards and fight their ignorance of history, which has much to teach.

German-born naturalist, Alexander von Humboldt, travels through Spain's long-closed New World holdings, discovering and collecting new species, inspires many to study the natural sciences, including Louis Agassiz, but is remembered today only for discovering the Humboldt Current, which he insists he has merely described. Swiss-born Agassiz does seminal work on the Ice Age, comes to America to earn a fast dollar lecturing, and stays on to enliven Harvard University and encourage Americans to engage in science and learning. Having inspired Charles Darwin, Agassiz denounces his heresy, and loses his once-avid following. Harriet Beecher Stowe, a rebel against her father's Calvinism, has published a few pieces before writing *Uncle Tom's Cabin*, the book that sparks the Civil War. She writes steadily for another 30 years, but nothing rivals her first novel, which had been expected to fail but changed the nation. These are McCullough's three "Phenomena."

"The Real West" is seen through a young Theodore Roosevelt ranching in the Dakota Bad Lands to nurse his broken heart, interacting with the Marquis de Mores, out to earn a fortune, cutting the Chicago meat packers out of the equation and market beef directly to the East. Writer Roosevelt, who wants to preserve the Old West before it inevitably dies out, tips his hat to great Western illustrator/writer Frederick Remington, who does the same. Both write in comfort back home, sallying out to the West only for inspiration.

McCullough's "Pioneers" are the pen who hack through disease-infested jungles to build the Panama Railroad, creating a path for the later canal, and the men who brave "the bends" to sink the caissons on which the Brooklyn Bridge is built. John A. Roebling is the project's protomartyr, Washington Roebling his much-suffering (physically and emotionally) son and successor, who as an invalid hermit supervises the massive project through his thoroughly competent wife, Emily. The bridge engineers leave a rich legacy of detailed drawings uncovered 70 years after the project is successfully completed. The final pioneers, a few decades later, are the remarkable pioneer aviator/authors of the 1920s-mid 30s. Like Roosevelt and Remington, they realize their thrilling era is quickly passing and want it not to be utterly forgotten.

McCullough next portrays four "Figures in a Landscape," people he has interviewed or knows personally. Under-appreciated American author, Conrad Richter, is a subject who turns into a friend. Harry Caudill is a Kentucky activist fighting strip mining's rape of the Appalachians. Miriam Rothschild is an untrained but highly acclaimed English naturalist, heir to a fabled fortune, who lives in simplicity, publishes quirky books, and reintroduces wildflowers to the countryside. Finally, famous American photographer, David Plowden, takes his friend on a day trip through rural Illinois, commenting on his craft and the authenticity of heartland America.

Finally, McCullough offers four meditations on the legacies of American history, including a paean to the great and beloved city on the Potomac, a sweeping survey of the half-century 1936-86, a "Recommended Itinerary," physical and literary for 1986 graduates in Middlebury, VT, and an appreciation of the U.S. Congress originally delivered at its bicentennial celebration. A common thread through Part 5, "On We Go," is that Americans must get over their ambivalence towards and fight their ignorance of history, which has much to teach.

Part 1, Chapter 1

Part 1, Chapter 1 Summary and Analysis

Brave Companions is a volume of seventeen previously published articles and addresses about diverse people and events selected by historian David McCullough to inspire Americans to shake off their ambivalence towards and fight their ignorance of history, which has much to teach.

McCullough's first essay, "Journey to the Top of the World" portrays the life and career of the German-born naturalist, Alexander von Humboldt. In May 1804, at 34 and still unknown, Humboldt visits President Thomas Jefferson, a "friend of science," and astounds him with stories of South and Central America. Within a yea, Humboldt reigns as the high priest of 19th-century science, but today is largely forgotten, upstaged by Lewis and Clark. Born in Berlin in 1769 into wealth, Humboldt hooks up with Aime Bonpland, gains an audience with King Charles IV and as a result unprecedented freedom to explore Spain's New World colonies. They reach New Granada (Venezuela) in 1800, with a full array of scientific equipment and hopping enthusiasm, in three months collect 1,600 coastal specimens, including 500 new species, and then - ignorant of jungle survival - plunge into the interior, rowing 6,443 miles in 75 humid and exhausting days, examining, sketching, collecting, and classifying 12,000 samples. Humboldt exults at being free from society's distractions to become part of the harmony of nature. His wildly popular *Personal Narrative* inspires Charles Darwin and countless others.

Humboldt and Bonpland spend two years in Columbia, Ecuador, and Peru, recording data and for the first time linking vegetation to elevations. Humboldt's climbing of the active Pinchincha Volcano and almost reaching the peak of Mount Chimborazo is "incomprehensible" to later mountain climbers. Sailing to Mexico along the shores of Peru, Humboldt observes an icy, north-flowing Pacific current long known to sailors and fishermen, which ironically becomes his only lasting claim to fame. In Mexico, he produces the first accurate, astronomically based map, annotated with political, economic, and ethnological data. Humboldt is the first European to sense the scale and greatness of America's ancient civilizations (Incan and Mayan) and to take seriously their religious traditions. Humboldt and Bonpland visit Philadelphia en route to Washington and home to Bordeaux, bearing 6,000 previously unknown specimens in 42 boxes.

Humboldt spends the rest of his life and most of his fortune publishing books that make him known everywhere. His second-hand views on a canal route across Central America nearly land the Panama Canal in Nicaragua, so great is his prestige. He refutes the notion the Pacific and Atlantic oceans have different levels, and his views on the effect of deforestation in Venezuela earn him a place among the earliest ecologists. He originates the system of isothermal lines, lays the foundations for modern descriptive geography, and above all shows how little the 19th century knows about the diversity of

life on earth. Humboldt's advice is sought by future lights in many fields, most impressively the struggling young zoologist, Louis Agassiz, subject of the following essay, who praises Humboldt's gift for *ad hoc* teaching. Humboldt's final, masterly work, *Cosmos,* opens the grand harmonies in nature to nonscientific readers. It rivals *Uncle Tom's Cabin* (whose author is the subject of Chapter 3's sketch) in popularity and brings him veneration as the "world's greatest man, a new Aristotle who shows the possibilities of the human mind." Humboldt dies in 1859, at work on the sixth and final volume of *Cosmos.* Shortly before, he poses for a portrait, refusing to wear any of his decorations, but allowing Peale to include Chimborazo in the background.

Part 1, Chapter 2

Part 1, Chapter 2 Summary and Analysis

"The American Adventure of Louis Agassiz" turns to the career of Humboldt's grateful protygy, for whom he arranges his first professorship at Neuchwtel, and who becomes America's premier naturalist. Born in Switzerland and educated in medicine in Munich, Agassiz at 24 studies fossil fish, and then turns to the study of Alpine glaciers. At 33, he helps the world appreciated the Ice Age explains many natural phenomena in Europe. By 1846, mounting debt leads Agassiz to a U.S. lecture tour and to broaden his horizons. From Boston, he ranges up and down the Atlantic coast, impressing the cream of American science. He speaks "without notes and from a full brain," in hesitant English, chalk in hand to render superb illustrations of his subjects on a blackboard. In six months, he earns $6,000 (a modern equivalent of $60,000), and the timing of his appearance is perfect, for the U.S. is in the throes of an educational awakening, with lyceums, libraries, and normal schools cropping up everywhere. Agassiz finds Americas' outlook progressive like his own, and when a chair of natural history is created at Harvard to keep him in the U.S., Agassiz's visit becomes permanent.

Finding Harvard but "a respectable high school where they teach the dregs of education" with fewer than 400 elite students, cheerful, energetic, open, and opinionated Agassiz breaks all the traditions and thus brings a warm glow to a chilly room. Believing students must observe and compare rather than passively hear or read, Agassiz hands new students a long-dead, smelly specimen to look at without instruments in the his absence, for hours and days, until revelation hits. He downplays encyclopedic knowledge in favor of thorough understanding gained by independent investigation- looking at one's fish. Lectures in the two-term course vary little year-to-year, and no one doubts or criticizes anything "the master" says. Agassiz also collects specimens, leading summer expeditions, including one to Lake Superior in 1848, where he sees the singular geographic scale of the North American ice sheet. He returns to Harvard with specimens that vastly expand the university's pitiful collections and turns a bathhouse into a temporary museum.

When a stable burns nearby, Agassiz convinces the grieving owner of deceased racehorses to donate their skeletons. As Agassiz's fame spreads, people ship him items and his minions build the collection. Boston newspapers transcribe and publish his public lectures. An 1850 published account of the Lake Superior expedition draws a reviewer's note, "Agassiz belongs to that class of naturalists who see God in everything." Transcendentalists Emerson, Thoreau, Longfellow, and Holmes love him and grant him head of their table, and his stirring descriptions of how the Ice Age effects on New England's landscape helps renew interest among poets and painters.

Widowed, Agassiz marries Elizabeth Cabot Cary, 15 years his junior, and they become stars of the Cambridge social scene. Money problems remains, so she establishes a private school at home, which Agassiz keeps free of lifeless routine. In 1857, a day

before his 50th birthday, Agassiz publishes the first volume of a proposed ten-volume natural history of the U.S. Agassiz turns fund-raiser for the Museum of Comparative Zoology, moving the Massachusetts legislature and local businessmen to give over $170,000. Harvard donates the site, and in June 1859, the cornerstone is laid. The summer of 1859 also sees publication of Charles Darwin's *On the Origin of Species by Means of Natural Selection,* which Agassiz condemns as atheism. Longtime friend Gray denounces Agassiz's demagoguery, and they part ways. Agassiz has little use for formal religion but believes fervently in an immutable divine plan culminating in God's final purpose, mankind. Fossil records show God has used natural catastrophies to start afresh with new forms. Harvard stands behind Agassiz, and the new museum significantly faces the theological school. Aggasiz writes steadily for *Atlantic Monthly* and takes to the lecture circuit, more popular than ever.

People take comfort knowing "the prince of naturalists" stands up against Darwin's godless assault. McCullough observes later generations cannot comprehend this attitude, obviously writing before the resurgence of Christian fundamentalism in the 21st century. Some colleagues, however, question Agassiz's refusal to give the other side a fair hearing and, to prove his cataclysmic theory, Agassiz goes to Brazil to demonatrate the Southern Hemisphere has experienced an Ice Age like the Northern. He returns with 80,000 specimens and a proud eureka, which is skeptically received by peers, and a shadow falls over his brilliant career. He turns dictatorial and intollerant, and many bright students revolt or quit in despair. In 1869, Agassiz suffers a mental breakdown. In the last year of his life, Agassiz founds a summer scholl of science for teachers, and his epic *Contributions to the Natural History of the United States* ends prematurely, when he dies in 1873, an event eliciting heartfelt sorrow comparable to Lincoln's.

Agassiz's legacy is amazing in original research, in encouraging American culture to embrace science, and in his beloved Museum of Comparative Zoology - known simply as "the Agassiz" in Cambridge - still an institution of worldwide importance. His mistake about evolution can be considered as a byproduct of his tremendous popularity, making it impossible to back down on strongly-expressed positions. Agassiz feeds on audiences' energy, which diminishes him as a scientist but makes him an incomperable teacher. There is lasting significance in his admonitions to teach only what one knows well, to train pupils to observe, and to have the courage to say "I do not know" when evidence cannot be adduced. Like Humboldt, Agassiz takes pride in influencing the next generation, and the list of his proteges is long and distinguished. Above all, Agassiz is committed and engaged.

Part 1, Chapter 3

Part 1, Chapter 3 Summary and Analysis

"The Unexpected Mrs. Stowe" takes up the life and writings of Harriet Beecher Stowe, cheerful, shy, playful, and - contrary to her self-description - not at all plain. What is unexpected about her is she writes the abolitionist manifesto that starts the Civil War. "Hattie" is the seventh of nine children born to Lyman Beecher, a powerful, assertive, zestful preacher of hell and brimstone that leaves Hattie cold. She loves life away from the parsonage and dreams of Lord Byron. In 1832, the Beechers move to Cincinnati, where Hattie at 21 befriends the beautiful bride of a fat, forgetful, and fussy biblical scholar, linguist, and teacher, Calvin Ellis Stowe. Eliza dies and Hattie becomes Mrs. Stowe in 1836. She bears twins and then five more babies at regular intervals, and to improve her health, regularly escapes to call on relatives. When she comes home, exhausted Calvin takes the water cure, so for three years they largely live apart but correspond. In 1848, Harriet narrowly survives cholera and next year loses infant son Charley to it. She has published tracts and magazine articles when Calvin insists it is her fate to be "a literary woman" and sign herself euphoniously as Harriet Beecher Stowe. Calvin accepts a post in Brunswick, ME, and sends Harriet ahead. She stops to see relatives. These include her brother Henry, pastor of Plymouth Church, Brooklyn, NY, her sisters Mary and Isabella in Hartford, CT, and brother Edward, an anti-slavery militant, in Boston, MA. Calvin arrives before summer, and another baby is born. In the spring, Harriet pens *Uncle Tom's Cabin*, but insists, "God wrote it."

