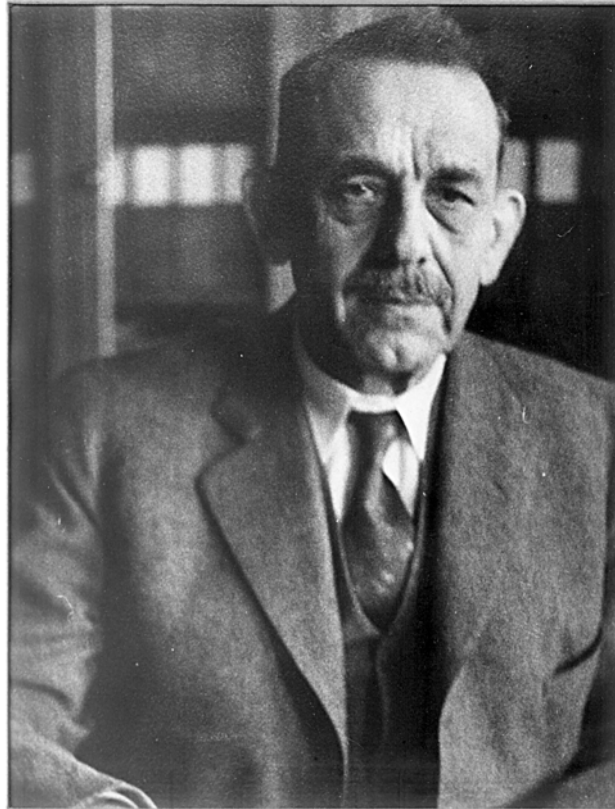


Nevin Melancthon Fenneman

1865-1945

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There is only one Fenneman in the history of American geography, a famous and revered figure who died forty years ago, but whose work has been cited continuously ever since and whose two definitive volumes on the physiography of the United States are still listed, perdurable as Holy Writ, in the Geographical Bibliography for American Libraries fifty years after their original publication. Appointed to the first chair of geology in the University of Colorado at Boulder in 1902, Fenneman became the foundation professor of geology and geography at the University of Cincinnati in 1907, where he remained as department head until his retirement in 1937. He was elected President of the Association of American Geographers in 1918, having been one of the thirteen intimates of the inner circle who supported William Morris Davis in founding the Association in 1904. His was the double distinction of also being elected President of the Geological Society of America in 1935, in his seventieth year.

1. EDUCATION, LIFE AND WORK

Fenneman's grandfather was Johann Heinrich Vennemann, a Westphalian migrant who landed in Baltimore on 1 October 1840, journeyed to Pittsburgh by canal and railroad, continued on to Cincinnati by river, and eventually settled in Indianapolis in 1852. One of the sons who accompanied him across the Atlantic as a boy of eight went on to study Calvinistic theology at Heidelberg College in Tiffin, Ohio, was ordained as a minister of the Reformed Church, and anglicized his name to William Henry Fenneman.

Between 1859 and 1903, the Rev. Dr. W. H. Fenneman ministered to a succession of rural, small-town congregations in northern Indiana and Ohio. They were stern and law-abiding communities of the Protestant Bible Belt where the Amish felt at home and today's voters still begrudge the pleasures of the bottle. In Lima, Ohio, one of these towns, the Fenneman's third child and only son was born on 26 December 1865. He was christened 'Nevin' after the contemporary American theologian who had written *The Mystical Presence* (a vindication of

Calvinism), 'Melancthon' after Philipp Melancthon (1497-1560) who had first formulated the theology of Luther's Reformation (in the Loci communes of 1521), and 'Fenneman' after the fen folk of the Low Countries among whom his ancestors were numbered. His mother, Rebecca Oldfather (previously 'Aultvater'), was descended from German and Irish pioneers of the Shenandoah Valley in Virginia. Despite her husband's ambition that his son would also take holy orders she had her more worldly way and guided him and his sisters into teaching careers. Fenneman was a downy-faced youngster of seventeen when he graduated as A.B. from Heidelberg College, Tiffin, in 1883.

