The Spanish-American War of 1898 was a watershed in the historical geography of U.S. expansionism. The national and state boundaries of the United States were effectively in place, even though several territories had yet to consummate statehood, and the geographical claims that resulted from the war were less about national consolidation than international colonization. These were, of course, closely intertwined pursuits, but their geographical consequences were very different. Unlike earlier territorial acquisitions, such as northern Mexico, Alaska, and the Louisiana Purchase, all of the territories wrested from Spain after 1898 were held in some form of colonial possession, never to be incorporated fully into the nation-state. This marked the first and last serious foray by the United States into extraterritorial colonization. Thereafter, U.S. expansionism took an increasingly geopolitical rather than colonial form. The Spanish-American War therefore represents an anomaly, but it also marks the cusp of a radically different globalism. The symbolic dawn of the American Century, it just as vitally gave way to the first contours of a new global geography.

The year 1898 was also a watershed for the nineteen-year-old schoolteacher Isaiah Bowman. He made two important decisions. In the autumn he took his first independent political initiative. Enthused by the war frenzy, Bowman organized young men from three rural Michigan school districts, including his own, into a militia company of one hundred. He was promptly elected captain and arranged for a local carpenter to make "wooden guns,
real rifles not being available from the National Guard.” For two years, Bowman’s militia carried out military training, studied the manual of arms, and performed simple maneuvers and field exercises. They attracted a lot of local interest, but as the fervor for “the splendid little war” receded, he transferred his interest from the militia to the organization of a debating club. Now as later, Bowman’s life was led at the intersection of geography and politics; intellectual and political initiatives were always closely connected.

No doubt influenced by adventurous reports from the war’s various outposts, Bowman also made his “first definite plan to follow geography” as a career, his second decision, which ultimately freed him from the spartan, isolated, harsh, often oppressive rural upbringing of his early years and introduced him to a more worldly life of science and academia, politics and foreign policy. A child of the recently settled frontier, geography for Bowman represented freedom, and rewriting this equation of geography and freedom on a global scale became his life’s work.

BROWN CITY

Isaiah Bowman was born on 26 December 1878 in Berlin, Ontario. His paternal ancestors were Swiss Mennonites, his grandfather was a teacher turned preacher, and his great-grandmother inspired his biblical name. Both sets of Canadian grandparents were “well-to-do,” but their legacies were divided “rather finely” among large families. His father, Samuel Cressman Bowman, turned from teaching to farming in order to make a better living for his own growing family. In the depths of a particularly inclement winter but spurred by the needs of a spring sowing, the elder Bowman moved an eight-week-old Isaiah and his two sisters, aged two and four, by horse-drawn sleigh, along with all the family belongings, to a 140-acre farm and log cabin in Brown City, sixty miles north of Detroit.

Isaiah spent the next seventeen years of his life on and around the farm, where the daily rhythm was determined by the seasonality of work. The family grew to eight children, and the living was rough. The “downright necessity of infinite and incessant toil was a condition of even mean living,” he later recalled of his boyhood. “There were cows to milk, and fields to tend,” and by the age of ten he was fully capable of plowing the stony drift soil with a horse-drawn steel plow and helping to raise barns. The family “had almost no money,” and eggs, which usually went to town to pay for groceries, were a luxury eaten only once a year— at Easter—when the family allowed themselves all they wanted. He collected fruit and berries in the surrounding woods and thickets, caught eels in the creek, built a raft with the earnest intention of exploring the distant Mississippi, and went on winter sledding trips. There was some interaction with neighboring farms, especially at Sunday church picnics, but this too varied with the seasons. On one occasion, a friend unearthed an “Indian skeleton,” and this provided them days and weeks of fantasy play. Evenings were often spent huddled in blankets by the stove, eating apples, and listening to the father’s sonorous stories of his own youth or reading “Indian stories” or the frontier exploits of Daniel Boone.

Hard work and religion were formative impulses in Bowman’s life, and both were sternly administered. Having come from a family that was “strongly endowed with religious feeling and a sense of duty and responsibility,” Samuel Bowman was an “exceedingly strict disciplinarian,” not the kind of person one got close to. His son responded with a mixture of resentment and distant respect. The merrier temperament of Isaiah’s mother, Emily (Schartz) Bowman, provided some respite, and they shared a special empathy. He accumulated an ordinary farm boy’s intricate knowledge of the environment and its workings, and his mother encouraged an early passion for book learning. At the one-room country school a mile and a half from the farm, he revered the intellectual discipline, though the education was basic. When he suffered from “nervousness and frequent nightmares” at the age of seven, he was temporarily taken out of school on the doctor’s advice (he “read too much”). However, the availability of books from his older sisters and their excited after-school talk about “the settlement of America and the Indian battles, massacres and ways of life” only encouraged more reading. He hid books under the front doorsteps and would take them to read behind the lumber pile. He was thrilled by a biography of Alexander of Macedon and by Stanley’s In Darkest Africa; in Captain Cook’s Voyages he read the dry abstractions of reported latitudes and longitudes as a boy’s dreamy world of unbounded travel and adventure.

Gender roles were clearly allocated. Bowman always considered himself to be a Son of the Middle Border, to use the title of the Hamlin Garland book that impressed him in later life. Beyond the social and geographical triangle of farm, school, and Brown City, he barely traveled as a child or an adolescent, although his forced sabbatical from school allowed a single trip with his father back to the Ontario grandparents. His grandfather’s “heavy eyebrows, high forehead, and deep voice”—physical traits the grandson would inherit in softer form—made a strong impression; his “Bowman voice”... shook the rafters.” Even when he was pulled out of school to work on the family farm, with the onset of the 1893 economic crisis, and after embarking on his own teaching career in 1896, Bowman remained in neigh-
boring St. Clair County, only a few miles to the south, where he passed the
teachers' exam.\footnote{7}