The subject has been with Harriet since childhood, in Beecher's preaching, in Lane Seminary, a hotbed of abolitionism, and in stories by her housekeeper Eliza Buck about lashings and the splitting up of slave families. When Congress passes the immoral Fugitive Slave Act, Harriet conducts research, corresponds with Frederick Douglass, but above all, writes from within about bondage and liberation. As critics later point out, she knows little about black slavery in the South, but this matters little. She writes Uncle Tom's death scene first, and continues working for a year. The powerful story begins serialization in the *National Era* in June 1851 and appears in book form in 1852. Within a week, 10,000 copies are sold, over 300,000 by year's end in the U.S. and 1.5 million in England. The South boils with indignation and hate mail so upsets Calvin he accepts a job at the Andover Seminary to escape. Traveling in Europe, Harriet reflects on the power of fictitious writing. When war comes, all says it is her war, and she puts aside Beecher pacifism to insist on an energetic effort to free the slaves. Receiving her privately in Washington, Lincoln is said to have called her "the little woman whom made this big war."

At a concert in the Boston Music Hall on the day the Emancipation Proclamation goes into effect, Harriet accepts a standing ovation. Victorian and sentimental, the book (quite different from the popular stage version) holds a strange power over readers. It drops abstract preachments and makes readers *feel* what slavery is about. The hero is black and race is taken seriously. Stowe sees all white Americans as guilty for the institution,

churchgoers in particular. She portrays Uncle Tom almost as a Christ figure, which makes tragic the transformation of his name into a term of derision for deferential blacks. Harriet has fugitive character George Harris ready to kill his tormenters and die rather than let his family return to slavery.

Harriet remains an industrious writer for 30-odd years after *Uncle Tom's Cabin*, averaging a book a year, plus essays, poems, and stories. An 1869 *Atlantic Monthly* article, "The True Story of Lady Byron's Life," raises almost as much furor as *Uncle Tom's Cabin.* Deadlines bother her, she is perennially short of money despite royalties, Calvin grows enormously fat, more distant, and less useful around the house, and Harriet finds fame trying. Son Henry drowns in 1857 and son Frederick, a Gettysburg veteran turns alcoholic, ships out, and is never heard from again. Famous brother Henry is dragged through court, headlines, and gossip for six months over an adulterous affair with a parishioner. Such matters aside, Harriet's life is pleasant. Liberated like all her siblings from her harsh Calvinist heritage, Harriet sees predestination as a repugnant, "glacial" doctrine, which, however, has served America so well at its founding it ought to be better practiced (by others). She experiments with spiritualism, becomes an Episcopalian, enjoys Europe, Florida, theater, dancing, and even a little claret. Invited to give readings on the lecture circuit and needing the money, Harriet, who has never spoken in public, hits the trail, becomes adept, and loves the life. She puts on no airs, remains plain, earnest, and whimsical, and makes new friends, including Mark Twain and Oliver Wendell Holmes. Harriet grows closer to Calvin, whom she calls her "Old Rabbi," after he grows and beard and dons a skullcap while absorbed in Semitic studies. His book on the history of the books of the Bible sells well, ending their financial worries. Calvin dies peacefully in 1886, while Harriet continues another decade, gradually slipping into gentle senility. Now and then in moments of lucidity, she mentions how *Uncle Tom's Cabin* had come to her in visions and been a surprise. Harriet dies Jul. 1, 1896.

Part 2, Chapter 4

Part 2, Chapter 4 Summary and Analysis

"Glory days in Medora" focuses narrowly on the time Theodore Roosevelt spent in the Dakota Bad Lands, assimilating to the life of the cowboy and helping to create the myth of the "real West." The illustrator Frederick Remington, discussed in the next chapter, makes an even larger contribution. The little town of Medora ought to be as celebrated as Dodge City or Tombstone, but history has passed it by, and it would be a ghost town today were it not the center of the Theodore Roosevelt National Park, protected from oil developers but filled with tourists in season. When winter comes, and everyone who does not have to be in Medora flees, the town is little changed from Roosevelt and Mores' time. Before writing this piece, McCullough stands on the overlooking bluff to admire the panorama and get get a feel for the place.

In 1883, the privileged Republican New York assemblyman spends a fortune to look the part of a cowboy and puts down $14,000 to buy 450 head of cattle to enter the nascent cattle boom. Having founded the town of Medora six months earlier, the Marquis de Mores, Roosevelt's exact age and a sharer of his passion for hunting and the outdoors - and nothing else - dominates the region and intends to cut out the Chicago middleman by building a meat packing plant where the herds graze, and ship the dressed meat to where demand is great, in the East, in refrigerator cars. He will use his fortune to change politics in his native France. Mores steps on many toes through ignorance of local unwritten customs, and when kills Riley Luffsey, is arrested and tried, but acquitted. Medora grows into one of the wildest cow towns in the West and the New York *Times* hails Mores' business sense. His beautiful and talented wife supplies the funds, backed by her banker father.

Roosevelt expands his own investment to 20% of his inheritance and with friends from his college days, Bill Sewall and Wilmot Dow, establishes his Elkhorn Ranch 30 miles upstream from Medora. Roosevelt is an average rider and poor roper, but works well with the cowboys he admires, asking no favors and never complaining. He suffers bouts of depression following his wife Alice's death in childbirth and his mother's passing in the same house on the same day, and, convinced his political career is over. and he will make his mark on the world as a writer, Roosevelt takes to the Bad Lands, which, he says, look like Poe sounds. Mores is again indicted and again gets off, but sees a conspiracy by the Chicago beef trust to ruin him and believes Roosevelt stands with them. Mores writes an ambiguously worded letter to Roosevelt that some interpret as a challenge to a duel. The tenor is wrong for a challenge, however, and there is no confrontation. Had there been a duel, Roosevelt would surely have been killed.

The winter of 1886/87 is the worst on record in the Great Plains and stock losses average 75%. Roosevelt returns to Elkhorn every other year for a while, but strictly to hunt, and seldom stays more than a week or two. His total investment is $82,500, and after he sells off his remaining Bad Lands holdings (his losses are $20,292.63) add to

this lost interest. The three-year adventure costs him some $70,000, about $700,000 in present-day money. His family believes that without this experience there would never have by the Rough Riders charging up San Juan Hill or Theodore Roosevelt's presidency. The Marquis returns to France and crusades against the Jews who have ruined him in America. He arms anti-Semitic thugs and dresses them in cowboy garb to parade through Paris. After the collapse of the French effort in Panama, Mores falls in with Ydouard Drummont and takes a leading part in the Dreyfus Affair before storming off to North Africa, where he duels with important Jewish officers and is murdered in 1896, trying to unite Muslims and French to a holy war against the Jews and English.

Note Roosevelt is tied backwards to the subject of Chapter 2, Louis Agassiz, through Harvard University, of which Roosevelt is an alumnus. He is linked forward to Chapter 6, dealing with the building of the Panama Canal by virtue of the lengthy project's falling under American control during his administration. Mores is also linked to Panama through the journalist who publicizes the French debacle on the isthmus. As he mentions in the Introduction, McCullough greatly enjoys following the links of history.

Part 2, Chapter 5

Part 2, Chapter 5 Summary and Analysis

"Remington" opens showing an aspiring young artist in Kansas City, having wasted half his $9,000 inheritance on sheep ranching and saloon owning and being abandoned by his wife of three months, taking heart from the sale of a canvas, buying a mare for $50 on a street corner, and riding off into the sunset. Man or horseback in the Old West becomes the formula for Frederick Sackrider Remington's coming success as a commercial artist. Born in Canton, NY, in 1861, son of a Union cavalry officer, Freddie shows artistic talent in military school, enrolls in Yale University's School of Fine Arts, but drops out when his father dies after three semesters, having picked up Yale mannerisms and the discipline of studying good pictures and drawing from nature. Remington's contention he is a self-taught painter thus is largely true. Failing to click in any of the odd jobs he tries and having his first proposal to Eva Caten turned down by her father, Remington briefly goes west to Montana Territory for the fun of it.

At 21, inheritance in hand, Remington heads to Kansas and more misadventures. Only Uncle William supports his artistic dream. Remington's success is sudden and extraordinary, the result of concentrated effort and boundless energy painting what he sees as he wanders through New Mexico and Arizona. He is discovered by magazines, reunites with Eva, and takes an apartment in Brooklyn. Remington illustrates articles by a young Theodore Roosevelt in *Century Illustrated Magazine,* and next year completes 70 drawings and sketches for *Harper's Weekly,* earning $8,000. He and Eva move to suburban New Rochelle, NY, in 1889, and by 1890, Remington is a full-blown celebrity. He works feverishly in pen and ink, oil, and watercolor, markedly improving his style. Mural-sized *A Dash for the Timber* shows a cavalry charge like 1886's *Signaling the Main Command,* but has none of its drab woodenness, and is exhibited by the National Academy of Design. It remains a masterpiece of American painting.

While some of Remington's commissions call for other subjects, the action of the Wild West is what editors and the public want, and Remington travels frequently to the West to gather material, and being told he paints what he knows and knows what he paints people believe they see in his work the authentic West. Remington encourages this by falsely claiming to have been a cowpuncher and Indian fighter. He finds the West physically and emotionally invigorating, but also knows "Cowboys are cash." He travels dressed as an Eastern dude. Eating and drinking with gusto, Remington expands to 250 pounds. The "hard-sided" men to whom he gravitates find him a fount of high spirits and tall tales. Indian-fighting soldiers are "my tribe," and homesteaders, sharecroppers, and small railroad townspeople that are changing the West are of no interest to him. His West is remorseless and antithetical to civilization.

Most Americans talk enthusiastically of the "taming" of the West, but Remington mourns the frontier's receding as a tragic loss, and his paintings are an attempt to record and celebrate something vanishing. Roosevelt and their mutual friend Owen Wister share

this outlook. Roosevelt considers Remington America's premier painter but praises even more highly his Western writings, by 1897 already amounting to some 60 articles. Wister, a wealthy, citified, finicky Easterner privately finds Remington's painting uneven, but praises him in print as a national treasure. Remington advises Wister to fill his stories with horses, blood, and profanity to capture the West. These three preservers of the Old West all work in comfortable Eastern surroundings. Of them, Remington is the most prolific and most passionate.

Remington's pleasures are simple. He is a warm friend, generous host, and faithful correspondent. He can dress as a dandy but is otherwise without pretense and is considered a true friend by many of the prominent figures of the day. He and Eva have (and want) no children. Remington' life is work, travel, and friends. In *Endion*, their New Rochelle house, he works first in the attic and later in the downstairs library, which he fills with Western paraphernalia. He usually works 9 AM until 5 PM, briskly and whistling annoyingly. Afterwards, he rides or walks (until he grows too heavy), dines, and talks have the night with guests in his studio. Twice he goes on assignment to Europe and North Africa. Summers, he heads home to the Adirondacks. In 1895, Remington's first book, *Pony Tracks,* is published, a collection of magazine pieces, and he begins experimenting with a new medium, "mud" (sculpting). He is certain, after completing his first bronze, *The Bronco Buster,* sculpture, not oil painting, will make him immortal. For all the exhilaration of work, Remington worries about his weight and drinking.

Remington abhors how the U.S. is going to hell. He breaks with his mother when she remarries and despises much of mankind. The rubbish of Europe are ruining "out traditions," he believes, and fills his writings with slurs and bigotry common in his day. He longs for "a real blood letting" war, a "big murdering" in Cuba - although the only combat he has ever seen is playing Yale football. William Randolph Hearst, owner of the New York *Journalyo* sends Remington and correspondent Richard Harding Davis to Cuba in 1897, but Remington comes home empty-handed and disappointed. When Davis sends a dispatch about the strip-searching of Clemencia Arango, Remington executes a dramatic rendition showing a pale naked woman overshadowed by three dark Spaniards. Seeing this in the *Journal,* Arango is mortified, for a female official had searched her. The fake scene, a great sensation, is one of Remington's few attempts at rendering the female form. When war comes to Cuba, Remington returns, but the squalid jungle terrain is not what he expects. He writes about the glories of war, producing some of the best accounts of the brief conflict. Memories of the dead and disfigures remain with him for a year. His *Charge of the Rough Riders at San Juan Hill* makes war look like a football game. He returns to "my war" in *Missing,* a canvas showing a captured cavalryman stoically accepting his fate at the hands of Indians.

Remington laments spreading himself too thin as the 20th century dawns. In 1905, having published more than 100 articles and two novels, he abandons writing. He is fed up with "progress" in science and technology, including President Roosevelt's Panama Canal. Photogravure printing allows his works to be reproduced in color, and Remington contracts with *Collier's* for six paintings a year for $6,000. He chooses his own subjects, retains rights to the paintings, and reaches more viewers than any artist ever has. Visiting the West, he finds it too has been spoiled. There are no cowboys anywhere. In

1905, he begins his most ambitious project, an enormous cowboy on horseback for Fairmont Park, Philadelphia. His painting style loosens and lightens. He concentrates more on color than line, paints pure landscapes for the first time, with no "story" involved, and ventures into nocturnal scenes. He yearns to be accepted as an artist rather than "just" an illustrator. In 1907-08, in two incidents, he consigns 91 canvases to the flames. Reaching 46, the age at which his father dies, Remington thinks a great deal about death, but continues to be filled with love of life and work, learning new techniques for using color. He craves new surroundings, and he and Eva build a new house in Ridgefield, CT.