For nine years Fenneman taught the higher grades at the village schools of Wilkinsburg and Greensburg, both near Pittsburgh. Sarah Morrow Welty was the second teacher at Wilkinsburg in 1884. She and Fenneman began a platonic friendship which lasted through both their marriages, each addressing the other as 'David' (Mrs. Welty) and 'Jonathan' (N.M.F.). Mrs. Welty remembered Fenneman as being 'modest to a fault', rather diffident about his 'humble beginnings', and the 'only alley-cat' (his own whimsical epithet) among a better-pedigreed set of young men who were the life of the village. At Greensburg, where Fenneman was headmaster from 1886, he taught mathematics and chemistry.

In 1892, at the age of twenty-seven, he moved to Greeley as Professor of Physical Sciences at the Colorado State Normal School, a cow college (that is, a small and not well-known college in a rural area) founded in 1889 with a two-year curriculum for the training of elementary schoolteachers. The term 'cow college' aptly describes Greeley which then had only one building. His responsibilities embraced geography and his conquests included a colleague, Sarah Alice Glisan from Fredonia, New York, whom he married on his birthday in 1893. Their first home was an eight-room wood-frame house with cottonwood trees in front and box elder behind. At that time, Horace Greeley's cooperative farming venture had not yet survived its first twenty-five years, and Turner's westward frontier of settlement had passed beyond Denver only in 1858. Fascinated though he remained by the Front Range of the Rocky Mountains for the remainder of his life, Fenneman's intellectual ambitions turned his attention eastwards, initially towards New York and Washington, D.C. During those eight years in Greeley he trod the stranger paths of banishment, taking care to map them indelibly in his memory. As Edgar L. Hewett inquired later, 'What would you have done without Greeley to practice on?'

What followed was quite literally a re-orientation, a turning once more towards the east. The first distraction was the summer course at Harvard in 1895 when Fenneman fell under the spell of William Morris Davis and adopted him--not all at once but over a forty year friendship--as mentor, confidant, and collaborator. The course at Harvard was an outgrowth of the National Education Association's foray into secondary school curricula and college entrance requirements. Much that Davis preached in 1895 was fastened upon by Fenneman, from the urge to lay the logical foundations for a more scientific geomorphology to the importance of geography everywhere in the curriculum, whether in the elementary school, the business college, or the War Department. Although Fenneman has been regarded by some as a disciple of Davis (verging at times on sycophancy), that was not his self-perception. The two men never agreed about the propriety of importing geological terms into geography, and Fenneman told Eliot Blackwelder that he 'always found both Davis and [Douglas W.] Johnson very much more interested in discussing types [of landforms] than in dividing up areas according to type'.

Nevin and Sarah Fenneman remained in Greeley eight years, but moved to Chicago in 1900. Fenneman had already passed his M.A. examination at the fledgling University of Chicago in March 1898, and had submitted his M.A. thesis eighteen months later. It dealt with 'The Laramie Cretaceous Series' but was augmented by lacustrine field work for the Wisconsin Geological Survey, supervised by T.C. Chamberlin and C. R. Van Rise, whose lectures on the physiography of the United States Fenneman prepared for publication by Longman in 1903. His doctoral thesis, in emulation of Rollin D. Salisbury, was entitled 'The development of the profile of equilibrium of the subaqueous shore terrace'. He was awarded the Ph.D. degree in 1901 and returned to Colorado during the following year, but this time to Boulder, not Greeley, to become the first professor of geology at the University of Colorado. For twenty years, however, the University of Chicago remained the pivotal brokerage house in any negotiations he undertook,

professional or academic. What it approved, he carefully considered; what it advised, he mostly did.