Teaching gave him access to books, but otherwise the experience scared
him with a harsh sense of discouragement, even failure, and crystallized in
him a cautious conservatism that became a lifelong trait. Weighing 125
pounds, measuring five feet three inches tall, and awkwardly adolescent at
seventeen, he was hardly distinguishable from many of his students. He
seems to have had unrealistic expectations and, in compensation for his
slight stature, carried an inherited sternness into the classroom. He ran
afoul of parents he antagonized. The job "produced too great a sense of re-
ponsibility" in one so young, he lamented bitterly to Eleanor Roosevelt
half a century later.\footnote{8}

His early teaching was also discouraging in a second, more immediate sense.
Even for the period the salary was low—$19.50 per month rising in four years
to $35. The family was caught in the precipitous recession of 1893–97, and he
gave his father anything left over from his meager living expenses. After four
years of teaching, "when most boys are finishing college," he quibbled, his
country school training had not given him a systematic preparation in many
subjects, and he had no savings to further his education.\footnote{9}

There were bright spots, however. He did have time to study, and a re-
tired sea captain who owned a local grocery store took him under his wing,
teaching him geometry and navigation several nights a week. Bowman had
no way of knowing that this training would be instrumental years later
when he was called on to evaluate Robert Peary's claim to have reached the
North Pole. But it was his mother's encouragement that he remembered
with uncharacteristic fondness, especially the occasion when she picked up
a couple of stray metamorphic rocks on the farm and puzzled aloud how
they were made and how they got there. Perhaps her son might get an ed-
cuation and explain such mysteries to her, she mused. Bowman never for-
got his mother's prompting. Nor did he forget the glow of pride he felt
when, having received an A for drawing his first school map, his mother's
approval came with the prediction that geography would be his favorite
subject.\footnote{10} Whether dutifully or independently, Bowman came to follow his
mother's wish for his education, but she had to push him one more time to
make a college career happen:

One day my mother came out into the yard where I was chopping
wood and the look of concern on her face was so marked that I asked
her what the trouble was. She answered me by saying, "Son, I am wor-
ried about you. What are you going to make of your life?" I replied
that I did not know, because I was nearly twenty-two years old and

without any means for continuing my education. She asked me what it
was I wanted to do, and I told her I wanted to go to college but that
such a plan was out of the question. Her comment was, "If I were a
young man of your age and had your strength and interest in intel-
lectual work, I would go to college."\footnote{11}

FROM YPSILANTI TO HARVARD YARD

As soon as the snows cleared after his twenty-first birthday, Isaiah Bow-
man took himself off to the county seat, Port Huron, and became a U.S.
citizen. In the autumn of 1900, having saved some money for expenses and
with a loan of several hundred dollars from an inheritance his mother had
received, Bowman registered at the Ferris Institute in Big Rapids. He had at-
tended Ferris summer school the year before, but this time he returned for
a full year of college preparatory training. He had seven dollars in his pocket
when he arrived, sustaining himself in part by additional teaching. The in-
stitute had long wanted to teach military drill, but not until Bowman turned
up, fresh from the Brown City militia, was a qualified instructor on hand.
Although he was a good four years behind his contemporaries, he felt that
at least his teaching experiences had taught him the habits of disciplined
study, and for the first time he felt free to devote himself to a frenzied pur-
suit of knowledge. He took eighteen courses that year, including Latin, Ger-
man, political economy, rhetoric, geology, botany, algebra, geometry, phy-
physics, and chemistry, but he specialized more fully in history and geog-
raphy. He graduated with a record average of 96 percent.\footnote{12}

Among his teachers was a young Harlan H. Barrows, whose introduction of
"human ecology" to geography in the early 1920s would help build a
stronger human geography in a U.S. tradition dominated by physical geog-
raphy. Bowman was even more impressed with one of Barrows's own teach-
ers, Charles T. MacFarlane, who presented a guest lecture at Ferris, motivat-
ing him to further his studies with MacFarlane at Michigan State Normal
College, in Ypsilanti.\footnote{13} The most enduring influence at Ferris was the broad
philosophical ambience of the institute. Transcendentalism was undergoing
something of a turn-of-the-century revival, and Bowman, influenced by his
Ferris teachers, many of whom were keen dabblers, felt that it "opened great
windows upon vast possibilities of self-improvement." Traces of this early
brush with transcendentalism survived into his old age.\footnote{14}

He arrived at Michigan State Normal in the autumn of 1901 and rented
rooms with a friend and fellow student at 123 Summit Street for $4.75 a
week.\footnote{15} MacFarlane had left in the interim, so Bowman began work with
his successor, Mark Jefferson. Fifteen years Bowman's senior and born into a literary family in Massachusetts (his father had met Emerson), Jefferson had specialized in land colonization and settlement patterns, having spent six years doing fieldwork and overseeing a sugar hacienda in Argentina. He had taken his first degree at Boston University and his M.A. at Harvard with the best-known U.S. geographer of the day, William Morris Davis. The most widely educated of Bowman's teachers so far, Jefferson, like Barrows, became a major force in developing a human side of the discipline. Bowman worked closely with Jefferson, focusing on physical geography, but he also picked up a grounding in physiography, glacial geology, and mineralogy as well as field, mapping, and teaching techniques. Toward the end of the year, Jefferson recommended that he work with Davis at Harvard if, the year after, Bowman would return as an instructor at Michigan State Normal.16 Bowman grabbed the chance. Barely out of Michigan, he now embarked on the biggest journey of his life, going east at the age of twenty-three. A geographic departure from home, it was equally an intellectual and social sojourn into a dramatically different world.

The ambition of becoming a geographer was itself daring. In the college system as much as in the country school of his boyhood, geography was less an intellectual pursuit in most places than a preparatory amalgam of factual information and related studies in physical sciences and social studies. The academic division of labor was still poorly developed, and although medicine, law, history, some of the humanities, and the basic sciences of geology, physics, chemistry, and biology now entered many academic curricula, the same could not be said of the so-called human sciences. "Political economy" still encompassed the majority of what would become the narrower disciplines of political science, sociology, economics, and demography. Psychology was in its infancy, more a clinical European pursuit than an American university subject, and anthropology was yet fairly amorphous; Franz Boas, widely seen as the founder of anthropology in the United States, actually received his 1881 Ph.D. in geography.