Remington begins having stomach trouble, which he dismisses. The National Gallery in Washington, DC purchases his Western nocturne, Fired On. While visiting New York, Remington complains of sharper stomach pains, and they return to Ridgefield. Doctors perform an emergency appendectomy on his kitchen table, but give little hope of his surviving peritonitis. Remington passes a comfortable Christmas morning with Eva but, in the afternoon, falls into a coma, and dies Dec. 26, 1909, at age 48. McCullough does not speculate on how Remington might have developed as an artist had he lived to a ripe old age, but suggests he is moving away from his fixation on the lost past. McCullough begins his Introduction describing a meeting between President Theodore Roosevelt a portrait painter John Singer Sargent, and confesses his earliest ambition is to be an artist. This is clearly felt in the way he writes about Frederick Remington.

Part 3, Chapter 6

Part 3, Chapter 6 Summary and Analysis

"Steam Road to El Dorado" tells the story of the building (1850-55) of Panama Railroad, proof of man's capacity to do great things against impossible odds through skill, endurance, and perseverance. Begun before Europe or the Western U.S. have such technology and the Suez Canal, Union Pacific, and Brooklyn Bridge lying in the future, it is amazing that trails run 47.5 miles through remote rain forest. It is called the "first steam road to El Dorado," because the impetus for its building is getting East Coast gold seekers to the California fields. Mile-for-mile it is the costliest railway undertaken ($8 million) and for 14 years is the best paying line for investors. It is done without proper equipment, medicine, supplies, or even a good map. It still crosses between Colun to Panama City and riders experience the same jungle, but only a few miles at either end follow the original route, which lies at the bottom of Gatun Lake, created to facilitate creating the later Panama Canal. The original line is hurriedly and cheaply constructed, bypassing every obstruction possible (but having to bridge waterways 170 times). Before the railroad, the Isthmus of Panama is crossed as it has been since the Spanish conquest, rowing upriver by canoe, porting over the treacherous Cruces Train, and then canoeing down river, an unforgettable 4-6 day, journey for anyone who survives.

The idea for a railroad originates in New York in the late 1840s with three dissimilar individuals, none of them a railroad man. Henry Chauncey is a Wall Street financier. William Henry Aspinwald is a capitalist who has a government franchise to carry mail to California, forms steamship lines, and needs to remove the Isthmian roadblock. The third founder is John Lloyd Stephens, a diplomat, lawyer, raconteur, and world traveler who is named president. Among the founders, he alone ventures into the jungle, driving the project onward during the first critical, disheartening years, before dying of malaria on the job. These Americans are allowed by the Columbia government into its province of Panama because of the Bidlack Treaty, concluded in 1846 by an unauthorized U.S. chargy d'affairs to preempt France and Great Britain. It guarantees Columbian sovereignty over the isthmus, neutrality of passage, and exclusive U.S. rights to build and operate a railroad and/or canal. U.S. gunboats become fixtures in the offshore waters to and U.S. forces quell half a dozen "disturbances," including the great one in 1903 that McCullough laments is a separate and complex subject he cannot get into here.

The first stake marking the Atlantic terminus is driven into soggy ground in May 1850 on uninhabited Manzanillo Island. The engineers in charge are self-effacing Colonel George M. Totten, who stays with the project and serves as chief engineer of the line long after it is finished, and John Cresson Trautwine, who stays only for the surveying. Clearing by hand proceeds south from Manzanillo along the shore of Limun Bay, then up the Chagres River Valley into the mountains, where it finds the Rio Grande, which it follows to the Pacific. As the land barrier runs east to west, the railroad line runs north to

south, confusing countless travelers. The party finds a previously unknown gap just 275 feet above sea level at Culebra and discovers the Atlantic and Pacific have the same level, a fact earlier disputed, because the Atlantic side is placid, while the Pacific has 18-20-foot breakers. Recall from Chapter 1, explorer and writer Alexander von Humboldt has already come to this critical conclusion, which makes feasible a sea-level channel. Actual construction proceeds slowly, hampered by the climate, which rusts, rots, or infects everything and everyone.

The Gold Rush also makes recruiting and retaining workers difficult. Fourteen months into construction, with only seven miles completed, funds run out, work stops, Trautwine leaves, and the project might have died, had a tropical storm not forced two New York steamers to seek shelter in Limun Bay. Passengers demand transportation to the Chagres, and a string of flatcars is assembled to run them to Gatun, where they board canoes and continue. Soon a town is thrown up on Manzanillo Island, which Stephens christens Aspinwal, but Bogotb insists be called Colun. As the stub line grows profitable, Wall Street drops its objections. By the summer of 1852, tracks push halfway across the isthmus by a work force drawn from around the world. Malaria claims appalling numbers, followed by dysentery, sunstroke, cholera, and the dreaded yellow jack. How many die cannot be determined, because the company keeps haphazard records on whites, ignores the masses of nonwhites, downplays mortality, and wrongly claims those who live clean in Panama are as safe as in the Southern U.S. The high price paid for 47.5 miles of track is a grim foretaste of the losses 30 years later, when the French lose 20,000 trying to dig a canal. To dispose of so many corpses, the company pickles them, ships them to medical schools, and uses the funds to build a small hospital. The first timber bridge across the Chagres, built with enormous effort, is swept away in a flash flood. In swamplands, the company must rebuild sinking roadways annually. The original pine and spruce ties rot and have to be replaced with *lignum vitae*, so hard spike holes must be pre-drilled. At Culebra, they must dig a mile-long channel through blue clay and experience terrible slides. Well-heeled travels on the line attract outlaws and the company organizes the Isthmus Guard under cold-blooded Texas Ranger Ran Runnels. Two mass hangings on the Panama City seawall in 1852 end the crime spree. The torment of incessant rain, mosquitoes, bad food, and nothing to do but work and survive while thousands of the rich pass by bound for El Dorado, do not go away, and workers suffer debilitating depression. The Chinese are particularly prone to "melancholia," and scores commit suicide. Totten writes stockholders he is ashamed so much is being expended for so little

When a locomotive crosses a new iron bridge at Barbacoa, the Panama *Star* proclaims, "The Rubicon is passed." Within a year, the line reaches Summit Station (Culebra). Now, 5,000 men are working from both ends of the line. There is no special ceremony when the last rail is put in place, on Jan. 27, 1855, but Totten next morning drives a ten-car train on the first transcontinental run. He claims it is a perfect, thundering ride, but in fact, the way is so curved and the roadbed so tender, Totten must crawl cautiously. He stops 26 times in the 7-hour run. Within weeks, the short dry season arrives and dignitaries come to Panama for a celebration. All marvel at the tropical sights, but do not consider the horror that has gone into giving them a comfortable ride. At Summit

Station, the U.S. plenipotentiary reads a forgettable speech. The average time for crossing is reduced eventually to three hours and business booms.

In the next ten years, the railroad carries 400,000 passengers and takes in $600,000-$1 million annually. It collects 0.25% on the value of all precious cargo and $25 per trip for passengers. The rate starts as a local joke, which is passed to New York to give the directors a laugh, but they take it seriously and, enjoying a monopoly, enforce it. The alternative is to walk, and they charge $10 to follow the company's right-of-way. Even allowing for repairs and upgrades, the railroad clears $7 million in fewer than six years, and at one point its stock is at the top of the New York Stock Exchange. Company workers are well paid and enjoy free food, housing, and medical care. A library of sorts and stone church are built at company expense. Many Irish, French, and Italian workers stay on, along with Jamaicans and black West Indians, and blend into the population.

The beginning of the end comes in 1880, when aged Ferdinand de Lesseps arrives, determined to repeat his triumph in Suez. Totten goes to Panama to meet him, and they agree in principle on building a sea-level canal. Since 1849, many have talked about such a project, but no one has had the money. De Lesseps is still in the fund-raising stage, but knows the key to success is controlling the railroad. The principal stockholder, Trenor W. Park, demands twice the market value, and De Lesseps makes due for six months before giving in and the Compagnie Universelle du Canal Inter-ocyanique pays $20 million. Park personally clears $7 on the transaction. Years later, in 1904, the U.S. purchases the bankrupt French company's assets for $40 million and the decrepit railroad is part of the package. It is completely overhauled and double-tracked. During the American excavation phase, it carries massive tonnage, and has its original route altered to make way for Gatun. Traces lie 60-70 feet below the surface today, near a Smithsonian Institution research center on a tiny island that was once a mountain, in the midst of one of the world's great shipping lanes. The forest has changed little, and it is difficult to imagine the energy and determination, toil and suffering that have gone into making this passageway.

Part 3, Chapter 7

Part 3, Chapter 7 Summary and Analysis

"The Builders" opens with an annotated roll call of those responsible for that engineering marvel, architectural masterpiece, perfect expression of 19th-century industrialism, turning point in urban American history, and simply a nice way to cross the East River, in the Brooklyn Bridge. All are departed, leaving precious little about their lives. One winter day in 1852, John Augustus Roebling is inconvenienced when ice halts the Brooklyn ferries, and, 30 years later, sells the idea of a bridge to civic leaders by leading them on a tour of his creations in Cincinnati and Niagara Falls. Roebling is a cold, vain, suspicious, tormented man, cruel toward his children, but hailed by the public as a benefactor. He names son Washington, whom he has groomed to succeed him, his assistant, and before his eyes, through rare inattention, suffers an accident that leads to his agonizing death from tetanus.

Washington is left to carry out his audacious plan for two massive gothic towers strung with four great cables carrying the roadway high enough above water level for clipper ships to pass beneath. The 32-year old lacks working drawings, but has experience and "vitality." He is less creative than his father, but is exceptionally observant and retentive, and surrounds himself with able, loyal, and youthful men, whom he gives free rein but retains final approval. Washington orders materials, writes specifications, and submits clear, thorough annual reports. Massive pneumatic caissons are his supreme contribution, the unseen bases upon which the towers stand. Readers of popular magazines are invited to picture caissons as underwater workrooms for diggers that settle into the mud until they hit bedrock. On the Brooklyn side, boulders slow progress and, as depth increases, workers' ears ring and voices change. When a "Great Conflagration" breaks out, Washington directs fire fighting and, believing it is out, comes to the surface too rapidly and falls paralyzed with "the bends." Washington returns when flames re-ignite. Repairing the damage sets work back three months. When they hit bedrock, attention shifts to the New York side, where digging goes smoothly and the caisson sinks so deep deaths occur. Washington gambles on hardpack sand being firm enough and orders digging stopped.

Never recovering fully, Washington becomes a legendary "man in the window," directing the project from his Brooklyn apartment or Trenton. He sees only doctors, select trustees, a few subordinates, and his wife Emily, who, rumors say, is running things for her invalid or insane husband. Some of his symptoms fit neurasthenia (nervous prostration) better than the bends, and he may have been addicted to morphine or laudanum, but Emily suggests he simply cannot endure people, and he states he has pushed himself too hard and needs quiet and rest for his "emotions." Whatever the explanation, Washington's intellectual faculties are not affected and je leans on wise, tactful, cheerful, graceful, entertaining Emily as private secretary, nurse, constant companion, connection with the trustees, and aide-de-camp (much as Washington had served her brother during the Civil War). She maintains his paperwork, visits the work

sites daily in all weather as his "eyes," and in the final stages meets with manufacturers to explain how parts are to be fabricated. At a dinner in New York in 1882, Emily is hailed as a "woman of unusual executive ability," firm, decided, opinionated, and frank. If Washington is indispensable to the bridge, Emily is indispensable to him.

Bad weather, financial crises, and labor troubles cause delays, angering the trustees. Trustee Abram Hewitt blocks the Roebling firm from getting the wire contract as a conflict of interest, and throws it to J. Lloyd Haigh, who defrauds $300,000 substituting substandard product before being discovered. The bridge is not compromised, because Washington's original specifications are so high. New trustee Seth Low fails to fire Washington in a "spirit of reform," and when Emily rides in the first carriage across the bridge, she carries a rooster, a symbol of victory. The grand opening on May 24, 1883, draws President Chester A. Arthur and Governor (future President) Grover Cleveland. Construction takes three times longer and cost double what John Roebling estimates, and to this monetary cost must be added 27 lives, and the suffering of widows and permanently disabled workers. Washington writes ruefully, "Most people think I died in 1869," but expires in his Trenton bed, at 89, on Jul. 21, 1926. Few of those who work on the bridge speak or write about it, leaving the speeches, poetry, essays, and editorials to others. The workers, it seems, let their work speak for itself.