Its advice and approval prompted Fenneman to leave the University of Colorado after only one year, during which he nevertheless published over 200 pages of his graduate research. He was appointed professor of geology in the University of Wisconsin, Madison, at an annual salary of \$2,000, joining an already distinguished department which promptly saw him elected to Fellowships in the American Association for the Advancement of Science (1903), the Geological Society of America (1904), and the Association of American Geographers (also in 1904, as one of the forty-eight original members). These were four years of professional ordination and increasing family responsibility. His father died in 1904 and Fenneman had to underwrite the mortgage of his parents' home. There was a summer abroad, at the Second Petroleum Congress in Belgium, and resource surveys in the Yampa coal field of Colorado, the oil fields of Texas, and in North Dakota. Fenneman earned another \$100 per month ('plus expenses') in summer employment by the Wisconsin Geological Survey, and settled himself on the awkward, three-legged stool of corporate oil exploration, government field commissions, and academic research--preferring United States Geological Survey (USGS) assignments which were resource surveys rather than 'private work', because of the 'greater steadiness' of the former despite the 'larger remuneration' of the latter. 'I trust you will not entirely discard your official personality', advised C. W. Hayes of the USGS, 'but will be on the lookout for profitable fields for future investigation'. Another 400 pages of those investigations appeared in print during the four Wisconsin years.

Why Fenneman left the University of Wisconsin in 1907 is not transparently obvious. With such famous friends there as Frederick Jackson Turner (1861-1932) and Stephen Moulton Babcock (1843-1931), and with such easy access to the Wisconsin lakeland and the Chicago Sanhedrin, Madison should have seemed the ideal location. Yet as early as 1905 John W. Hall of the University of Cincinnati had tempted Fenneman with the lure of a \$3,000 annual salary, and by 1906 Fenneman had sought unsuccessfully the chair of geology at the University of Michigan. They were turbulent, topsy-turvy times in the bearish academic market-place, with the closest of friends jockeying for the same positions. As chairman of the AAG nominating committee in 1906 Fenneman found himself advantageously placed to recommend others with characteristic fairness and responsibility, but not himself.

What tugged him to Cincinnati in 1907, into an ecological niche for which he was ideally adapted? Though attached to his work and home in Wisconsin, Fenneman divulged in a letter to a Cincinnati ally the attractions of being more closely in touch with students in smaller classes, of the respect clearly accorded good teaching, and the now familiar 'pleasure of creating something'. 'I think too', he wrote, 'I should like the old time flavor of the Cincinnati Scientific Society'. Two 'ulterior motives' were also mentioned: the proximity of Cincinnati to his mother's home in Hamilton, Ohio, and his 'wish to get Mrs. Fenneman away from our rigorous Wisconsin winters'. The inducements were sufficient.

An offer from President Charles W. Dabney of the University of Cincinnati was accepted on 7 May 1907, and Fenneman resigned his Wisconsin position on 10 June. He was forty-one years old, at the threshold of a thirty-eight year association with Cincinnati that was to redound to the honor of both. Dabney had specified his wish for a 'scientific geologist, who is at the same time a good teacher and a good organizer', 'knowing that laboratories and a museum had to be established. He was equally cognizant that his Teachers College wanted a geographer and his Engineering College an economic geologist. Fenneman satisfied them all 'Congratulations', wrote W. M. Davis. 'It is a beautiful district, a fine chance for your physiographic work'.

That chance, however, then seemed rather remote. In 1906 the U.S. Geological Survey had declined to support Fenneman's proposed synopsis of American physiography on the grounds that it lacked 'correlations'. One year later the *Journal of Geology* rejected a similar submission because it appeared to be, in T. C. Chamberlin's editorial view, 'an extension of an interesting principle far beyond the probable limit of its applicability'. Thus encouraged, Fenneman turned for consolation to building his new Department of Geology and Geography at

the University of Cincinnati--the 'Taft institution' as one Colorado lawyer perceived it, the municipally-owned, civic university of 'one of the most highly cultured and most solidly established American cities'.