It was within this larger structuring of academic disciplines in the decades around the turn of the century that geography struggled for a discrete identity as the science of the earth's surface. It moved aggressively to distinguish itself from astronomy on one side and geology on the other. Like most emerging disciplines in the United States, it owed its intellectual roots to various European traditions, imported to the States largely through the older East Coast colleges and universities. The physical and anthropogeographical traditions of Germanic geography were especially influential. In 1848 the Swiss geographer Louis Agassiz, the first to propose a universal ice age and to argue for the importance of glaciers in sculpting the face of the earth, had come to Harvard. There he influenced a large number of students, including Nathaniel Southgate Shaler, whose interests in what today would be called geomorphology and biogeography encouraged the development of Harvard geography toward the end of the century. At about the same time, Agassiz's colleague Arnold Guyot, a student of the famous German geographer Carl Ritter and author of Earth and Man (1849), brought an almost mystical and teleological physical geography (including a human component) to the College of New Jersey, later Princeton University.17

Nineteenth-century U.S. geography was heavily physical in its roots but already distinguished itself from geology in its concern with human interactions in the physical environment. It was an intellectual import with the highest European pedigree, which, when called upon, could quite readily footnote classical scholarship to demonstrate its origins in and centrality to Greek thought, which was generally presumed to provide the basis of the Western intellectual tradition. In this, geography resembled most nineteenth-century sciences, exhibiting its own strain of what science historian Daniel Kevles has dubbed "best science elitism" or what George Santayana at the time called "the genteel tradition in American philosophy."18 Because it was still less a subject than an inchoate set of intellectual veins contributing to and drawing from various studies, geography was widely infused throughout the sciences, from geology and physics, mathematics and astronomy, to statistical and economic research.

But there was another, more practical and home-grown thread to U.S. geography: a grittier tradition paralleled the European pedigree of scientific elitism and philosophical gentility. Late-nineteenth-century American geography was also the tradition of John Wesley Powell, explorer and mapper of the arid West, one-armed veteran of the Battle of Shiloh, ambitious director of the U.S. Geological Survey in the 1880s, and a scrappy political fighter in Washington. Earlier there was the exploration geography of Lewis and Clark, inspired by the deeply geographical vision of Thomas Jefferson, and there was Matthew Fontaine Maury, who directed the U.S. Naval Observatory and whose Physical Geography of the Sea (1855) was widely lauded, not least by the aging Alexander von Humboldt, as a founding statement of oceanography. This practical tradition was primarily rooted in the land grant colleges in the country's interior, such as Michigan State Normal, where questions of climate and agriculture, soils and resource use, settlement and vegetation were the pragmatic currency of a geography education etched in the ruts and furrows of the westward European arrogation of the continent.
This uneasy mix of intellectual elitism and spunky pragmatism was a hallmark of the larger intellectual scene in the United States at the end of the nineteenth century, and it formed the scholarly milieu that an expectant but somewhat timid Bowman walked into when he enrolled in the Lawrence Scientific School at Harvard in the fall of 1902. His Michigan life disposed him toward the practical tradition, while his voracity for knowledge and ideas and a driving ambition drew him to the genteel. Harvard was the acme of that elite tradition, a central conduit for the importation of European ideas, and his teachers, especially Shafer and Davis, were steeped in it. They saw themselves in the tradition of scientists devoted to unlocking the secrets of the earth’s history, imprinted in its surface forms and processes. Bowman blossomed instantly, taking energetically to the work. He was overjoyed when assigned to assist the great German geomorphologist Albrecht Penck, who came to lecture at Harvard. At Davis’s behest, he had been reading Die Erde und das Leben, by Friedrich Ratzel, the old German geographer and father of anthropogeography, a field that straddled the still murky boundaries of geography and anthropology. With all the fresh naïveté of a young scholar whose learning almost keeps pace with his confidence, the Harvard senior enthused to his Ypsilanti teacher that those “old German boys make me realize that not all the geography is west of the Atlantic.”

Bowman’s relations with German geographers would eventually become highly combative, but there is no doubt that they were a primary influence on him in these formative years. Where Penck complemented the Davissian physical geography Bowman was imbibing, Ratzel gave him a way to think about humanized landscapes. Ratzel’s vision of national economy and population was largely agrarian, rooted in the assumption that an expanding national population inevitably implied colonization of the land and pursuit of agriculture. Bowman Americanized the vision, finding a means of connecting his visceral boyhood life with an American exceptionalism bound up in Frederick Jackson Turner’s lost frontier thesis. But Ratzel was also the author of Politische Geographie, which in 1898 effectively crystallized a new subfield in the discipline. A complementary strand of his argument, drawing on an analogy from plant ecology, held that all human groups and institutions—nations, states, peoples (Völker)—were intimately tied to the land they occupied and had to grow to survive. Or, as Ratzel put it, they needed “Lebensraum”—living space.

Ratzel’s theories were highly influential throughout the academy, and his concept of Lebensraum came to play a dubious but very public role several decades later. His geography was umbilically tied to the mission of nation-state building in imperial Germany after 1871. Bowman constantly translated Ratzel’s view of geography into the U.S. context and was sufficiently influenced by this conservative German theorist that a Ratzel biographer many years later named Bowman as the only geographer who shared with Ratzel such a comprehensive grasp of political geography.