Part 3, Chapter 8

Part 3, Chapter 8 Summary and Analysis

"The Treasure from the Carpentry Shop" takes a different look at the bridge builders' legacy, through blueprints and drawings unearthed 90 years later in a New York City carpentry shop. In 1969, the year of the moon landing, when most folk view the Brooklyn Bridge as a quaint relic (and McCullough is digging through another long-neglected Roebling archive at the Rensselaer Polytechnic Institute), "trunnions" connecting the vertical cables to the roadway show signs of wear and civil engineer Francis P. Valentine is sent to look for plans to the custom made part. He discovers 10,000 documents in disorder, dust, and filth, and senses the carpentry shop is a treasure trove, not a waste of space as the engineer in charge of East River bridges has decided. Luckily, his order to throw it out is disobeyed. Valentine wonders why many of the wonderful drawings are signed WAR- and realizes it is the Chief Engineer's initials. Valentine cannot interest historical societies or the Museum of Modern Art in such an extensive collection and newspapers ignore him. In 1974, Valentine discovers neighbor and softball teammate, David Hupert, works for the Whitney Museum of Modern Art, with together they select 65 drawings for painstaking cleaning at the Metropolitan Museum of Art.

A show opens in May 1976. The longer it runs, the greater is the attendance, and the Municipal Archives and the Brooklyn Museum commence a turf war for the whole collection. The Brooklyn Museum exhibits 300-400 items for the bridge's centenary, and the Municipal Archives take permanent physical possession of what is a complete record of how the pioneering work that captures the heart of an era is carried out. Every component is custom-made and each is carefully drawn. Roebling signs 500, but there are contributions from 64 draftsmen and assistant engineers, the best in the profession, whose specific contributions can now be pinpointed, while their faces and personalities are lost. German-born Wilhelm Hildenbrand handles masonry, architectural design for the New York Approach, and the mathematical calculations for suspending the roadbed. The drawings are striking in the obvious pride, care, concentration, passion, and love that go into them. They show an insistence on order and quality that are lost in today's simplified engineering and architectural renderings. Many use watercolor to show enough detail for illiterate craftsmen to build what they see. They show the bridge in its total setting rather than as an isolated entity. Historians have considered the Brooklyn Bridge a solitary redemptive symbol of the corrupt Tweed and Grant years, but these drawings prove it is not an ordinary era. In 1872, Thomas Kinsella in the Brooklyn *Eagle* observes few who cross the bridge will value the courage, faith, and genius that underlie its successful building. Rediscovery of the builders' drawings increases appreciation.

Part 3, Chapter 9

Part 3, Chapter 9 Summary and Analysis

"Long-Distance Vision" pays homage to the brave skilled young men and women who in the mid-1920s pioneer the age of aviation. Six perish trying to cross the Atlantic before Charles A. Lindbergh, Jr., lands in Paris on May 21, 1927. They are intensely professional and serious about the craft of flying and their role in history and, most remarkably, are graceful, visionary, and prolific writers. Except for homely Antoine de Saint-Exupyry, they are the beautiful and glamorous Anne Morrow Lindbergh, Beryl Markham, and Nevil Norway, who writes under the name of Nevil Shute. Also included are John Grierson and Amelia Earhart. Differing by nationality and flying abilities, they share a love for the freedom flying gives, for the still unspoiled corners of the Earth, and for fellow pilots. Aviation is a common cause destined to bring humanity closer together and, when it turns out to be a bane in wartime, are disillusioned. Unlike the pioneers of railroading and automotives (and astronauts today), they produce a unique, fresh, powerful, and enduring body of literature. They feel connected to the earth by open cockpits and navigating by details of the landscape rather than instruments. The sky is their frontier and element and inspires them as the sea does Melville and Conrad. They also have a sensual feeling for their planes, which they know intimately.

Flying is a spiritual pilgrimage, elevating them out of themselves, surpassing music, art, and literature. They fly and write with the prospect of sudden death and technology soon stealing the soul of their profession. Markham likens it to the vanished age of the sea captains. The era ends in 1937 with Hitler's bombing practice on Guernica and Earhart's disappearance in the Marianas. By 1939, it is ancient history. Charles Lindberg visits Germany on a secret mission to gauge German strength, is awarded a Nazi medal, sees his popularity in the U.S. plummet, is viewed by many as a traitor for his outspoken isolationism, but later flies combat missions in the Pacific. When she learns Saint-Exupyry is lost on a mission in 1944, Anne Lindgergh feels a special agony, distinct from death. Seeing the devastation technology brings to Europe, Charles Lindberg renounces his profession to live with nature. Markham goes back to raising horses and never writes again. Shute emigrates to Australia and writes *On the Beach,* a haunting evocation of a world perishing of radiation. Saint-Exupyry had already warned in *The Little Prince* mankind is forever responsible for the world it has tamed and told a friend moral greatness derives more from a sense of responsibility than from courage or honesty. Charles Lindbergh, whose father takes him as a boy to marvel at the Panama Canal, realizes personal accountability is needed to keep technology from separating mankind from its moral nature. He and Markham are both drawn to the Masai people's kinship with life's elemental forces. In his 1976 posthumous *Autobiography of Values*, he confesses to feeling little responsibility for dropping bombs on Rabaul, and recalls a Masai warrior's statement civilization is not progress. Lindbergh comes to believe progress can be measured only by the quality of all life on the planet and espouses a long-distance vision of balance being struck between humanity and nature. His widow is the last of the pioneer pilots alive and continues writing.

Part 4, Chapter 10

Part 4, Chapter 10 Summary and Analysis

"Cross the Blue Mountain" is another homage, a personal reminiscence of McCullough's friend, the overlooked American author Conrad Richter. They first meet in 1963, when McCullough visits Richter's home across the Blue Mountain in Pine Grove, PA, to research an article that never materializes. They become fast friends, despite the age difference in their ages. Richter is born in Pine Grove and at 15 begins working in the mines and other tough jobs before starting to write for the Johnstown *Journal.* He marries Harvena Achenbach and in 1928 takes her to New Mexico to cure her tuberculosis. There he cares for her and struggles to survive on his writing during the Depression, mostly for *The Saturday Evening Post*. His first novel, *The Sea of Grass* (1937) ends financial worries. Feeling like a late bloomer, Richter writes daily to make up for lost time, producing in 30 years 15 novels, a collection of short stories, and a novel for children, keeps an unpublished journal, and compiles notes on early rural life and speech. In 1950, they return to Pine Grove, where Harvey remains bedridden. Richter is passionate about the despoiling of the American land and Indians, and is interested in the occult. He is shy and modest and has few friends outside his small family. He allows no one to make a fuss over him, even when he wins the Pulitzer Prize in 1951 or the National Book Award in 1961. Able to work only with life stirring around him, he writes in the dining room. When restless, he packs up and takes a house for a few weeks in Connecticut or Maine.

Richter works hard to compress and simplify materials, making his texts appear easy and natural, stripping away everything extraneous, leaving only pure story. He uses historical details sparingly, but he has a perfect sense about early life in America, which he loves. His stories are tender, earthy, often funny, and violent. The land is an elemental part of the story, vast, powerful, and mysterious. He finds the spoken language of the frontier particularly important and he combs sources for precise vocabulary and phraseology, which he documents in an amazing loose-leaf thesaurus. The underlying values of his novels are old-fashioned courage, respect for fellow humans, self-reliance, courtesy, devotion to truth, loathing of hypocrisy, and the power of simple goodness - the "old verities" vanishing from American life. He believes those who speak of the "Puritan ethic" understand little about the Puritans. Richter's writings are widely praised and he has a passionate, devoted readership, but is never fashionable, because he takes no heed of literary trends. His belief one gains from hardship is implicit in his stories. Unannounced, Richter once visits the McCulloughs at Martha's Vineyard, sees what he wants to see, and vanishes, perhaps unable to bear being separated from the mainland. He never visits Europe, but goes to Mexico, which is part of the same land mass. Richter dies Oct. 30, 1968. Born on Oct. 13, 1890, thirteen is always a number he likes, while thirty, the end-mark in journalism, is a number he dislikes.

Part 4, Chapter 11

Part 4, Chapter 11 Summary and Analysis

"The Lonely War of a Good Angry Man" portrays Harry Monroe Caudill's crusade against the devastation of eastern Kentucky by strip mining. Caudill is no abstract, drop-in tree-hugger, but a resident of Whitesburg, KY, Letcher County, who see from his own backyard the gaping yellow sideways wounds slashed into the steep wooded slopes around him. In the next county, hundreds of acres are baked iron-hard, ooze poisonous acid, and the dirt and rock that used to cover them form a slope of debris that looks like a set for *All Quiet on the Western Front* or the rampaging of a monster. Tucked into the greenery beyond the slope sits a cabin and abandoned cars, once the home of strip miners, long gone. Only in the late 1950s is Kentucky subjected to the heavy equipment that now runs continuously, removing 50 million tons of coal a year. Most of it is done by small, independent "operators" as fronts for giant outside corporations that mountain folk distrust. Since strip mining is the quickest, easiest, cheapest, and safest way of getting coal, and highly profitable for the operators, it goes on at a brutal pace n a dozen states and is unlikely to go away while the need for fossil fuels increases. Strip mining makes L-shaped cuts into steep mountainsides, exposing 30-50-foot "highwalls" of raw rock as topsoil, rock, and clay are scraped off the "bench" and sent crashing down the slope to form "spoil banks" until a coal seam is revealed. Three acres of mountain are "disturbed" for every acre mined, and another eight acres per mile are torn up for access roads. With two or three seams at different elevations being common, little of the average mountainside is spared as seven-man crews advance a hundred yards a week in 12-hour shifts. Long after mining ends in an area, unstable spoil banks give way and slide. Rainstorms slice into them like a knife, choking and poisoning streams and blocking roads below. Spring flooding no longer rejuvenates farmlands, it ruins them. Seeing their beautiful surroundings abused, people turn slovenly. For the poorest, least educated, articulate, and comprehending of them, Caudill is an avid spokesman.

A combination of John Muir, Mark Twain, and Don Quixote, an independent, obstinate fighter, the married 47-year-old father of three is the son of a disabled miner, a wounded veteran of World War II, a graduate of the University of Kentucky, a practicing attorney. In 1954, as a Democratic state legislator, he risks voting for a pioneering strip-mining law. In 1963, he publishes *Night Comes to the Cumberlands,* likened to Steinberg's *Grapes of Wrath* for raising consciences. In 1965, he helps found the Appalachian Group to Save the Land and People, and in 1966 pushes successful laws, the best in the U.S., but akin to legalizing rape provided the perpetrator promises to restore his victim to her original condition. Caudill is pessimistic about any place in America beneath which coal can be found. Revised and improved some, the law empowers the Division of Reclamation to suspend permits of and levy fines on offending operators, but under director Elmer Grim, it concentrates on managing its image through a colorful brochure showing backgraded, replanted strip mines. "Hot" seams, which thwart attempts even if topsoil were trucked in at great expense, outnumber such successes,

and without restoring ground cover, spoil-bank slides cannot be controlled. Critics call the reclaimed mines "Grim's Garden Spots."

Since childhood, Caudill has collected mountain stories, which he tells with great relish to frequent visitors from Washington and New York, come to take "Harry's horror tours." His stories deal with the courage engendered by harsh, uncertain mountain life and with the land whose desecration few Americans know, far from the bluegrass racetrack and industrialized western lands. Until the latter part of the 19th century, eastern Kentucky changes little from pioneer times, but then come timber buyers offering cash money seldom dreamed of in the region, and between the 1870s and 1930s, nearly all the virgin stands are cut down. Caudill and the Louisville *Courier-Journal* are responsible for having the last 550 acres, Lilly's Wood, spared. The destruction of this natural treasure is minor compared to that done by the railroads and coal exploiters that arrive at the end of the 19th century. Affable, storytelling agents by the thousands get mountain landowners to put their X on broad-form deeds that sign away title to sub-surface mineral and metallic substances and authorize the grantees to do anything "convenient or necessary" to extract them, with no liability for any damage resulting from their operations. The agents pay 50? an acre that will yield 5,000 tons of coal - worth $20,000 today. By 1912, the backward region is tied to industrialized Pittsburgh, flooded with outsiders, and suffering "black damp" and other underground, work-related maladies. Wages are excellent, so no one complains until the Depression hits. Only with World War II does coal again become a "cash crop" and remains one through 1948. Automation in the 1950s sends 250,000 mountaineers out to become the nation's "urban poor."

This is when strip mining begins, legally enforced by grandfather's X on broad-form deeds. Courts consistently side with the coal industry, and bulldozers become targets for frustrated mountaineers' metal-piercing bullets. In 1968, $750,000 worth of heavy equipment is sabotaged, striking fear in the companies, but resulting in no arrests. Juries would never have convicted anyone. Strip mining requires none of the skills needed below ground, reduces the number of employees needed, is safer than working underground, and creates no psychological fear. In 1968, Caudill unsuccessfully represents the plaintiffs in *Martin v. Kentucky River Coal Corp*. and hopes some day to find a client willing and financially able to fight all the way to the U.S. Supreme Court. In the meantime, he gets what little he can for poor men victimized by black lung, menaced by landslides, and deprived of potable water. Many opponents label Caudill as "overemotional," fault his facts, and even tar him as a communist. His staunchest allies are the *Mountain Eagle's* editor, Tom Cush, and writer Tom Bethell, a Bostonian inspired by Caudill's first book. They keep pressure on the industry, which fights back by canceling advertising and supporting a rival paper. Bethell's cabin is torched, anti-sympathetic poverty workers are jailed for sedition, McCullough is accosted as a "goddam outsider" bent on giving the county a bad name, and a BBC crewmember is shot dead for photographing a local's property. Still, Caudill writes, building interest nationwide.