The University now enrolls 37 000 students, but in 1907-08 there were only 1,364. All departments in the College of Liberal Arts huddled under the common roof of McMicken Hall. On its fourth floor Fenneman assembled what were then the latest teaching materials and laboratory equipment including a Fuess petrographic microscope, lantern slides from the Smithsonian Institution, a stereopticon, donated journals, maps and map catalogues from the American Geographical Society, and the beginning of a geological museum which was eventually to house the Ordovician fossil collection for which Cincinnati is known around the world. Walter Bucher, whose own distinguished career in academic geology began when Fenneman appointed him museum curator in 1912, himself attached 8,160 labels to the S.A. Miller fossil collection. Rock specimens, many obtained through exchanges with Bryn Mawr College and other institutions, also enlarged the museum, as did mammoth tusks and teeth from Cincinnati sites. Within two years of Fenneman's appointment the University of Cincinnati had spent \$16,000 in equipping its new Department of Geology and Geography, equivalent today to an initial outlay of \$250,000.

In 1911 the Department moved out of McMicken Hall and became the sole tenant of the 'Old Technical' building, a red brick encrustation of the Holocene in which the university's geologists still silicify. A student guide book located the building at 'a stone's throw from dilapidation'. Cooperation with the Cincinnati Museum of Natural History, alternating with attempts to combine its collections with those of the university, occupied Fenneman until 1924 when he resigned from the museum committee, having fended off the Botany Department's six-year crusade to capture it, but weary, as he put it, of a city which consigned museums to attics and basements. Although the paleontological collection gradually eliminated the invidious reliance on better collections of Cincinnati fossils in Boston, Chicago, Washington, and Baltimore, and although Fenneman steered the museum through its 'natural history' phase into a 'Laboratory' phase, some of its other exhibits attracted the jibes of condescending colleagues. One joked that the museum entrance was presided over by 'a decrepid (sic) elephant', for which the lack of budgeted maintenance occasioned Fenneman to rebuke his dean. 'Several years ago', he complained, 'we had to throw out and burn the giraffe for the same reason'. Almost from the day of his arrival in Cincinnati Fenneman had contended that 'the question whether we shall ever have a great geological department here depends in large measure on the closeness of our relations to that [Cincinnati's Natural History] museum'.

Among those appointed by Fenneman to the joint department were such notable geologists as Walter H. Bucher (who came from Heidelberg, Germany, and went to Columbia, N.Y., after thirty years in Cincinnati), the mineralogist Otto von Schlichten, Charles H. Behre, Jr. (who moved to Northwestern in 1928), John L. Rich (that rarity, as Fenneman described him, 'an intellectual among oil men'), George B. Barbour (a Scottish FRGS who became Dean of Arts and Sciences), and Kenneth E. Caster (President and Medalist of the American Paleontological Society). Caster had arrived in Cincinnati with the record Ohio River flood of 1936 and founded the 'Dry Dredgers', Cincinnati's organization of amateur fossil hunters. His wife, Anneliese S. Caster, drew or redrew most of the illustrations in Fenneman's *Physiography of Eastern United States*.

Of the geographers appointed by Fenneman to Cincinnati's joint department Earl C. Case taught from 1920 to 1957, Homer Martin from 1925 to 1930, Daniel Bergsmark from 1927 to 1945, and George F. Deasy from 1936 to 1940. A.E. Sandberg taught both geography and geology, as if to legitimize the academic union, and personally conducted Fenneman on a tour of Panama in 1940. Case and Bergsmark collaborated in writing *College Geography* (1932), for long the standard regional treatment of world economic geography, and their contributions to 'commercial education' (today's 'business administration') were highly valued by the pragmatic Fenneman. During the 1920s, in fact, over a third of the Department's students came from the very impure, very applied College of Engineering and Commerce. 'Are we training scientists or engineers?' Fenneman once inquired.

The Dean of that College was Fenneman's great friend and habitual confidant, Herman Schneider, the famed originator of the 'cooperative system of technological education' in 1906--a scheme for alternatively scheduling undergraduates in classes for one term and in a career-related job for the following term. From the University of Cincinnati the 'co-op system' has spread around the world. What his friendship with Schneider epitomized was the trustworthiness, steadiness of purpose, authority, and influence that Fenneman attained in Cincinnati and its university. Geography and geology became protected birds in a feathered nest largely because Fenneman became an unflagging and almost avuncular source of sound advice. He served on two committees to find new presidents for the University, coming "Within an ace of securing the geographer Harlan H. Barrows from the University of Chicago in 1928. He chaired committees to find department heads for Economics and Botany and even after his retirement was consulted confidentially by the Board of Trustees about the fairest methods of staff retrenchment.