But all this lay well in the future. In addition to the rarified heights of European intellectual thought, the Lawrence Scientific School and the geography tradition at Harvard were equally a product of the more homegrown, applied scientific tradition. Now dean of Lawrence, Shafer had become a renowned patriarchal presence in Harvard Yard; his lectures were always crammed, his reputation mythical. Precisely because of their more practical bent, both the Lawrence School and geography were habitually viewed with suspicion by the stuffy elite of Harvard’s senior professoriate and administration. William Morris Davis was especially targeted for his sometimes lowly concerns: he had cut his teeth in western fieldwork; took the lead in founding a professional association (the Association of American Geographers) in opposition to the increasingly popular focus of Alexander Graham Bell’s National Geographic Society; led the crusade for a discipline of geography independent of geology; and spent a lot of time promoting geographical teaching in secondary schools as well as in colleges and universities. The zoologist Alexander Aggasiz, son of the glacial geologist and arch-defender of the elite scientific tradition, was generally scandalized by Davis’s commitment to such activities, and the last straw, which provoked a bitter complaint to the president of this all-male university, came when he stumbled into a room where Davis was “instructing a class of women!” This combination of practical and more theoretical concerns is evident in Bowman’s coursework at Harvard; he took “Research Physiology and Paleontology” and “Astronomy” alongside “Mechanical Drawing” and “Advanced Geology Fieldwork.”

Arriving with Jefferson’s recommendation, Bowman was made to feel very much at home by Davis, but it was an alienating and “frigid” environment otherwise. Anything but a Harvard gentleman, he experienced class difference as viscerally real for the first time. Intellectually sparked, he was socially overawed, acutely conscious of being a complete outsider. Harvard’s stuffy upper-class presumptions were as alien as they were oppressive, not “a community where a poor boy” could participate in the social trappings of an elite education. Outside his work he never loosened up. He fueled furnaces, shoveled snow, and cut grass to get by and participated hardly at all in student life: “shyness and poverty” prevented him from even joining the Union; he never attended class meetings; and he refused social invitations because he lacked anything formal to wear except for the
one worn suit he used daily. Virtually a teetotaler for much of his life (in later years he admitted to having occasional “thimble of sherry”), he was clean living to a fault, a stranger to the frivolity of the party and tavern scene of undergraduate life, and rued the lack of college fun in later years. Franklin Roosevelt, with whom he later worked closely, was in the class ahead of him: the much exalted class including T.S. Eliot, John Reed, and Walter Lippmann, a little behind him. Often dour, periodically lonely, and subject to “deep and dark moods,” Bowman found he was as alienated from the socialist politics of John Reed and the social liberalism of Lippmann or Roosevelt as he was from the class privilege they all seemed to share and which weighed so heavily on him.26

The disjuncture between Harvard Yard and Brown City was surely made even more real when he returned to a familiar Michigan in 1903, as agreed, to teach for Jefferson. He saw his family during this year, of course, but gives little sense of having gone home or of seeing his future in Michigan. While making notes for an autobiography four decades later, he toyed with the title “Free and Twenty One,” indicating the depth with which geographical and intellectual freedom were intertwined; going east was a life-altering escape. He never again spent much time in Brown City or indeed with his family. Whether no letters existed or he expunged them, his voluminous correspondence reveals none to or from his parents. He was never tempted to do anything else but return to Harvard, which, for all its social frigidity, was an intellectual cornucopia. Not even a lucrative job offer from the U.S. Geological Survey (USGS), with whom he had worked on a Long Island groundwater study in the summer of 1903, could lure him. After leading Jefferson’s summer field courses around Lake Huron, he returned to Cambridge on a $150 scholarship for normal school students, less than a third of his Ypsilanti income.27

Bowman came alive in the Lawrence Scientific School and in his long absorbed hours in the library. He soaked up the intense atmosphere of the relatively informal Harvard Geological Club, which met most Friday evenings at the home of a faculty member and where the idea for the Association of American Geographers, founded in 1904, was first floated by Davis. The few friendships he developed all involved students in geology or geography: J. Walter Goldthwaite, Ellsworth Huntington, Henry Baulig. Only when animated did his “million-dollar smile” break out.28 He wrote Jefferson constantly during his Harvard years, treating him very much as an intellectual father, but it was Davis’s influence that would be decisive. “Never before, in so short a time,” he reported at the beginning of his first Harvard year, “have

I grown so much or in so many directions... I find the work exactly suited to my needs. It is encouragingly difficult.”29

EVOLUTIONARY THEORY AND PRACTICAL IDEALISM

One Harvard course in particular was crucial for Bowman’s future work. As an undergraduate he joined Davis’s graduate seminar, which he found “the most critical and stimulating exercise” he had ever had “next to Geometry.” He was dispatched to investigate a range of physical geographical problems, from glacial lakes to the effect of the earth’s rotation on the deflection of river courses. His first published paper, in Science, grew out of this work. “Deflection of the Mississippi” compared maps of the river course, made thirteen years apart, and sought empirical evidence of the widely accepted theoretical argument that the earth’s rotation leads to asymmetrical bank erosion.30 The results were inconclusive, and the paper a minor contribution at best, but it already displayed the Davisian impulse to connect theory and measurable empirical change in the landscape. It was also untypical in the sense that it was not based on fieldwork, although it did conclude with a record of Bowman’s Michigan research with Jefferson and his summer on Long Island. Over the next few years he published several other fieldwork reports on river dynamics and preglacial coastal deposits, also emanating from the broad survey of physical processes Davis demanded, and they demonstrate a methodical respect for physical processes, if no special intellectual verve. The direction of Bowman’s own research interests in physical geography was not yet clear.

He was learning more than method from Davis, and the focus on rivers was not accidental. Davis is best known for the theoretical innovation marked by his 1899 “geographical cycle,” which became the central theoretical edifice of physical geographic theory for the next half century. He posited water as the central geomorphological agent. On the basis of earlier research by Powell and his own fieldwork in Montana and the Appalachians, Davis argued that all landforms could be understood as the function of three variables: structure, process, and time. Structural uplift and the processes of fluvial erosion and deposition combine over time to produce an “ideal geographical cycle”: as a result of uplift, river gradient is steep and erosion is intense, but across geological time, erosion reduces the gradient until eventually deposition becomes the pivotal process of geographical change. Rivers and landforms evolve through a sequence of stages—youth, maturity, and old age—and rugged mountain ranges are ground down to
level peneplains, awaiting renewed uplift and the recommencement of the whole cycle. Historical and geographical change are closely correlated, as Mackinder might have put it. Davis recognized variations in this ideal cycle: wind and glaciers were also powerful geomorphological agents, and structural irregularities and climatic change might interrupt or otherwise affect the cycle. In his assistantship connected to Davis’s course “Physiography of the United States,” Bowman explored this theoretical material in the context of a regional survey.