Many locals want less attention, including college friend Sturgill, who asks what Caudill is doing for the community to compete with his company's employing 287 and pumping

$6 million into the economy. Caudill's defenders see Sturgill and others blinded by the jargon of free enterprise, seeing nothing wrong with exploiting people and lands. Caudill believes the darker side of humanity requires the federal government step in to control strip mining along European lines, where topsoil and subsoil be kept separate for systematic restoration after the coal is gone. This will raise coal prices from their unrealistically low levels and the corporate leaders who must drive change live far away and care only about profits. No one is interested in the vast potential of the Appalachians beyond coal, which Caudill points out, warning the ease with which Lake Erie is destroyed could repeat anywhere. His likening the fouling of spaceship earth to Apollo flights on which astronauts go mad impresses a Senate committee and *Audubon* magazine exposure lead to the saving of the Red River Gorge from damming by the Army Corps of Engineers. For everyone who opposes Caudill many stand wholeheartedly with him. When McCullough asks Caudill why he stays in Letcher County, he tells a favorite story about the "Holbrook and Underwood War." The Underwoods pin down Old Claib Jones but give him a chance to surrender before finishing him off. Claib replies, "We want to fight on a while longer anyway." That is what Harry and Anne Caudill also want to do.

Part 4, Chapter 12

Part 4, Chapter 12 Summary and Analysis

"Miriam Rothschild" offers an appreciation of a quirky, brilliant woman with a famous surname but little academic training, who has too much fun doing too many things to be taken seriously, yet holds an honorary degree from Oxford and is a Fellow of the prestigious Royal Society. Her latest project is wildflowers and she cuts a memorable figure in the meadows, heavyset in a loose-costume of her own design, green rubber boots, graying hair tied back with a flowing blue scarf. She sleeps four hours a night, keeps a suitcase packed, and, while loving museums and libraries, cannot spare the energy to cut out things she does not want to see and hear in cities. Thus, she lives year-round at sprawling, overgrown Ashton Wold, where she is born in 1908. Both father Charles and Uncle Walter are a gifted amateur entomologists who devote themselves to science after try conscientiously to fit into the family firm, N. M. Rothschild & Sons, which dates back to all-business Nathan Mayer Rothschild, who in the 18th century immigrates from Germany. His son Lionel, Disraeli's friend, finances Britain's purchase of the Suez Canal, and Lionel's son Nathan ("Natty"), one of the most brilliant financiers of all time, is popularly considered the real ruler of England and is the first Jew to sit in the House of Lords. When Charles commits suicide, childless Uncle Walter becomes a large part of 15-year-old Miriam's world. He is the addressee of the Balfour Declaration of 1917, committing Britain to establishing a national home for the Jews in Palestine, but more importantly to Miriam, a naturalist of unbounded enthusiasm and total recall. Rich beyond belief, he is often in debt, building a world-class collection of butterflies.

Miriam, too, is a born naturalist, starting with ladybugs and flowers, moving seriously to marine biology, and, after marriage, to fleas, which she can study while the six children by husband George Lane sleep. She catalogs her father's flea collection, publishes *Fleas, Flukes & Cuckoos,* a sprightly book for lay readers, and becomes known as "Queen of the Fleas." She first records the flea's phenomenal ability to leap, the connection between the rabbit flea's reproductive cycle and the hormonal state of its host, the monarch butterfly's evolutionary immunity to milkweed poisons that render them unpalatable to predators, and extreme toxicity of her beloved ladybirds and caterpillars. Her decrepit greenhouses yield deadly castor oil seeds for study and wildflower seeds as a cash crop, part of her scheme to reintroduce wildflowers everywhere possible. It's an undertaking that catches the public fancy. Along with her old white rabbit, she raises a magpie in a hornet-free environment so she can test whether birds' fear of hornets is innate or learned. Miriam owns a pub in Ashton, the Checkered Skipper (named for a rare butterfly), which holds a unique gallery of intense paintings by schizophrenics. During World War II, Ashton billets 6,000 U.S. airmen and Miriam's house is the base hospital. She delights in talking about humorless Major Clark Gable. She prides herself in inventing automobile seat belts, but cannot get a patent. Uncharacteristically inactive during the war, Miriam is part of the top-secret group at

Bletchley Park, cracking the Germans' Enigma code. Recalling airmen who do not come back, she hates the war.

Miriam is a serious farmer, in the family tradition, and unlike stuttering Uncle Walter, is "one of God's great talkers," particularly about people losing the sense of being part of the landscape. She hopes her children will take an interest in natural history for their spiritual well being. It keeps 96-year-old Karl Jordan, curator of the Tring Museum going strong, in anticipation of knowing everything in the next world. Looking at a picture of Uncle Walter astride a giant tortoise, Miriam admits, "I find everything interesting." Note how landscape ties this chapter to the next, about David Plowden.

Part 4, Chapter 13

Part 4, Chapter 13 Summary and Analysis

"South of Kankakee: a Day with David Plowden" describes McCullough's drive southward from Chicago one overcast, humid August day with his photographer friend, who lives in suburban Winnetka and teaches at the Illinois Institute of Technology. "South of Kankakee" Plowden says, sounding like an English actor father is "real country." They stop first in the drab railroad town of Chebanse, where Plowden paces, studying the scene before mounting his favorite Hasselblad 500-C on a tripod, and telling McCullough how one can waste a whole day and never take a picture if one spends too long getting started. McCullough inventories Chebanse's colorful sites in his notebook. In a cafy, Plowden enthuses about the scale of the Midwest and wonders why skyscrapers first develop here rather than on a crowded island like Manhattan. Now past fifty, Plowden has spent most of his life traveling by rail and highway, photographing hundreds of fondly-remembered backwater places, producing some of the most powerful photographs in existence of man-made America and the Midwestern farmlands he loves. His work is exhibited in galleries, universities, and private collections and published in magazines and a series of magnificent books, for eight of which he contributes the text.

Plowden is likened to photographers Walter Evans and Eugene Atget and painter Edward Hopper, recording "things passing." Railroads are the obvious repeating theme, dominant symbol in his work, and story of his career in brief. His first attempt at a photograph is as a ten-year-old with his mother on the platform at Putney, VT. He is too frightened by the roaring train to take the picture, but a few weeks later has better luck. His first published photograph appears in *Trains Magazine* in 1954, while he is at Yale. His first and only "regular" job is for the Great Northern Railroad. He studies photography under Minor white in Rochester, NY, and is advised to get trains out of his system so he can turn to other things.

Plowden knows the whole panoply of American railroading past and present, but is no middle-aged train buff turned photographer. He is a deeply thoughtful, perceptive, humorous, temperamental, stubborn, brave, romantic, and contradictory character. He abhors the machines he memorializes and longs for "real country," but lives in dread of the wild. He is profoundly patriotic but feels alien in most of the land he travels. People are his real interest but they rarely appear in his photographs. Small towns both charm and repel him. He is always ready to "get the hell out of here!" Photography is a calling or mission he works at with devotion and energy, and learns so much about his subjects he feels like a historian. He is driven by a feeling he must preserve aspects of American civilization before they vanish. He has often arrived just before things vanish, including the last stern-wheeler on the Mississippi, the Hoboken Ferry, the Scranton railroad Station, the SS *Algosooo*, and beautiful Pittsburgh Point Bridge.

Born in Boston in 1932 and raised in affluence and liberal ideals in Manhattan, Plowden's earliest memories are of the summer place in rural Putney, VT. There, he finds his vocation. As an Assistant Trainmaster in Wilmar, MN, he spends weekends with distant relatives in St. Paul, where he keeps his tuxedo and makes the rounds of grand parties with people he finds uninteresting. Plowden also finds the eight schools he attends uninteresting and Yale with his hated major, economics. He is a good student but personally indifferent. Only his ailing and unsuccessful actor father understands he is meant for other things. His mother takes him as an adolescent to Secaucus, NJ, to photograph trains. McCullough meets Plowden at Yale, but loses contact for ten years after Plowden drops out, marries, and settles in Brooklyn, struggling to make his way as a photographer. Back in the car, the friends continue the driving interview. Plowden enthuses about steel mills, terrifying, hellish, miniature volcanoes. They discuss Plowden's favorite books (Joseph Conrad and Willa Cather), photographers (Pal Strand and Walter Evans, but not self-conscious Alfred Steiglitz), painters (Cyzanne, Monet, and Hopper), and movies *(Days of Heaven, The Last Picture Show,* and the Marx Brothers), before returning to steel mills and the heroic men who work in them. Americans have a thing about being at war with something - the frontier, the earth (mining coal), or the elements (farming).

Plowden admires scarred miners, steelworkers, locomotive engineers, and anyone who does not work in a dull office. Leaving I-57 for empty section roads, McCullough marvels at being walled in by fragrant corn. They stop at the crest of a rise at a crossroad when the sky brightens. McCullough observes the two roads are straight, contrary to the laws of nature, but one feels the land has never really been tamed. Plowden snaps a "souvenir" photo, as he often does. A half hour later, Plowden picks a good corner for preserving Gilman, IL, patiently waiting for the right number of cars to line up on Main Street for the perfect composition. Should the town burn down, its memory will endure in his photographs.

They stop by the Gilman *Star* and chat with the editor, but Plowden does not identify himself or photograph George Elliott, because that would be an imposition and make him a character rather than an equal. They drive on through corn and small towns until dusk, looking at a marvelous house in Piper City and stopping at Chatsworth to investigate a junk shop. At Forest, they stop for gas and Plowden laments Americans never travel roads like this or bother to enjoy the scenery. He recalls in his youth being told by a steward not to raise the window shade in the dining car somewhere in Kansas or Oklahoma, because there is nothing to see out there. Most Americans go to the Rockies, Sun Valley, or the Grand Canyon and miss the real America. Driving on, Gibson City disappoints Plowden, because it has given in to visual uniformity in its signage. They swing back onto I-57, bound for Roberts.

Plowden answers McCullough's question about aggravations of his work by pointing to his shyness, his reticence to steal a bit of someone's soul. He lacks the thick skin needed to be a *Daily News* photographer, getting into people's faces or using a long lens. He needs to talk to those he photographs. There is great drudgery in photography, lots of sheer "donkey work" developing and printing pictures, driving long distances alone, and overnight stays in motels. The only thing that sustains him is phone calls to

second wife Sandra (nye Schoellfopf of Buffalo, NY, with whom he has two children, after divorcing Pleasance Coggeshall, with whom he has another two). Tree-shaded Roberts is nearly dead but somehow magical. It looks like a stage set and Plowden photographs the empty streets.

Plowden explains he photographs empty streets, because they bespeak *all* the people who have ever walked them and allow the viewer by imagination to enter the scene. After viewing the crimson sun above the cornfields (Plowden's favorite time of day, because one can really feel the earth turning) they jump back into the car to find a good locale for shooting the fading light. Plowden captures the best shot of the day and, at 9 PM, just south of Kankakee, phones Sandra to say they are en route home.

Part 5, Chapter 14

Part 5, Chapter 14 Summary and Analysis

"Washington on the Potomac" is a personal homage to the nation's capital, where McCullough lives and works. Woodrow Wilson is the only president to retire in Washington, where he makes his last public appearance on Armistice Day 1923, hailed by 20,000. McCullough often wonders about his wife being de facto the first woman president, and what the people in the crowd that day think about their former commander in chief - the day *The New York Times* headlines Hitler rallying near Munich. McCullough walks past the Wilson house some mornings at a brisk 120 steps a minute, like Harry S. Truman, about whom he is writing. Washington is a wonderful, well-scaled, humane city. McCullough likes the old landmark hotels, finds the National Gallery alone sufficient reason to live there, and extols its making room for nature. From the George Washington Parkway, the view of the river gorge is hardly changed from Jefferson's day, and from Georgetown one can walk 50 miles to Harpers Ferry and pick up the Appalachian Trail. The National Zoo is meant to be walked, and designer Frederick Law Olmstead puts identifying tags on all the city's trees. The Mall, the Washington Monument, and the Lincoln and Vietnam memorials always move McCullough, but he wonders why Henry Merwin Shrady's colossal equestrian statue of Ulysses S. Grant is so little known.

McCullough has lived many places, but Washington is the setting of some of the most important times of his life. He falls in love with the city on his first trip away from home in Pittsburgh, PA, and five years later with a girl who also wants to visit the White House and Mount Vernon. In 1961, he takes a job with the U.S. Information Agency, and one afternoon in the Library of Congress discovers his vocation as a historian. The family returns in 1983 and finds it changed, more artistic and intellectual. He is working on Truman alongside other biographers in the city's great libraries.