Herman Schneider's belief in meshing practical job experiences with university studies certainly also sustained Fenneman, who spent his summers in the field. His own letters, and those of his scientific correspondents, typically concluded with 'best wishes for a pleasant and successful [or profitable] field season'. That was the expectation. Fenneman worked almost every summer between 1900 and 1924 for the U.S. Geological Survey, or for various state geological surveys. After 1924, he returned to Montana or Colorado each summer for the ensuing twenty years, either as a participant in the Yellowstone-Bighorn Research Association's field camp at Red Lodge or to the University of Colorado's summer camp at Nederland. His field reports were published in a dozen USGS Bulletins and as the first editions of geological map quadrangles. His St. Louis and Cincinnati surveys were published with an eye to school use although he held his tongue when a Missouri educator taunted him with Oersted's aphorism, 'The laws of nature are the thoughts of God'. Fenneman may well have agreed. His efforts to reconcile science and religion were low-key but constant.

Fenneman travelled throughout the United States, exploring at first hand all the physiographic provinces which he was to describe so fully in the two volumes of his *Physiography*. His secretary, Lillian Smith, routinely made his railroad and sailing reservations, but Fenneman never yielded to the temptation to view his physiographic provinces from the sky and never boarded an airplane, even though Orville Wright and Admiral Richard E. Byrd were among his correspondents. Fenneman attended the 1908 International Geographical Congress in Geneva, officially representing the Association of American Geographers (of which he was then treasurer), the U.S. Geological Survey, and the Cincinnati Natural History Society. When he decided to join the Italian-French Excursion, which W. M. Davis called 'the geographical pilgrimage to Rome', an admirer of Fenneman's geomorphological divination wrote: 'I trust when you get to Naples, you will insist upon an eruption'. Fenneman also attended the International Geological Congresses in Stockholm (1910) and Toronto (1913), and the Pan-Pacific Congresses of 1923 (Australia) and 1926 (Japan). On W.M. Davis's Transcontinental Excursion of 1912 Fenneman served as 'Journalist', fielding the questions from reporters in every town they visited throughout what Davis had predicted would be 'by far the biggest geographical event ever evented in the U.S.' in a letter to Fenneman dated 1 November 1911.

Although these gatherings brought Fenneman into contact with many European geographers, including Albrecht Penck, and although he lectured at Oxford for A.J. Herbertson in 1910 his research remained resolutely in focus on North American landforms. He corresponded with foreign scientists as friends and tour guides, not research associates. For Fenneman's generation perhaps the untimely First World War shattered any prospect of collaboration, especially with scientists from countries of the Pan-Germanic League. After the Armistice Fenneman sent gifts of books and money to Joseph Partsch at Leipzig, to the Rector of the University of Graz, and to colleagues in Vienna, but there were no proposals for joint research--only inquiries about American studies from Penck and about charter forms of government from G.G. Chisholm of Edinburgh. Fenneman knew where he belonged. 'To offset the travels of a philosopher in Europe', he wrote to Van Meter Ames, the aesthete, 'I spent the week following Christmas in Oklahoma. The difference between Europe and Oklahoma is the difference between a philosopher and a geologist'.

Fenneman's magnanimity was widely appreciated. His beneficiaries ranged from depression victims who begged him for fifteen dollars to pay the rent to a niece whose incestuous husband abandoned her, in defiance of the White Slave Act. Fenneman served on the board of Cincinnati's Community Chest for the last five years of his life. The Children's Hospital received \$6,000 as a memorial to his wife. Sarah Fenneman, the radiant hostess and blithe spirit who had pretended to be the frivolous fiancée of 'every eligible man in the country', had died in 1920, childless, leaving her husband another twenty-five years of solitary but not wholly inconsequential pursuits. Fenneman never remarried, but willed \$73,000 of his trust assets to Heidelberg College, Ohio, and \$50,000 to the University of Cincinnati.

