

INTRODUCTION
A BIRD OF PARADISE

His buoyant personality dominated his whole career. Gay, versatile, debonair, irresistible, gentle, honorable, "tender and true," he was greater and dearer than his work.
—Rossiter W. Raymond

The mid-nineteenth century was probably the most dynamic and promising era in U.S. history. It was a time that witnessed phenomenal overland migration, driven by the breathtaking expansion of the nation's boundaries, which provided land for the taking, and by the lust for gold and other precious metals, which promised wealth beyond imagining. And as steamships replaced sailing ships, and railways replaced ox- or horse-drawn wagons and coaches, the migration became a stampede. All the while, powerful concepts and tools—Darwin's theory of evolution, the climactic discovery of many of the chemical elements, the formulation of crucial laws of physics, the introduction of photography and the telegraph, and much else—were catapulting natural science and technology to the forefront of popular imagination.

Clarence King, a man for all seasons, was ideally suited to the challenging work of a scientist in exploring and mapping the vast unknown reaches of the American West, and in assaying the region's natural resources. He had been an exceptional student at Yale College, the first and most prestigious scientific school in the country. He was gifted with an athletic build and great physical stamina, a photographic memory, diverse intellectual competencies, an instinctive sense of leadership, and a diplomatic and gracious manner. Enamored of the wilderness, he struck out for the open country immediately after graduation, just as the Civil War was drawing to a close and much of America was turning west. King, born and bred in the East, made his career

and fame in the West, and then reentered eastern society and politics, moving seamlessly through the disparate worlds of academia, the frontier, Indian encampments, the parlors and smoking rooms of high society, and the seats of power.

In his younger days, King had become an accomplished athlete, excelling at running, horseback riding, ice skating, rowing, and about anything else he put his hand to. In the West he fearlessly—some might say recklessly—hunted dangerous game when provisions were running low, on one occasion riding into a buffalo herd and killing a prime bull with a single revolver shot, while pinned under his own horse. Another time, he shot a grizzly bear after tracking it to its den and crawling in after it.

After apprenticing as a geologist for three years with the nascent California Geological Survey, initially without pay, King went to Washington to seek support for his own ambitious survey. Enthusiastic and persuasive by nature, he was able to secure the necessary approvals and funding, not only by dint of his rich experience in the high country of California, but also because of his personal charm and his close friendships among influential people. In 1867, at the age of 25, he was appointed Geologist-in-Charge of the Geological Exploration of the Fortieth Parallel, a survey of his own devising charged with mapping and studying an 800-mile long, 100-mile-wide strip across Nevada, Utah, Idaho, Colorado, and Wyoming. This expanse, which included the route of the not yet completed transcontinental railroad, stretched from the California boundary to the east flank of the Rocky Mountains. King had superior assistance in organizing and executing this work, always choosing well-qualified, well-rounded young men as his companions. Salient among his eager associates was his boyhood friend and Yale classmate, James Gardner, a skilled engineer who took charge of the critical topographic mapping for the survey, with great ultimate success.

In 1867, the exploration of this vast and remote rocky region was not without its trials and dangers. King had several near fatal encounters with hostile Indians, bandits, and army deserters, made scores of perilous mountain ascents, was struck by lightning while making measurements on a high peak, endured feverish weeks on alkaline water in the desert, and suffered the icy storms of the high mountains.

This far-flung endeavor, deemed near impossible by many, lasted 12 years and produced superb maps and a cornucopia of scientific monographs that subsumed geology, geography, paleontology, botany, zoology, and mining technology. The scientific community was stunned by the breadth and productivity of the enterprise. The field methods, published scientific reports, and maps resulting from the Fortieth Parallel Survey set new standards for such work, both domestically and abroad, and were quickly emulated in detail by other surveys that followed.

King demonstrated his creative and innovative bent in all aspects of this work, which was the first of the great mapping surveys—both topographic and geologic—undertaken in western America. He accomplished the task by dividing the subject area into a series of rectangles and then surveying them one at a time, all the while examining, sampling, and identifying the geological features of the land and positing their underlying origins. In crafting precise maps of such enormous areas, King and Gardner pioneered the use of elevation contours to portray the details of topography. This was possible only because they realized the critical importance of elevation control, and developed methods to measure land elevation quickly and in many places. On matching maps they depicted the diverse geologic units by the use of bright colors, and set out geologic cross-sections showing the third dimension, to aid the reader in visualizing the mapped units and their structure at depth. King also pioneered the use of photography in field studies, and set up laboratories to analyze rocks, ores, and waters. By bringing a distinguished German microscopist to this country, he fostered the microscopic study of minerals and rocks in America.