Not everyone shares his love for the slow-moving, expensive city, but they are seeing one of the Washingtons - corporate, student, journalist, and black - rather than the historical one, filled with statues, plaques, memorials, carvings, libraries, archives, museum, and magnificent old houses like Blair House, built in 1824 and acquired by the government when Eleanor Roosevelt finds Winston Churchill wandering in his nightshirt and decides other accommodations are needed for presidential guests. There, Lincoln's agent, Francis P. Blair, Sr., offers Robert E. Lee command of the Union Army. Truman, in temporary residence while the White House is being renovated, is nearly assassinated. Federal-style Octagon House, three blocks away, is actually hexagonal. In 1814, the Treaty of Ghent is signed in its parlor, ending the War of 1812, while James and Dolly Madison are living upstairs, waiting for the burned White House to be repaired. McCullough wonders about the spirits of those who have dined or slept in this house. Georgetown, Capitol Hill, and Arlington across the Potomac, are home to many thought-provoking and evocative figures.

McCullough has seen some with his own eyes, like John F. Kennedy's funeral procession and Jimmy Carter's rare triumph after signing the Panama Canal Treaties. Much of what he feels about the city comes from books he has enjoyed. Sometimes McCullough seeks out places that figure in favorite books, but is disappointed to see so much of the old city destroyed in the name of progress. Traffic, nondescript recent buildings, and ubiquitous signage make it hard to picture Whitman seeing a sad-eyed Lincoln ride by the corner of Vermont Avenue and L Street and bow cordially. The most engaging guide to the city's landmarks is E. J. Applewhite's trivial-filled *Washington Itself,* but McCullough's all-time favorite book on the city is Margaret Leech's Pulitzer Prize-winning *Reveille in Washington* (1941), which with Bruce Catton's *A Stillness at Appomattox* help inspire McCullough to read history and dare to write it when he discovers a fitting subject, the Johnstown flood of 1889. McCullough happens to visit the Library of Congress one Saturday when photographs of the disaster are laid out in the Picture Collection. McCullough has made many finds in the Library of Congress, the nation's greatest "treasure house," and understands Wilson's motivation for retiring near this resource. With the National Archives and the Smithsonian - all within walking distance of one another - alone, Washington is an unrivaled research center, but also houses other libraries and research centers like the Folger Library, Columbia Historical Society, the Society of the Cincinnati, the Martin Luther King Library, a dozen university libraries, the archives of each military service, and various government departments and agencies.

Old-timers in amazing numbers, generous with their time and willing to talk also abound in Washington. McCullough has interviewed at least 50 Truman acquaintances, and has more to see, because each identifies others he must not overlook. He imagines how much will be lost when these people are gone. Historians and biographers must experience contemporary Washington's ambition, fears, high-mindedness, and sense of duty to write about the past, like paleontologists observing living fauna to better interpret the fossil record.

It helps to remember how much good creative work has been done here in many fields to fight the temptation to agree with Truman's cynical talk of "Potomac Fever" in government - swelled head and diminished common sense. McCullough is struck by how Abraham Lincoln suffuses the city, far beyond Daniel Chester French's majestic statue in the Memorial. Other statues, busts, and paintings are scattered about the city, two places celebrate his Emancipation Proclamation and two his assassination. The Capitol dome is a reminder of Lincoln's insistence the Union's survival being seen. McCullough wonders why politicians feel obliged to flee at every chance, claiming they need to get back to the "real America," deride the city, run against it, and find association somehow dishonorable. More than anyone - and now more than ever - politicians need contact with history. Their constituents come in tens of millions to soak up a city that shows who Americans are, what they have accomplished, and what they value.

Part 5, Chapter 15

Part 5, Chapter 15 Summary and Analysis

"Extraordinary Times" is a sweeping meditation on how the world has changed since 1936, the most troubled, unsettling, costly, adventurous, and surprising time in history, marked by horror, war after war, and terror and atrocity as political policy, but also by marvels, progress, and proof things need not stay the same. Great music, painting, fiction, and architecture are produced, and medicine and communications fundamentally changed. Colossal sums are spent as government, industry, and science ally. Science transforms the way people live, steadily improving the quality of life but also creating unheard of levels of fear. Physicists, biologists, and astronomers occupy places in history alongside generals and politicians. The U.S. displaces Europe as the center of world power, new countries emerge, mankind leaves the planet, and the dictionary is filled with new words and changed meanings. In 1936, the Pentagon building does not exist and with 438,000 troops, the U.S. Army ranks 21st in the world. The Great Depression puts 9 million out of work, creating desperate poverty. Ominous headlines show Hitler reclaiming the Rhineland, Spain caught up in civil war, Mussolini crushing Ethiopia, and Roosevelt talking about a "rendezvous with destiny." Two of the most crucial developments are unreported, including the launching of experimental German rockets at Peenem'nde and the first discussions of nuclear fission at Copenhagen's Institute of Theoretical Physics.

By 1939, physicists predict splitting the atom will release vast energy, but reporters fail to understand them. Einstein warns Roosevelt about a new kind of bomb, and the U.S. and Britain pump into the top-secret Manhattan Project $2 billion, more than everything spent on scientific research to date. Politics and physics are irrevocably joined. Germany invades Poland, beginning a "total war" that claims more than 55 million lives, including countless civilians. World War II ends in 1945, the watershed year of the 20th century, in which Roosevelt dies, Churchill leaves office, the United Nations - and Vietnam - are founded, and mankind starkly sees its capacity for evil. The Nuremberg trials document how 10 million human beings are exterminated, factory-fashion, and bombs drop on Hiroshima and Nagasaki to prevent massive U.S. and Japanese casualties during an invasion. The war's outcome is determined by America's tremendous industrial power, which remains intact in 1945, and until 1949 when the Russians explode their bomb, the U.S. has no equal or challenger.

The next decades are earthshaking. There are the mounting tensions of the Cold War, the rise of the Third World, the West German and Japanese revival, and the final stage of the Chinese Revolution, effecting one-fifth of the human race. The world grows smaller and more dangerous with crises everywhere, including in Berlin, Korea, Hungary, Suez, Cuba, and Israel. From Truman onward, the U.S. presidency eclipses Congress in importance, and the Truman Doctrine both saves Europe and leads to Vietnam. The arms race of the Cold War keeps the U.S. economy booming, and millions of poor folk leave the rural South for big cities in the North and West. The GI Bill lets

millions attend college, and the federal highway program hastens the flight to the suburbs. Women enter the work force and eventually the women's movement takes hold. Television arrives and conquers, allowing people see great moments as they unfold and are so often replayed afterwards that generations then unborn feel part of them. The computer teams with ballistic missiles and atom bombs to create a deadly threat. Radar and jet aircraft are perfected. Polio vaccine, the Pill, microchips, lasers, and deciphering the genetic code all change world history. Plate tectonics are hypothesized, astronomy is revolutionized, and the architecture of the human brain is grasped.

Space travel eclipses all prior voyages of exploration, made possible by the rocket, mankind's most terrifying tool of destruction. The U.S. space program builds on Peenem'nde, but Russia orbits the first satellite, *Sputnik*, in 1957, the first living being, the dog Laika, and the first human being, Yuri Gagarin, on Apr. 12, 1961. The first American in orbit is John Glenn in 1962. Kennedy asks Congress to fund a mission to the moon and on Jul 20, 1969, Neil Armstrong accomplishes the goal, at a total cost of $25 billion. It is too soon to judge these events or the twin failures of technology in 1986, *Challenger* and Chernobyl, but they make clear human hubris about being master of the universe is misplaced. American life is vastly changed and improved since 1936, but Vietnam and Times Beach, MO, show mankind is limited and fallable. Fighting crime and drugs has been frustrating, and high school students graduate not knowing where Egypt is or which half of the century World War I occurs in. Real earnings for middle-income Americans are dropping, and black Americans are falling fall short of the promise of the civil rights movement. There are more dictators than in 1936 and Nazi-style genocide continues. Gandhi in 1948 is but the first in a long list of leaders assasinated. Future historians may find the era's critical event outside elsewhere, in the rise of Islam, string theory, or something kept as secret as Peenem'nde. Perhaps it will be simply the size of the human population, 5 billion in 1986, or the consequent problems of ravaging irreplaceable resources like the rain forests.

Part 5, Chapter 16

Part 5, Chapter 16 Summary and Analysis

"Recommended Itinerary" is originally a commencement address to the Middlebury, VT, class of 1986, admonishing the graduates to go far. They should visit Florence to get over the idea the present outranks all other times in attainments, Edinburgh, Palenque's Mayan ruins to realize rulers as remarkable as King Pacal are forgotten, and Monticello, paying special attention to Jefferson's 450-variety vegetable garden and recalling the author of the Declaration of Independence says, "No greater service can be rendered any country than to introduce a new plant to its culture." Think how different this is from Hollywood's plans for celebrating the Statue of Liberty centenary.

Tour the heartland of Illinois, Missouri, and Kansas and contemplate those who have worked hard so many seasons but now are gone. Go to eastern Kentucky to see how strip-mining has raped the land and realize reports on reclamation are ballyhoo. Imagine a man who claims to love a woman but knows nothing about her and does not care to learn. No U.S. president since John F. Kennedy has had a sense of history, which ought to be a job requirement. Harry S. Truman, without benefit of college, says, "The only new thing in the world is the history you don't know." They should visit Antietam, MD, and imagine Sep. 17, 1862, where 23,000 fall in one day, the bloodiest single day in U.S. history. Just an hour away from the Vietnam Memorial, commemorating 57,00 fallen over 11 years, Antietam is unheard of, even by an educated writer he know. McCullough is sorry for anyone who misses the experience and horizons of history, of traveling not only in space but also in time.

They should visit the great Brooklyn Bridge but also the Red Cloud, NB, grave of Anna Sadilek Pavelka, immortalized as the heroine of Red Cloud author Willa Cather's *My Antonia.* They should carry Cather's novels when visiting Nebraska and Faulkner's when going south. They should take books everywhere, limit television, and read the most important books of their lives. George Aiken advises to prune trees when the saw is sharp, and the graduates should travel this same way, confidently, thankfully, prizing tolerance and horse sense, and should do something for America.

Part 5, Chapter 17

Part 5, Chapter 17 Summary and Analysis

"Simon Willard's Clock" is about the U.S. Congress. A small boy who with his mother watches the Battle of Bunker Hill in 1775, serves from his teen years as a diplomat across Europe, senator, secretary of state, and president, before taking his seat in the 22nd Congress and is thrilled. John Quincy Adams champions mechanical "improvements" and scientific inquiry, with colleagues Lincoln and Corwin decries the Mexican War, and endures eight years of being hooted and howled at battling the infamous Gag rule that keeps Congress from addressing slavery. He wins and stands as a reminder of the giants driven by conscience who love the ambience and procedures of the House of Representatives.

In 1848, at age 80, Adams collapses at his desk, dies two days later in the Speaker's office, with Henry Clay holding his hand. Lincoln helps with funeral arrangements, and Daniel Webster writes an inscription for his casket. There are many splendid books about Congress, but none does justice to Adams' 17 years there, or other vivid chapters in political history. Historians, biographers, and teachers have neglected great and colorful congressmen. Controversial Joe McCarthy is well written about but nothing about Margaret Chase Smith, who dares stand up to him. Few know who the Russell and Cannon buildings are named for, because no one has written about Richard Russell or Speaker "Uncle Joe" Cannon. Russell, who takes home bound copies of the *Congressional Record* to read for pleasure and remarks on how people who have profoundly affected the course of America life and ideals are entirely forgotten. Cannon's philosophy is "The country don't need any legislation," but has his iron rule ended in a 1910 insurrection led by George Norris, a man forgotten today.

Much remains to be known about the first Congress, when everything was new and untried. Much could be learned from a history of the Foreign Relations Committee, or the Senate in the momentous years of the New Deal. There is not even a first-rate history of the Capitol. As protagonists are few, and they take turns on state one at a time, historians prefer to write about the presidents. Congress is constantly changing, the stage is crowded, always in rumpus, filled with humbug, and overwhelmingly boring much of the time.

McCullough makes clear, for all its faults, Congress is an institution in which to take pride. It has ended slavery and child labor, funded construction on the railroads, Panama Canal, and interstate highway system. It pays for Lewis and Clark and for the moon landings. It changes history through Lend Lease and the Marshall Plan, creates Social Security, TVA, the GI Bill, fair employment legislation, and the incomparable Library of Congress, the world's greatest open repository. In 200 years, 11,220 men and women have served in the House and Senate, too heavily weighted towards white males, but nonetheless have shown all voices can be heard and the people rule. Americans need to know more about Congress, leadership, and human nature. One

might learn from the Truman Committee to save billions or turn to selling bonds again to pay for the war on drugs. Americans must read history like John Quincy Adams at his father's insistence, and write, publish, and teach history better. What did those who read bound issues of the *Congressional Record* know that people today ignore? As Emerson says, former greats call to us affectionately.