It took a resolution of the Board of Trustees to force retirement upon him in 1937, at the age of seventy-one. He took it very hard--relinquishing the headship of his department during its thirtieth anniversary, surrendering his warm office on the ground floor of Old Tech, from which he could bark at the insolent Corryville boys when they lit fires in the trashcans or threw stones at the greenhouse. Though fearful that retirement would be a 'sentence to solitary confinement' 'as a 'pensioner and derelict', he was not forgotten. At the University's commencement exercises in 1940, when he gave the address to the graduating class, he was awarded the Honorary Degree of Doctor of Laws. He continued to teach his graduate seminar in physiography for all eight of his emeritus years and his Lincolnian portrait painted by Frank H. Myers, through subscription, still hangs in Old Tech. In June 1945 a minor ailment put him in hospital but pneumonia set in and he died of a coronary occlusion on the Fourth of July. He was buried in Fredonia, N.Y., beside his wife, reunited with the earth which had been his terrestrial abode and intellectual obsession, somewhere, appropriately, between the Rocky Mountains and the New England coast, between the Laurentian Shield and the Ohio Valley.

2. SCIENTIFIC IDEAS AND GEOGRAPHICAL THOUGHT

Nevin Fenneman's life bridged the nineteenth and twentieth centuries--formed in one, fulfilled in the other. Notionally this *fin de siècle* transition should have produced a dilettantish and despairing world-weariness, but instead, in Eliot Blackwelder's modest words, it produced 'a useful and well-rounded life'. For all his starchy conservatism Fenneman was a life-long initiator, especially at Greeley, Boulder, and Cincinnati. He helped to liberate American geography from its early servitude in the House of Geology, while remaining an eminent and approachable figure in both fields. Although he lived through two World Wars and the Great Depression Fenneman was too old to enlist and too comfortably off to be diverted from his physiographic pursuits. He worked for peace, while investing in railroads and real estate. Fenneman tuned out the partisan politics of his time or reduced them to satire or cynicism, routinely reading only the Springfield Republican (not the most cosmopolitan of newspapers) and acquiring a radio (as a gift) only to listen in on the Second World War.

But if the historical context was not crucial to his work, its regional context was. Time and again Fenneman found his physiographic examples and inspiration in either his home locality or areas to which he returned summer after summer, often the Rocky Mountains of Colorado and Montana, and the glaciated landscape of Ontario and Hudson Bay, to which he made six camping and canoeing trips with his friend James Albert Green, Cincinnati's Public Librarian, together with Indian guides. Fenneman filled forty-five notebooks with minutely pencilled descriptions of the landforms he saw out of train windows or from saddled horses, even using up the blank columns of his savings bank account book. The site of Cincinnati also thrust under his nose all the ramifications, human and physical, of Ohio River flooding. Although foreign lands did not distract him from American research he kept up an interest in Central America, the Manchurian and Japanese periphery of China, and Australia, where E.C. Andrews (Sydney), Charles Fenner (Adelaide), and E. de C. Clarke (Perth) corresponded about his work.

Fenneman's enduring monument is his immaculate division of the United States into twenty-five physiographic provinces (Annals of the Association of American Geographers, 1916, with revisions in 1921 and 1928), and his 1,200-page description of them, section by section, in Physiography of Western United States (1931) and Physiography of Eastern United States

(1938). The task absorbed his mind, frontally or occipitally, for over forty years from the germinal inspiration of Major John Wesley Powell's Physiographic Regions of the United States (published in 1894 by the National Geographic Society), through his post-doctoral editing of Van Hise's physiographic lectures in 1902, to the gold medal conferred on him in 1938 by the Chicago Geographic Society 'for eminent achievements in the Physiography of the United States'. He treasured a photograph of Powell's statue in Arlington National Cemetery, Washington, and Powell's portrait came first among those displayed in the Department's museum.