Davis was a grandson of the abolitionist Lucretia Mott and inherited his Quakerism from her. But he is more widely remembered as the progenitor of a “scientific” geography in the United States as well as the teacher of an unprecedented group of early-twentieth-century geographers. His insistence on the need for theory and a simultaneous dependence on empirically observable “facts” was central to the broad ambition for a scientific geography. What distinguishes Davis, in retrospect, is more the combination of these empirical and theoretical strictures with a secularization of physical geography. The tradition he inherited drew directly from eighteenth-century natural theology, carried forward by Ritter in Germany and Guayot at Princeton, among others, in which natural and cultural changes are mediated by religious teleology. Nature, culture, and god represented mutual expressions of each other. Ratzel among others had attempted to displace the religious teleology in physical geography, but his organic vision retained a teleological spiritualism of its own. Davis deftly subordinated “the Darwinian theory of evolution for the teleological interpretation of German natural philosophy,” opening the way for a twenty-century scientific geomorphology. The sureties of Darwinian evolutionary theory brought their own whiff of teleology, but this was deemed compatible with, rather than antagonistic to, science.

“Physiography” increasingly became Davis’s notion of physical geography. This was a late-nineteenth-century notion, dressing physical geography in scientific garb at a time when “physical geography” still carried connotations of theistic agency. When Bowman arrived at Harvard, Davis’s enthusiasm for physiography was at its peak. He emphasized process over form, the specific geographical processes producing landforms and landscapes, thereby also decentering the descriptive, mathematical abstractions of astronomy that had undergirded the elite tradition of East Coast geography to that point. With Davis’s influence, “geomorphology became more the study of the origins of landforms than of landforms themselves,” and physiography came to represent an Americanization of physical geography, the early efforts of Thomas Huxley notwithstanding.

So completely did Bowman learn Davis’s thinking in this period that some of his writings of the time “read almost as though Davis himself were the author.” Thus it is hardly surprising that he also imbued from Davis a pervasive if largely implicit evolutionism. Indeed, the philosophy of science he learned with Davis might reasonably be thought of as an evolutionary idealism—a belief in the hard-won, progressive development of ideas verifiable through a strict positivism. Bowman believed that evolutionary theory itself had evolved to maturity. There was a continuum from Greek and Roman thought to the present, he came to argue, but “only as late as our time could the principle of evolution be so variously documented that the idea became accessible and interesting to all men, not the vision of a few.” Science too is ancient and has likewise evolved to the point where today we can recognize it as science, and in that sense it provides universal access to nature. Science involves “empirical observation, limited analysis and generalization, confrontation of theory (idea) with fact, as well as revision or modification (with much myth and nonsense built in too).” The methods of science may not always have been clear or systematic, cause and effect might be wrongly ascribed, but science provides privileged access to truth and yields a progressive increase in knowledge.

Half a century earlier, this combination of ideas might well have been prohibitively incompatible with prevailing religious beliefs. But the mature Bowman was a secular Christian, a believer in god in the abstract. Any antagonism between religion and science (including evolutionary theory) seemed increasingly arcane, and quite unlike Shaler’s science, for example. Bowman’s was thoroughly abstracted from his religious inclinations. Whereas Shaler’s evolution “became a kind of teleological tool for reconciling nature, humanity, and God,” Bowman inherited the evolutionism without any need of displacing an already displaced god.

Shaler’s influence on Bowman was nonetheless crucial, although often underestimated compared with Davis’s. He attended lectures by Shaler as well as Davis, and when he received the first offer of a U.S. Geological Survey (USGS) summer job in 1903, it was Shaler who advised him: “I can save you words, Bowman, I can save you words. You go—go to that larger school of earth science—the Survey, and good luck to you.” Shaler had been Davis’s teacher ever since the latter arrived at Harvard in 1876, and he had personally gone through the evolution wars. Bowman’s evolutionism was largely assumed and rarely doctrinaire, more a binding glue for his political and physical geography than a driving passion. It was much weaker than that of his intellectual ancestors, and its provenance, now filtered through at least two generations of post-Darwinian geographers, was vague. A stu-
dent of Louis Aggasiz, who strongly opposed Darwin in the 1860s, Shaler had become increasingly convinced that his own teacher was wrong and that Darwinian evolution made a lot of sense. At the beginning of the new century Bowman’s was a more emulsified evolutionism.

Bowman was proud to have attended lectures by some of the star Harvard professors of the day, including pragmatists William James and Josiah Royce, and in English, George Kittredge and Charles Copeland, and Shaler’s broader intellectual interests complemented these influences. Bowman became involved in many of the same social and political aspects of geography that preoccupied Shaler’s later years. A “geologist by profession, but a geographer by inclination,” Shaler was a crucial bridge between the physical and human aspects of late-nineteenth-century geography. He became outspoken and quite xenophobic on questions of immigration, race, and resources. Davis was far from unaware of the social aspects of geography, having early on admonished an as yet uncompromising Mark Jefferson to go and “find out what a City is. . . . No one seems to know.” But in suffusing his human geography with an evolutionary ethos, Bowman was following Shaler as much as Davis.