McCullough believes the digital watch is the perfect symbol of an imbalance in outlook today, for it identifies only the present moment, without reference to the past or future. When the House used to meet in Statuary Hall, deliberations are watched over by Clio, the Muse of History, riding the winged Car of History, taking notes, as a reminder to members their words and actions count. The present chamber regrettably has only television cameras. Clio and the Card of History are sculpted by Carlo Franzoni, and incorporate a clock handmade by Simon Willard in 1837. It is still keeping time today, showing what time it is but also what time it used to be, when Congress debated great issues, and looks forward to times to come.

Characters

Alexander von Humboldt (1769-1859)

Louis Agassiz (1807-73)

Harriet Beecher Stowe (1811-96)

Theodore Roosevelt

Marquis de Mores

Frederick Sackrider Remington (1861-1909)

Conrad Richter (1890-1968)

Harry Monroe Caudill

Miriam Rothschild

David Plowden

John Quincy Adams

William Henry Aspinwald

Rev. Lyman Beecher

Aime Bonpland

Lord Byron

Henry Chauncey

Charles Darwin

Amelia Earhart

Asa Gray

Elmore Grim

Wilhelm Hildenbrand

Thomas Jefferson

Abraham Lincoln

Anne Morrow Lindbergh

Charles A. Lindbergh, Jr.

Beryl Markham

Emily Warren Roebling

John Augustus Roebling

Washington A. Roebling

Antoine de Saint-Exupyry ("Saint-Ex")

John Lloyd Stephens

Rev. Calvin Ellis Stowe

Bill Sturgill

George M. Totten

Francis P. Valentine

Simon Willard

Owen Wister

Objects/Places

Medora, ND

The Dakota Bad Lands town founded by the Marquis de Mores as a means of bypassing the Chicago stockyards in processing beef for the eastern markets. Theodore Roosevelt settles there in 1883, and builds a ranch, Elkhorn, 30 miles downstream from the, as a place he can be alone to write. Construction begins on while he is absent in the East. No trace of it today remains, whereas Mores' "chwteau" is preserved as a national landmark.

Harper's Weekly

The premier literary magazine of the late 19th and early 20th centuries, *Harper's Weekly* publishes the lion's share of Frederick Remington's illustrations and writings.

Panama Railroad

The subject of Chapter 6's sketch, the Panama Railroad is a rail line laid in 1850-55 across the Isthmus of Panama through 47.5 miles of dense jungle, swamplands, and steep mountains, to link Colun and Panama City. U.S. investors put up $1 for the project, which will facilitate the rush from the East Coast to the California gold fields. The founders are Henry Chauncey, a Wall Street financier, William Henry Aspinwald, a capitalist with a government franchise to carry mail to California, and John Lloyd Stephens, the hands-on president who dies of malaria on the job in Panama. Expensive in terms both of money and workers' lives, the monopolistic railroad quickly turns profitable. In 1881, Ferdinand de Lesseps, renowned builder of the Suez Canal, buys the railroad for $20 million to facilitate digging a transoceanic canal along the same route. His effort fails, and the U.S. buys his assets in 1904 for $40, including the decrepit railroad, which is renovated to serve as the backbone of the successful project. In the final stages, the tracks, which still carry passengers today, are moved to higher ground, clear of the manmade Lake Gatun. Traces of the original project lie 60-70 feet below its surface.

Brooklyn Bridge

The subject of Chapters 7 and 8's sketches, the Brooklyn Bridge is a great feat of human intellect, in terms of engineering and aesthetics, but it is also holds the stories of the many men and one woman who create it. John A. Roebling of Trenton, NJ, is selected to be its Chief Engineer on the strength of his reputation on earlier projects. His chosen assistant is oldest son Washington Roebling, who apprentices on the Cincinnati project. Plans are still in the preliminary stage when John dies gruesomely after an on-site accident, and Washington must carry on. Using the latest caisson technology from Europe, he sinks the base for the Brooklyn tower with great difficulty, owing to the

topography of the river bottom, but the New York caisson goes down all too well, never reaching bedrock before so many workers are getting "the bends" Washington must take a chance on stopping where they are. Working in the caisson, Washington twice suffers the bends, which incapacitate him for the years to come. Wife Emily becomes his eyes and ears, seeing the bridge through to completion.

Aviation

The subject of Chapter 9's sketch, aviation in its infant stages from the mid-1920s through 1937, produces a cadre of intense professionals, serious about the craft of flying and their role in preserving a history they know will not long endure. They include Antoine de Saint-Exupyry, Charles A. and Anne Morrow Lindbergh, Beryl Markham, Nevil Norway (a.k.a. Nevil Shute), John Grierson, and Amelia Earhart. They share a love for the freedom flying gives, for the still unspoiled corners of the Earth, and for fellow pilots. Aviation is a common cause destined to bring humanity closer together and, when it turns out to be a bane in wartime, are disillusioned. They feel connected to the earth by open cockpits and navigating by details of the landscape rather than instruments, and share the feelings Melville and Conrad have for the sea. Flying is a spiritual pilgrimage, elevating them out of themselves, surpassing music, art, and literature. The era ends in 1937 with Hitler's bombing practice on Guernica and Earhart's disappearance in the Mariana Islands.

Strip Mining

The subject of Chapter 11's sketch, strip mining comes to eastern Kentucky in the late 1950s, and today bulldozers, scoops, diesel shovels, coal augers, and 25-ton Mack trucks run continuously, removing 50 million tons of coal a year. Most of the work is done by small, independent "operators" as fronts for giant outside corporations. Mountain folk distrust big corporations and big-city money and the younger generation wants the rotten system destroyed, but strip mining is the quickest, easiest, cheapest, and safest way of getting coal, and for the operators it is highly profitable. Therefore, it goes on at a brutal pace n a dozen states and is unlikely to go away while the need for fossil fuels increases and electrical power plants buy and burn even low-quality coal.

The ecological consequences of strip mining are varied, complex, and damaging. Cuts into the steep mountainsides are L-shaped, with the "highwall" (vertical side) exposing 30-50 feet of raw rock as topsoil, rock, and clay are scraped off the "bench" (horizontal side) and sent crash down he slope (forming a "spoil bank") until a coal seam is revealed. Three acres of mountain are "disturbed" for every acre minded, and another eight acres per mile are torn up for access roads. Since generally there are two or three seams at different elevations, little of the average mountainside is spared. A crew of seven can advance a hundred yards a week, working two 12-hour shifts. In Europe, governments require operators to separate the topsoil and subsoil they excavate, in order to replace it properly after coal is extracted. Caudill sees this as the only practical alternative to having the federal government outlaw the practice entirely.

Washington, DC

The subject of Chapter 14's sketch, the capital of the United States is where McCullough currently lives, works, and strolls about, finding the past alive in monuments, libraries, museums, and historic houses. The incomparable Library of Congress inspires and fuels his career as a historian, Lincoln's pervasive presence inspires him, and recent politicians' attempts to keep the city at arm' length to avoid contamination revolts him. Like no other city, Washington demands people face history, which is something every American needs to do.

Technology

Chapter 15 discusses how the ballistic rocket, nuclear power, and computers, three technologies emerging from just before and during World War II, have combined to great the greatest threat ever to the continuation of the human race. Minus the bomb, rockets and computers have put human beings on the moon, eclipsing all prior voyages of exploration. Medicine and communications have been completely changed in the years since 1936 and genetics proved, improving the length and quality of human life. Mankind's hubris has been challenged by *Challenger,* Chernobyl, and Times Beach, MO. All of this has come at enormous financial cost and linked science, industry, and government inseparably, creating a potential danger President Eisenhower warns about in his farewell speech in 1961.

Nineteen Forty-Five

The watershed year of the 20th century, 1945 marks the passing of Franklin D. Roosevelt, the political fall of Winston Churchill, the formation of the United Nations - and of an independent Vietnam under Ho Chi Min, and the dropping of atomic bombs on Hiroshima and Nagasaki, ostensibly to prevent massive U.S. and Japanese casualties during an invasion. America's tremendous industrial power, which remains intact in 1945, and continues to drive the prosperity of the following decades, separating them sharply from the Great Depression, which requires World War II to end. In 1945, mankind starkly sees its capacity for evil, in the bomb and in the Nazi death camps, which General Eisenhower insists on viewing personally, so he can witness to future generations this is not just a legend.

The United States Congress

The subject of Chapter 17's sketch, Congress is a proud institution served by 11,200 men and women in 200 years, Often lambasted, it has accomplished much good -- ending slavery and child labor, funding railroads, Panama Canal, and interstate highway system, terrestrial and celestial exploration, history-changing Lend Lease and Marshall Plan projects, Social Security, TVA, the GI Bill, fair employment, and the Library of Congress. Historians, biographers, and teachers have neglected great and colorful

congressmen (while writing about controversial figures like Joe McCarthy), concentrating on the easier subject of the presidency, where protagonists are few, and they take orderly turns in office, while Congress is constantly changing, the stage is crowded, always in rumpus, filled with humbug, and overwhelmingly boring much of the time. While too heavily weighted towards white males, Congress shows all voices in the U.S. can be heard and the people rule. Americans need to know more about Congress in order better to understand leadership and human nature.

Themes

Courage

Courage is a common thread running through many of the stories collected in David McCullough's *Brave Companions.* They include eminent scientists, brilliant engineers, bone-weary common laborers, glamorous pioneer aviators, a political activist, a generation that emerges from economic depression to defeat totalitarianism, and an ex-president content to serve in Congress and battle against an illegal war and imposition of a Gag Rule that prevents debate on the divisive question of slavery. For many, courage is an unavoidable part of accomplishing what they desire, exploring unknown regions (Alexander von Humboldt and his partner, Dr. Aime Bonpland), well equipped by 18th-century standards, but woefully by today's, whose love of nature have them paddle and climb through hazardous landscapes that frequently threaten death.

Others, like the workers on the Panama Railroad and Brooklyn Bridge, accept exceedingly high risk of injury or death, because they need jobs. The number of project executives who put themselves physically at risk is small, but John Lloyd Stephens, the hands-on president of the Panama Railroad alone among the founders, works in the jungle and dies of malaria. Washington A. Roebling, Chief Engineer on the Brooklyn Bridge project, spends more time than anyone at depth in the underwater caissons, and is crippled for life by the mysterious "bends" when he comes to the surface too fast after fighting a fire.

The pioneer aviators of the 1920s-30s are courageous, but not as altruistic, for they know themselves to be glamorous celebrities, setting records and experiencing an emotional high, risking injury and death with every flight. Appalachian activist is courageous for a noble cause, calling attention to the rape of eastern Kentucky by strip mining interests, among people he admits are apt to apt to settle differences with dynamite. Less dramatic but as principled is civil engineer Francis P. Valentine's fight to keep a treasure trove of accidentally discovered plans and drawings for the Brooklyn Bridge to being destroyed. Finally, McCullough calls on new graduates, legislators, and presidents to have the courage to re-engage with history, to throw off the apathy, disinterest, and distaste for it that have grown up in the last half-century, to dare to see what earlier generations have seen in history and biography, and to delve into and enjoy it.

Progress

Brave Companions deals with progress usually as a positive thing. Only Frederick Remington, the great illustrator and writer about the Old West has no use for change, the replacement of cattle roundups and cavalry encampments by sod huts and eventually towns. Aware the past he romanticizes is quickly passing, he writes and paints rapidly. In addition, Remington hates the masses of European immigrants ruining

the nation and, consistently, refuses to own a car. His fellow traveler in preserving the Old West, Theodore Roosevelt, is not consistent, for he is the epitome of the Age of Progress and ultimate force behind the U.S. construction of the Panama Canal.

The greatest symbol of progress in the late 19th century is the Brooklyn Bridge, a triumph of engineering, pushing technology to its limits. Looking back at it in the era of moon landings, however, Americans see it as quaint. McCullough devotes a chapter to showing how its builders took a pride in their work that today cannot be found, and suggests this drop in standards is regression rather than progress. Naturalists Alexander von Humboldt, Louis Agassiz, and Miriam Rothschild, Albert Einstein, the physicists of the Manhattan Project, and the Peenem'nde rocket scientists all advance the cause of science and serve progress, but some of their discoveries threaten to throw mankind back to the Ice Age or destroy it entirely.

The essay, "Extraordinary Times," examines this theme systematically and points out progress' many dangers as well as benefits. That it has lengthened and enhanced the quality of human life is unquestionable. To Harry Moore Caudill, technological progress has brought only woes to his eastern Kentucky region, as the demand for cheap fossil fuel makes it impossible to end the raping of the earth by strip mining, and all reasonable efforts to disguise the scars in the earth fail. European countries have found good solutions, but they are too expensive for greedy American companies to consider.

Photographer David Plowden has built his career depicting railroads and other icons of technological progress, but laments the passing of small Midwestern farming, and feels responsible for documenting things that are disappearing. Perhaps the most damning comment on progress comes from McCullough directly. Digital watches document only the current moment, without reference to the past, which has been very rich, or the future, which no one can say what it holds. Historians will one day determine what is truly progressive and what has done irreparable harm. Technology's spectacular failures should lessen human hubris.