The complementarity of regional analysis and synthesis has rarely been so snug or so compelling but it was not accomplished through divine inspiration alone. Fenneman refined and multiplied the physiographic provinces employed in Forest Physiography, published in 1911 by Isaiah Bowman, whom he had met five years before, in Eckert's Cave, Illinois. He assimilated W.L.G. Joerg's subdivision of the United States into 'natural regions' (1913) and had corresponded with A.J. Herbertson of Oxford about his 'major natural regions' (1905). Fenneman chaired standing committees of the Association of American Geographers, which sponsored the project, and spent 1915-16 in Washington, D.C., on academic leave, plundering the U.S. Geological Survey for the unpublished field reports he needed.

Critics of his landform divisions included Cleveland Abbe (1838-1916), founder of the U.S. Weather Bureau (another Cincinnati), who averred that North American climatological boundaries were 'better established', and Alfred H. Brooks, who wrote: 'You certainly started a fine row with your physiographic provinces'. To geologists who accused him of rarely handling an actual rock or ever focusing on the earth processes responsible for his provinces, he retorted: 'I can't lay eggs either, but I know more about an omelet than any hen in the country'.

The encouragement he really desired came from Isaiah Bowman who wrote that 'You have set in motion a principle of research which will continue for many, many decades and will firmly establish the geographical idea in statistical work in the United States'. However environmentally deterministic, that was clearly Fenneman's hope: to define physiographic units that formed a 'proper basis for the study of statistics', and to establish the 'political base' (that is, counties or townships as enumeration districts) corresponding to the 'physical base'. He proposed this next step to the U.S. Census Bureau and the U.S. Department of Agriculture, but in vain. Louis C. Peltier rejected the degree of generalization implicit in Fenneman's provinces (and those of Bowman), finding them misaligned with the finer-grained 'phenomena of human occupancy'--an unconformity of a different kind. A more durable conclusion was reached by the Geographical Review: 'Dr. Fenneman's labors thus provide a solid physiographic framework for any serious study in the geography of our country'. So they did and so they continue.

What is more the nomenclature he devised for the eighty-six physiographic 'provinces' and 'sections' has become coin of the realm, the accepted terminology used in virtually all subsequent regional studies. Detractors of Fenneman's 'mere description' casually overlook how precisely he defined his toponymy, how judiciously the sub-regions fit together into a logically and empirically valid whole. He invented the alphabet, but not without contention. G.K. Gilbert and M.R. Campbell withheld his Boulder report from publication until Fenneman's so-called 'Culver sandstone' was better correlated with precisely designated members, while D.W. Johnson and F.E. Matthes long contested the propriety of 'older' and 'newer' Appalachians, and such coinages as 'vallemont'. Fenneman also took issue with W.M. Davis over banning the use of geological names such as 'Carboniferous' from regional geography. 'Why must we secrete the geologic map', he asked, 'as medieval priests secreted the Bible?'

To Fenneman topography was an end-product for the geologist but a point of departure for the geographer. For geography the 'areal relation' was crucial and studying specific areas comprehensively, however far they strayed from the singularly idealized Davisian landform 'types', was no less worthy than hunting down the geomorphological processes responsible for their topography. The two approaches, Fenneman thought, belonged to different sorts of minds: for him, 'the obligation to explain the actual spot seemed quite equal to that of elucidating and illustrating the principles'.

Fenneman made other contributions to science and geography. Erosion surfaces of various kinds attracted his attention sporadically over four decades. His doctoral dissertation on the profile of equilibrium of the subaqueous shore terrace matured into his presidential address to the Geological Society of America in 1935, 'Cyclic and non-cyclic aspects of erosion', which contended that normal erosive agencies, without reference to base level or cyclic processes, could produce landforms which his cocksure contemporaries were attributing to peneplanation. Fenneman styled himself 'a peacemaker on pediments', but the fiefdoms kept on squabbling.