From his Ferris Institute days, Bowman was primed to absorb another influence of Shaler’s. A poet as well as a geologist, Shaler lived on the margins of both pragmatism and late-century New England transcendentalism. With various of his Harvard colleagues, he shared the pragmatist’s conviction that “observation and hypothesis formulation” combined with “experimentation and individualism” taught a body of knowledge appropriate for addressing real-life problems. The multiple strands of American pragmatism evolved in close dialogue with evolutionary theory and less obviously if more contentiously with transcendentalism. The scientist Shaler was equally “fired” by the metaphysics of the latter. Transcendentalism was inspired largely by nineteenth-century German literature and philosophy, most notably Kant and Goethe. Kant’s “transcendental idealism” in particular revolved around forms of knowledge derived not from empirical experience but from a priori conception. In the United States, and especially in early-nineteenth-century New England, transcendentalism took many forms, from the nature romanticism of Emerson to the “systematic subjectivism” of George Santayana (at Harvard during Bowman’s undergraduate years) and the broad-based spiritual challenge aimed at established Protestantism. Transcendentalists shared the belief that the emerging materialism associated with American capitalism was insufficient to lead a rounded life and that a higher spiritual reality pervaded nature and human knowledge.

Although pragmatism and transcendentalism may sound mutually contradictory to a later sensibility, Shaler, the scientist of earth history, saw no conflict. To find a spiritualism in the earth itself was not at all inconsistent with science; it was the whole point: materialism and spirituality could indeed be held together as if to offset each other. The intellectual dance between them marked demonstrative progress beyond the empirical-transcendental dialectic that had preoccupied Kant. From all this Bowman imbibed a more casual, modern, and airy philosophical constellation that was habitually translated into a more-activist contrast of realism and idealism:

The world of men consists of two parts: first, realities of custom, property, social relationships, partial adjustments to the resources and layouts of the regions in which we live, and a knowledge of these and many other things; second, ideals toward which we strive. Ideals are ideas not yet realized. They may denote the practical, material, and unsentimental things of life as well as the visions that yield spiritual nourishment.

The more contemplative spiritualism of Shaler is here transformed and updated into something much more practical. The spiritual is galvanized toward practical ends, placing Bowman firmly in the center of a reinvented American liberalism with direct roots in the eighteenth century. Idealism is useful; pragmatism is laced with transcendentalism. Nowhere was the pragmatist tradition stronger than at Harvard, where Charles Feirce, arguably the most influential of nineteenth-century pragmatists, once bemoaned the “horrid” contradictions that inhabited him: “Realist, Materialist, Transcendentalist, Idealist.”

Like Shaler, Bowman read poetry throughout his life and wrote it too, although none seems to have survived. He was keenly appreciative of the “Emersonian” style he detected in his earliest mentor, Jefferson; and he was sufficiently taken by the syrupy populism of his contemporary Joyce Kilmer that in later years he kept a copy of the nature-idolatrous “Trees” in a place of honor in his desk. Transcendentalism indeed. A harder-headed Bowman also insisted that the ideas of science, like those of democracy, were based on experimentation. Of all the patriotic American figures, he revered Thomas Jefferson above all, who was, he said, a “practical idealist”: “It was the combination of the practical and the ideal that gave an individual stamp to the thought and practice of Jefferson.” Indeed, Jefferson “coupled ‘freedom and science’ as conditions of progress.”
It is tempting to elevate this struggle between pragmatism and idealism as the subtext of Bowman’s later life, and there is much evidence for doing so. But it is too simple a dichotomy and provides too superficial a portrait. The mature Bowman’s idealism was deployed pragmatically, and his pragmatism equally rose to an ideal that he strained to find in others. What he absorbed at Harvard was an evolved transcendentalism and pragmatism that provided him with a flexible array of intellectual options in the service of political strategy. His description of Jefferson as a practical idealist could therefore be applied perfectly to Bowman himself. As Henry May has argued, given “the large, vague limits of practical idealism it was possible to be mostly practical or mostly idealistic as long as one maintained some touch with both qualities.”

YALE AND THE “FOREST PHYSIOGRAPHY”

Still quite unsure about what future he would pursue, Bowman secured a schoolteacher’s certificate for Michigan public schools during his interim year at Ypsilanti. Warned by Davis that there were no jobs for geographers, he took the civil service hydrology exam in the spring of 1905 before completing his Harvard degree and finished at the head of the list. After graduating from Harvard, he went straight to work for the USGS. For the first time in his life, he had the chance to travel—to the South (Charleston Harbor, South Carolina) and the West (Dallas). He wanted to visit the Grand Canyon, which played such an important role in nineteenth-century physical geography, but was unable to do so. He had been offered five hundred dollars in scholarships to continue at Harvard on graduate work, but feeling the need to make more of a living if he was going to do a doctorate, he took a summer school assistantship at Yale. With a faculty member ill, he was soon offered a full-time instructorship, and Yale became his home for the next ten years.

In contrast with Harvard, he found Yale “friendly in a warm and personal sense.” Though still young looking and hardly over five feet six inches, he was now unambiguously part of the faculty and responsible for his own courses. Davis took the time to pen him a letter, sending him on his way as he embarked on a geography career and offering advice about teaching, research, the importance of contacts, and the niceties of polite society. He took a singularly paternal tone unimaginable from Bowman’s father: You “must not neglect either healthful exercise or social relations.” Davis felt impelled to advise. And “be sure to make your ‘duty call,’ after any invitation to dinner or the like, promptly,” he continued. “Dress up proper, stay a little while . . . and thus show your proper appreciation of the acquaintance that you are forming.” And when, in the future, he concluded, “some bright young girl should become Mrs. Bowman, you must have a good acquaintance waiting to receive her in New Haven.” In fact, during a Thanksgiving trip to Lynn, Massachusetts, in 1902, at the invitation of a classmate and friend, he met Cora Olive Goldthwaite. The Goldthwaites were a financially comfortable, rather stiff middle-class New England family, and Cora had graduated from Radcliffe in English literature. After a six-year relationship, feeling established and financially secure on a twelve-hundred-dollar salary, Bowman proposed to Cora in March 1908, and they were married in June of the following year.