History

Brave Companions deals above all with history, showing how the author falls in love with it through reading about the Civil War, happens one Saturday morning upon a subject for his first book, has made a living writing books and articles, enriching himself intellectually and spiritually through the process of research and fact-finding. His friend, photographer David Plowden, feels himself a historian, preserving in images many elements of American life that are passing away, and by talking with people to learn about their lives. The same sense motivates Theodore Roosevelt and Frederick Remington vis-a-vis the Old West, historically in Roosevelt's case and romantically in Remington's.

The aviators of the 1920s know technology will soon strip flight of its romance and glamour, and write novels to preserve the memory. Harriet Beecher Snow unexpectedly in 1850 writes a novel about slavery that inflames the South, galvanizes the North, and

virtually guarantees Civil War, changing the course of history fundamentally. Another fundamental shift occurs in the 20th century, as war demands new technologies that post-war both benefit and menace mankind. Hitler had to be defeated, but his defeat is by no means certain when American enters the war.

History forgets much, like Alexander von Humboldt's true contributions, but occasionally rich legacies are rediscovered, like the plans and drawings for the Brooklyn Bridge, found n a dusty carpentry shop after 70 years and nearly thrown out to save space. Washington, DC, more than any city makes an effort to keep history in one's face through monuments, museums, libraries, and preserved homes, but ignorance of history is massive there. Unlettered President Truman warns against ignorance of history, and McCullough would make appreciation of history a job requirement for the White House. There are no adequate histories of Congress or biographies of its non-controversial members so much that could motivate to good is unknown. Even educated journalists have never heard of Antietam, an hour's drive outside Washington. Americans must shake off this malaise of ignorance and take up traveling in time and space through the reading of history.

Style

Perspective

Born in Pittsburgh, PA, and educated in English there and at Yale University, David McCullough becomes interested in history and jumps into the demanding discipline as an amateur. Now the much-acclaimed author of biographies (presidents John Adams, Theodore Roosevelt, Harry S. Truman) and chronicles of great human undertakings (the Johnstown, PA, dam, Panama Canal, and Brooklyn Bridge), all intended to allow non-specialists to feel the times about which he writes, McCullough brings together in this volume seventeen portrait sketches, prepared over some twenty years and previously published in journals or delivered as speeches.

At first glance, the subjects are seemingly unrelated, but they are in fact interconnected by courage and decisiveness, which as a writer, McCullough finds inspiring. They are also connected by the serendipitous chain of research - reading about one person leads to another, which leads to yet another, and so on - which McCullough finds the exciting part of doing history. Many, like McCullough himself, come first to the task(s) for which they are remembered in history as amateurs or dabblers. McCullough laments history has been reduced to politics, war, and social issues, told dryly, tediously, and colorlessly. He has always tried to soak up the local color of his subjects and impart this to readers as "figures in a landscape." He has always taken pains, too, to write history not as predestined "truth," but as someone else's present. McCullough's subjects have no better idea of how things will turn out in their lives than readers do in their own. McCullough pays homage to the "brave companions, the best of companions" about whom he writes, whether they ultimately succeed in their goals or fall short, for the encouragement they have given him while struggling to establish himself as a historian.

Tone

David McCullough writes objective history, smoothly, flowingly, colorfully, and concisely, always careful to help readers feel the worlds in which his subjects live their brilliant lives. In the Introduction to *Brave Companions,* McCullough explains he portrays "figures in a landscape," and describes how he often travels to the venues before committing to write about them to soak up local color. McCullough weaves many historical characters into the narratives with remarkable clarity to establish how his subjects change the lives of their contemporaries and create a rich legacy for their posterity. Originally prepared, often hastily McCullough confesses, as magazine pieces or speeches, the chapters in this book focus closely on figures now overlooked by formal history books, and establish a web of significant, interconnected lives that are marked above all by courage and dedication.

In each chapter, McCullough points out the subject's importance, subjectively to be sure, but always based on a plethora of objective grounds. He clearly intends *Brave*

Companions to inspire readers as much as the subjects have inspired and encouraged him while researching and writing about them. The key to a useful life, McCullough believes, lies in attitude. Thus, *Brave Companions* draws together stories of people overlooked or forgotten by history whom McCullough hopes will inspire ordinary readers. It is very much a "feel good" book, but not at all a work of pop psychology. It takes in the "full sweep of human experience," which is the true stuff of history, a spacious and walless realm. Several pieces include interviews with contemporaries, in two cases personal friends, and are written more as homage than history, but McCullough makes this clear from the beginning of each.

Structure

Brave Companions consists of a brief Introduction, seventeen "portraits in history," as the subtitle reads, and a topical index. Lamentably, there are no bibliographic notes, for McCullough certainly succeeds in whetting interest in those he writes about. The Introduction is of crucial importance to read first, because it explains how this compilation has come to be made, what it seeks to impart to readers, and defines McCullough's attitudes toward history and the researching and writing thereof. One must catch McCullough's enthusiasm to enter into the individual essays.

The essays, all previously published as magazine articles or delivered as speeches, are organized in five parts. Part 1, "Phenomena," includes three sketches, "Journey to the Top of the World" (about Alexander von Humboldt), "The American Adventure of Louis Agassiz," and "The Unexpected Mrs. Stowe" (about the writer). Part 2, "The Real West," includes two sketches (Chapters 4 and 5,) "Glory days in Medora" (about a young Theodore Roosevelt and the Marquis de Mores in the Dakota Badlands) and "Remington" (about the great painter and, with Roosevelt, preserver of the Old West. Part 3, "Pioneers," includes four sketches (Chapters 6 through 9,) "Steam Road to El Dorado" (about the building of the Panama Railroad), "The Builders" and "The Treasure from the Carpentry Shop" (both about building the Brooklyn Bridge), and "Long-Distance Vision" (about pioneer aviator/authors). Part 4, "Figures in a Landscape," includes four sketches (Chapters ten through thirteen) about contemporary figures McCullough knows personally, "Cross the Blue Mountain" (about author Conrad Richter), "The Lonely War of a Good Angry Man" (about Harry Caudill's efforts to slow strip mining's destruction of the Appalachians), "Miriam Rothschild," and "South of Kankakee: a Day with David Plowden" (about the famous photographer, McCullough's old friend). Finally, Part 5, "On We Go," consists of four meditations on the legacies of American history (Chapters fourteen through seventeen,) "Washington on the Potomac" (about the wonders of the capital city), "Extraordinary Times" (a sweeping survey of the half-century beginning in 1936), "Recommended Itinerary" (a commencement address to the Middlebury, VT, class of 1986), and "Simon Willard's Clock" (an address for the bicentennial of the U.S. Congress).

Quotes

"So it was the young man himself, not a reputation, and the story he had to tell that captivated everyone. After nearly five years he had returned from one of the great scientific odysseys of all time. It was a journey that would capture the imagination of the age, but that has been strangely forgotten in our own time. It is doubtful that one educated American in ten today could say who exactly Humboldt was or what he did, not even, possibly, in Humboldt, Iowa, or Humboldt, Kansas. Perhaps this is because his travels were through *Spanish* America. Perhaps his extraordinary accomplishments were simply overshadowed by the popular impact of the Lewis and Clark expedition. In any event, his was a journey of enormous scientific consequence (far more so than the Lewis and Clark expedition) and a fascinating adventure by any standards." Part 1, Chapter 1, pg. 5.

"And thus it was in 1846 that he embarked on the very different new life which, ironically, had never been part of his plans. He was almost forty. His major contributions to science, as such things usually are judged, were also behind him. Prolific as he was to remain, nothing published afterward would come up to the earlier works; there was to be no further daring leap of the imagination to compare with his glacial vision. "Yet, as a colleague was to write years later, 'A great adventure it turned out to be, lasting until death, and one that put America permanently in his debt.'" Part 1, Chapter 2, pg. 21.

"People are still trying to interpret the book and to explain just how and why she came to write it. At first she said she really didn't write it at all. She said the book came to her in visions and all she did was write down what she saw. When someone reproached her for letting Little Eva die, she answered, 'Why, I could not help it. I felt as badly as anyone could! It was like a death in my own family and it affected me so deeply that I could not write a word for two weeks after her death.' Years later she stated categorically, 'God wrote it.' And a great many of her readers were quite willing to let it go at that." Part 1, Chapter 3, pgs. 42-43.

"His terrible problem was that the adored other days of the West were to be found no more, though he kept trying. 'Shall never come west again,' he wrote to Eva during one trip. 'It is all brick buildings - derby hats and blue overalls - it spoils my early illusions.' On a later expedition, a wilderness camping trip near 'Buffalo Bill' Cody's ranch in Wyoming, he barely survived a blizzard, too much whiskey, and a 'd---- old bed which made pictures all over me.' He couldn't wait to get home. 'Cowboys! There are no cowboys anymore!' he exclaimed." Part 2, Chapter 5, pg. 83.

"The Panama Railroad passed directly by here. (Traces of it can still be found some sixty or seventy feet beneath the calm, blue lake.) The surrounding wilderness could well be the same as the railroad builders faced, and especially when a rain squall sweeps over the distant jungle, blotting out the view, you try to imagine what manner of men they were, what quality of purpose spurred them on." Part 3, Chapter 6, pg. 104.

"But then, in the last analysis, one comes to something in these drawings impossible to catalog, that has little or nothing to do with however much biographical or technical background one might compile. It is the incredible care and concentration you feel in even the least of the drawings, the pride, the obvious love - love for materials, love for elegance in design, love of mathematics, of life, of light and shadow, of majestic scale, and, yes, love of drawing - this passion in combination with an overriding insistence on order, on quality, that we of this very different century must inevitably stand in awe before. You feel what these people felt for their work and you can't help but be drawn to them." Part 3, Chapter 8, pg. 123.

"'After this era of great pilots is gone,' observed Beryl Markham, 'as the era of great sea captains has gone ... it will be found, I think, that all the science of flying has been captured in the breadth of an instrument board, but not the religion of it. ... And the days of clipper ships will be recalled again - and people will wonder if clipper means ancients of the sea or ancients of the air.'" Part 3, Chapter 9, pg. 130.

"I saw him last in Pine Grove three months before his death. He had been bothered by heart trouble but looked fine. He was born on October 13, 1890, and 13 was a number he liked. The number he did not like was 30, which in newspaper work is used to mark the end of a story. He died of heart failure in 1968, on October 30." Part 4, Chapter 10, pg. 144.

"I grew up in Pennsylvania, where I lived near strip mining much of my life, but I have never seen anything like the strip mining in eastern Kentucky. It is beyond belief, and sickening." Part 4, Chapter 11, pg.147.

"We get out, and the wonderful smell is nearly overpowering. I hear an airplane faintly in the distance. Otherwise there is little or no sound. Again we can see for miles, the roads running off exactly to the four points of the compass. We are immersed in corn smell and silence and Illinois summer. A mile up the road the sun is hitting what must be a metal barn roof. In nature there are no straight lines, I seem to remember reading somewhere, and here everything runs straight - roads, fields, roof lines - yet you feel an elemental force in the corn itself, as if the land has never really been tamed." Part 4, Chapter 13, pg. 186.

"The second observation is really a question: Why do so many politicians feel obliged to get away from the city at every chance? They claim a pressing need to get back to the real America. To win votes, many of them like also to deride the city and mock its institutions. They run against Washington, in the shabby spirit made fashionable in recent presidential campaigns. It is as if they find the city alien or feel that too close an association with it might be somehow dishonorable. It is as if they want to get away from history when clearly history is what they need, they most of all, and now more than ever." Part 5, Chapter 14, pg. 208.

"These are the sobering facts of our much reported, but imperfectly understood, present. What will future historians make of it all? Maybe little of this will figure as large as we might expect. Maybe the critical event of the era will be the rise of Islam or the

new theory that all matter is composed of strings. Or maybe it will be something going on about which e know no more than was known of Peenemunde in 1936." Part 5, Chapter 15, pg. 218.

"We have not had a president of the United States with a sense of history since John Kennedy - not since before most of you were born. It ought to be mandatory for the office. As we have a language requirement for the Foreign Service, so we should have a history requirement for the White House. Harry S. Truman, who never had the benefit of a college education but who read history and biography and remembered it, once said, 'The only new thing in the world is the history you don't know.'" Part 5, Chapter 16, pg. 222.

Topics for Discussion

Which president mentioned in *Brave Companions* do you think McCullough most admires? Why do you think so? Do you agree?

Should there be a history requirement for the presidency, as McCullough jokingly suggests? How might it improve things?

Why is Frederick Remington so bitter about his changing world?

What are the sources of American hubris? What can be learned from disasters like the Appalachian strip mining, Challenger, and Times Beach, MO?

How does Harriet Beecher Stowe view religion?

How does the California Gold Rush impact Panama?

What do Washington Roebling's signed drawings say about his personality? How is this seen in his career?

How does Charles Lindbergh's views evolve over time?