King was the first to describe the former course of glacial ice in the Yosemite region, and was the first to discover active glaciers within our nation's boundaries, thus opening the study of glaciology in the West. He unearthed evidence to support the notion—an idea theretofore considered heretical by scientists—that great natural catastrophes had helped shape the American geologic landscape, and had punctuated the course of biologic evolution. His popular book on mountaineering was considered the cornerstone of a new school of western literature and continues to captivate readers today. King's globally heralded exposure of the great Diamond Hoax in Colorado, triggered by the suspicions of his men in the field, saved investors millions of dollars, and made his reputation as an honest and resourceful public servant.

King was a gifted conversationalist and storyteller, his voice deep and natural, his repertoire rich, incisive, and singular. His sense of humor, thriving on double meanings and puns, was infectious. His companions in the field always anticipated his return to camp after an absence, because the good humor he bestowed on all hands seemed to dissipate their petty grievances and complaints. Aware of the privations of fieldwork in the remote western reaches, he ran comfortable camps with good food wherever possible, and even made an attempt at some formality while dining. Men rallied about him, and his natural ability as a leader—and his discerning selections of staff members—engendered a strong morale in all the surveys he led.

King belonged to a class of his own. Henry Adams—professor of history at Harvard, editor of the *North American Review*, and son and grandson of presidents—commented that Clarence King continually captivated and delighted him. Adams

wrote glowingly that King knew more than he did about “Art and poetry; he knew America, especially west of the hundredth meridian, better than any one; he knew the professor by heart, and he knew the Congressman better than he did the professor. . . . His wit and humor; his bubbling energy which swept every one into the current of his interest; his personal charm of youth and manners; his faculty of giving and taking profusely, lavishly, whether in thought or in money as though he were Nature herself, marked him almost alone among Americans.” He was like “A bird of paradise rising in the sage-brush.”¹ John Hay, then Secretary of State, remarked that “the dazzling attraction of his personality won him fame that spanned the Atlantic.”²

Both these men, like so many of the scientists he worked with in the field, became King’s lifelong friends. He enjoyed people. His freedom, following a failed engagement to a young schoolteacher he had met in Virginia City, unleashed considerable female attention in the social circles of Washington and New York City. But although he reveled in the popularity, he was not attracted to what he considered the tradition-bound, seemingly affected and artificial, Victorian women of his own class. Instead, he was drawn to, and felt comfort with, natural, unaffected, dark-skinned women. He was interested in the arts and cultures of other peoples, and enjoyed making modest conversation with older Mexican or Indian women in their villages or camps, and was clearly attracted to younger women from simpler cultures. His liaisons with Indian maidens, and with young working women in Cuba, Hawaii, Central America, and Mexico, were legion.

So it was that at the age of 44, he met and was smitten with a young black woman who cared for the children of his host at a New York dinner party. The relationship became intense, and he secretly married the young woman shortly thereafter, to begin an amazing 15-year duplicity in which she bore him five children. Living a double life for the rest of his days, he led his friends to believe that he was a bachelor, and his wife, ensconced in a home in Brooklyn, believed he was a railroad porter by the name of James Todd, whose work required long periods of absence.

When the four federally funded surveys in the West were consolidated into a single bureau, the obvious candidate for its leadership, and the one selected by President Rutherford Hayes—with the advice of the scientific luminaries he consulted—was Clarence King. In 1879, at the age of 37, he was appointed the first Director of the U.S. Geological Survey. King’s genius and farsightedness, his collegial and inspiring leadership style, good humor, and lofty standards of excellence are reflected in the scientific organization that he conceived, organized, and led to global preeminence. He was acutely aware of the virtue of hiring the brightest and most qualified young men for his agency, and was innovative in advocating and employing the newest scientific and

cartographic tools and techniques. The U.S. Geological Survey has since served as an exemplar for the establishment not only of federal and state scientific agencies, but also for similar institutions in other countries.

Clarence King is embodied in the aphorism that great institutions are often no more than the shadow of a single individual. Few have known such accomplishment. Fewer still have led lives so rich and beguiling.