Yale was building a geography curriculum, largely because of the plans of another Davis student, Herbert E. Gregory, and Bowman taught an impressive range of courses in physiography (general as well as regional) and physical geography. But he focused increasingly on the human dimensions of geography, especially in North America, and added several courses (many coraught with Ellsworth Huntington) on “geographical controls” in history, anthropogeography, and the like. He wanted to understand and explain the geographical diversity of human activities. Two major preoccupations guided his Yale teaching. First, he dabbled with a resurgent and fashionable environmental determinism, which is a theoretical tradition positing that geographical differences in social behaviors, cultures, and economies are the results of different physical and environmental conditions; the environment determines the society; geography “controls” history. Environmental determinism appealed to an absolutist conception of space, had a long and distinguished history dating most recently to the eighteenth century, and had an obvious appeal as a kind of royal shortcut to human science. Bowman’s colleague Huntington would make a career out of the more extreme environmentalist explanations of human geographical variation, as did their older contemporary Ellen Semple. Still, in his early days at Yale, Bowman’s own teaching and research were organized around the contention that “the character of the physical features” of the earth “has been a prominent factor in the life of a race,” a position he later acknowledged as including “a lot of determinism.”

He was more swept along in the current, however, than he was a coxswain of this determinism, and by 1910, the same year that Virginia Woolf (and later Henri Lefebvre) identified as ushering in a new conception of space (see the section “The First Moment” in chapter 4), he registered his own dissatisfaction with the theory. He was troubled by the “bald generalizations” behind arguments extolling “geographical controls in history,” seeing them as “ghosts . . . of an idea often asserted in the past and as often denied” for want of solid research. Societies were much more plas-
tic, and collective social action could easily supersede most environmental controls, he reasoned. A habitual admonition to his later Yale classes catches
the complex relationality of space and nature that he now glimpsed:

I used to say to my classes... that one could build a city of a hundred thousand at the South Pole and provide electric lights and opera. Civilization could stand the cost. But what would be the use of it if there
were no resources to sustain it? I used to put opposite this the statement that we could also build a mountain range in the Sahara high enough to provoke rainfall. But again, what is the use of it... 54

His second and interconnected preoccupation was with what came to be called regional geography, a geographical inquiry that took regions as its
basic spatial unit and investigated their differences. Nineteenth-century
physical geography always had a regional dimension, as Bowman certainly
learned with Davis, and the regional approach came to dominate human
geography in the United States from the 1930s to the 1950s. Bowman was in
at the ground floor. The regional survey of the world by H. R. Mill, The In-
ternational Geography, had a “decisive influence” on him, and his first
to the Association of American Geographers (1905) was an extended
book review concerning the regional geography of the “Near East,” as it
was then called. He consistently claimed that his South America course of
1906 was “among the first,” if not the first, regional course “offered in any
American institution,” and he was the first AAG member at that time to
identify himself as a regional geographer. 55

The regional approach to geographical knowledge was not inherently an-
tagonistic to environmental determinism; indeed, Yale geography took the
“natural region” as the central unit of study and generally built a human
geographical portrait of a region on top of a firm physical foundation. In
1908 Bowman tried what he called “the man-first idea” in his South America
course, reversing the priority of physical and human components. By
the end of his Yale stint, he also taught commercial geography and political
geography, which, while retaining a significant environmental element,
were increasingly emancipated from questions of environmental control. 56
They also signaled the ways in which Bowman’s interests would change in
coming decades.

Yale was a new world for Bowman. He had a significant social life bey-
ond work, devoted most days to preparing and teaching large classes, spent
most summers in field research, and as an ambitious young faculty mem-
ber threw himself into building Yale geography. He encouraged “explora-
tions” in the less well-known parts of the world. For all of its problems,
the study of “environmental controls” offered explanation over simple
description, and when coupled with innovative work in human and regional
geography and the insistence on fieldwork, it formed a lively and new geo-
graphy curriculum at Yale by 1908, attracting more and better students. A
more intellectually and socially secure Bowman actually livened up the
department, and his teaching was challenging, encyclopedic, and well
received. He was elected to the new Association of American Geographers in 1906
and developed a sufficient reputation that he was courted for a position at
the University of Chicago, then the hearth of American geography. He
taught summer school there and occupied a floor in the house of the de-
partment chair, Rollin Salisbury, but balked at a permanent job. He had
formed life-long friendships in New Haven, including one with the politi-
cal scientist Charles Seymour, who later became president of Yale and
judged that Bowman helped transform “the softest of the so-called snap
courses” at Yale into “a stimulating discipline on a permanent basis.” 57
Bowman alone was not responsible for the shift, but after his colleague Herbert
Gregory retired and Bowman moved on, geography at Yale declined.

At the end of his first semester teaching there, Bowman declared himself
doublet candidate at Yale. Four years later at the age of thirty, he filed his
dissertation. He continued to publish material derived from earlier fieldwork,
including a piece on the disposal of oil-well wastes and an obscure but
influential manual, Well-Drilling Methods, which engineers still consulted
in the 1960s. But the dissertation marked the beginning of a new direction.
Entitled “The Geography of the Central Andes” and based partly on field-
work from a 1907 expedition to Peru and Bolivia, it exhibited more of his
Harvard background than the still-emerging innovations of Yale. He began
with two regional physiography chapters on the western and eastern wa-
tersheds of the Andes, followed by two on the populations of the Atacama
and highland Bolivia. He offered an “anthropogeographic” interpretation of
these regions, elaborated their trade routes and economic connections, and
concluded with an evaluation of “man and climatic change” across the whole
continent. The dissertation was more a collection of papers than a coherent
regional geography, and indeed all but one chapter appeared in various journ-
als over the next couple of years.

He also published his first book in his Yale years, Forest Physiography.
It is a peculiar book in several ways. While it could no longer be confused
for a Davis product, it is clearly rooted in his Harvard training, yet he did
not acknowledge Davis and made only desultory reference to a couple of
his works. Instead, it is dedicated to a California agrogeologist whose work
on soils had recently grabbed Bowman. Was Bowman asserting indepen-
dence from an old mentor, or was he just caught up in the enthusiasm of new ideas? The book's immediate provenance lay in a course on physiography, lithology, and soils that he taught in Yale's forestry school, and its outline follows the material covered there. The lumber industry was a major economic force in the country at the time, with parts of the Midwest, including Bowman's native Michigan, still yielding first-cut timber, and this provided a very practical rationale for the book. "The forester," Bowman explained, "requires a scientific knowledge of soils and climate." 58

The book had very little to do with forests, despite its title. Puzzled reviewers generally treated it as a rather quirky regional physiography with a long introductory treatise on soils grafted on—the "best detailed description" of the physiographic regions of the United States, praised A. J. Herbertson at London's Royal Geographical Society. 39 It did have some notable features. A "genetic classification of geographical forms is, in effect, an explanation of them," wrote Davis in his classic paper on "the geographical cycle." 60 It was classic Kantian hubris and a lesson that Bowman, a sometimes pedantic classifier, took very much to heart: process, classification, and the regionalization of different biophysical complexes are the anchors of Forest Physiography. On the question of regions, Bowman had grasped a clear sense of the procedures of regionalization—the necessity of judging the distinction between similar and dissimilar features within and among places—that would come to undergird a whole tradition of regional geography as areal differentiation. 61 And, perhaps less remarkable given the topic and his training, he shows a keen, early sensibility concerning the connection between lumbering, soil destruction, and erosion.

Bowman's evolutionary idealism washes through the introductory passages on the agency of soils and the historical destiny of plants. Soil is important for plant evolution, he says, but competition among trees can doom some species regardless of the soil. Plants have their own innate tendencies:

Plants possess a peculiar inherent force by the exercise of which they directly adapt themselves to new conditions and become fitted for existence in accordance with new surroundings. Thus plants are thought to have certain physiologic plasticity or power of self-regulation that tends to adjust them to a new environment, a feature that goes far in explaining the absence of a rigid control of physiographic conditions over forest distributions although an approximate control is often manifested. 62

This weak version of determinism, allied with the implied teleological agency of specific botanical species, affirms Shaler's as much as Davis's influence on Bowman and suggests the depth to which he was at this point a product of the post-Darwinian nineteenth century. 63 In fact, a gendered and thoroughly suggestive transcendentalism framed his entire vision of nature. The book's first words are:

"Men whose work brings them into touch with the soil and its relation to life do not use the phrase 'mother earth' in a casual sense. The great hosts of plant and animal life that people the lands...are, directly or indirectly, the dependent children of the earth. Viewed from such a standpoint the soil is not mere dirt, a substance to be despised, a synonym for filth, but a great storehouse of energy, a great home, a bountiful mother. Countless billions of micro-organisms—the bacterial flora—thrill its dark passageways while the roots of countless higher plants ramify through it in eager quest for food and water. 64

"Those who go up by the help of transcendentalism, do not always come back in safety," it has been said, 65 and this may be a case in point. Bowman's publisher clearly did not include any budding Freudsians on its editorial staff, or this passage, written barely a year after he married, would surely have been excised. Or perhaps they simply assumed that physical geography was immune to unscientific ramifications. No such arbitrary separation of science and spirituality affected Bowman, however. Just as science and religion, god and evolution, represented no contradiction for the physical geography of Shaler, a transcendental infusion of meaning into nature never seemed incompatible with the strictest positivism and the rigorous identification of facts and objective truths for Bowman.

THE PRACTICAL MAN

The life of the mind was Bowman's escape from hard work, hard religion, and hard paternal authority, but these influences carried forward into his own mature demeanor. The personal confidence that ripened during the Yale years displaced all trace of shyness. He would not always match the intellectual flair and originality of Davis or Shaler but was far more adept at translating the new geographical ideas into action; science was nothing if not wedded to a larger social purpose. For all its oddities, Forest Physiography prefigured a lot about Bowman's career, his strengths, and his limitations. It was a manual for foresters struggling to break free from an intellectual treatise. "Practical men must choose constantly between principle and expediency," suggested an older and wiser Bowman, translating the philosophical tension between pragmatism and transcendentalism into more modern and more useful terms. "Principle is the long-term interest; expediency is the
present advantage.” As two colleagues would later say of him, “The scholar and the man of action were combined in about equal measure.” The practice of expediency and espousal of principle would become a way of life.

But how specifically would this penchant for the practical mobilize his scientific geography for a wider application? In Bowman’s last year at Yale, the U.S. government was lurching toward conflict with another remnant of the Spanish Empire. The Mexican Revolution had begun in 1910, and four years later Woodrow Wilson dispatched troops to the Gulf port of Veracruz to safeguard U.S. oil investments. As the uprising increasingly focused on the north, Wilson now claimed the pretext of cross-border incursions was to combat the revolutionaries, especially Pancho Villa. Bowman quickly responded with a military geography of northern Mexico, applying his geographical training to contemporary political events for the first time. He explicitly sought answers to “a number of the questions which the military man raises on looking over the possibilities of such a region.” It offered a topographical survey, highlighting the availability of resources such as water and the different forms of ground cover, but it especially focused on transportation routes: “a military campaign directed against a revolution in that region, either by a central Mexican authority or by American forces, must always confront the problem of reaching in force those remote sections that are the haunts of guerilla bands and small fugitive detachments.” The principle in question here, Bowman would have said, was U.S.-style democracy: the expediency, his casting of geographical science as a military tool.

From the Michigan militia in 1898 to Mexican geography a decade and a half later was a long journey for Bowman, but its start and end were marked by a consistent braiding of geographical and political concerns, scholarly and practical interests. Despite flashes of insight associated with his disavowal of environmental determinism and a clear sense that new geographical realities offered opportunities, he still generally thought of American expansionism in absolutist, territorial terms. He had moved only cautiously beyond the geographies affirmed by the colonial adventurism of 1898. He read Brooks Adams’s New Empire and Halford Mackinder’s “Geographical Pivot of History” in this period, and he watched the Open Door evolve from a “China policy” into a global ambition with Woodrow Wilson, but as yet he neither grasped these as his own vision nor embraced the shifting articulation of global economies, histories, and geographies that was becoming visible. His Andean field research partly reaffirmed this traditional vision, but it also opened up new veins of social transformation that in turn helped to open Bowman to the greater fluidity of global geographies.