During other phases of his career Fenneman also wore the hat of the economic geologist, surveying oil fields in Texas, Louisiana, and Colorado, mapping coal deposits, drilling (even divining) for artesian water, and assessing the commercial value of glacial gravels. In the vicinity of Cincinnati he reconstructed the preglacial river systems and advised the Ohio Flood Board, the U.S. Army Corps of Engineers, and the Central Inland Waterways Association, latterly (much too latterly) concerning 'commerce through a barge canal'. The 1920s, in fact, were swamped with commissioned resource surveys, many of them intrinsically geographical, which involved Fenneman's entire department. One was Herman Schneider's industrial resource survey for the Commercial Club of Cincinnati (now its Chamber of Commerce), an eighty-six page undertaking which Fenneman directed while protecting his flanks from free-loading hyenas in the Department of Chemical Engineering who believed they should be in charge. Bulging files were developed on the most proximate, suitable, or untapped raw materials for Cincinnati's manufacturing industries. Earlier, in 1914, Fenneman had prepared the case for locating a new Federal Reserve Bank in Cincinnati, but the building was erected in Cleveland. Few of today's dedicated location theorists are given such an opportunity to rearrange a nation's financial hierarchy.

In 1920 Fenneman again put 'science on the witness stand' (as he titled an address on the subject) by providing expert testimony for the United States Department of Justice, which hoped to show that Golden Lake and Young's Lake in Arkansas had not existed as water bodies when the area was originally surveyed about 1840. It was another case of riparian rights and 'quiet title' along the meandering and ever-shifting Mississippi. Litigation dragged on until 1923, when Fenneman and the ecologist, the forester, and the drainage engineer who assisted him failed to prove their case but learned the lesson that physiography is not quite an exact science.

All these resource surveys confirmed Fenneman's belief that geology and geography had a united role in practical affairs. As newly-elected president of the AAG in 1918, he was arranging a joint meeting with the Geological Society of America to consider the 'relation of our sciences to the War' when the Armistice intervened. By then he was already involved in President Woodrow Wilson's preparations for the peace commission negotiations. Many American geographers had been commandeered by Colonel Edward M. House to assist with his secretive but official 'Inquiry' into the international implications and options of the peace settlement. Fenneman's assigned responsibility was to gather and organize the African scientific data, since the political disposition of the German colonies had to be anticipated. His group was to be 'concerned primarily with the potentiality of the African tribes', including those considered to be 'from the start rather hopeless material'. He reported to Isaiah Bowman, whose field expediency was becoming a legend, but his own African 'team' included many notables. J. Paul Goode provided a hypsometric map of Africa 'with special reference to white settlement'. H.K.W. Kumm proposed a monograph on the 'Mohammedan advance in Africa', and prepared a tribal map. T.C. Chamberlin, Fenneman's old editorial nemesis, dispensed with geology and offered a paper on the 'question of colonial adjustments' including boundaries, international straits, free ports, 'outlets for inland peoples', and international rights of way. E.A. Hooton of Harvard prepared an ethnographic map of Africa showing the 'capacity for civilization' of each tribe and George Otis Smith, Director of the USGS, provided the mineral statistics. A monograph co-authored by H.L. Shantz of the U.S. Department of Agriculture and C.F. Marbut, *The Vegetation and Soils of Africa*, was published by the American Geographical Society in 1923. It was one of the larger, more scholarly outcomes of the Inquiry.

Fenneman turned for basic research assistance to 'women who have been trained in physiography and have good critical faculties ... who can read the various descriptive books and articles on Africa and see through them'. He recruited Aida A. Heine, Lila Thompson, and Mrs.

Robert W. Jones. His own contribution, over and beyond organizing the project, was the Report on Trade Routes in Africa, which discussed 'hinterlands' (a term used in English only from 1890) and 'radial routes' which reflected 'the stage of exploitation'--a conceptualization usually thought to derive only from the labyrinthian search models of the 1960s.

There is a great deal more to Fenneman's scientific ideas and geographical thought than the physiographic provinces, nomenclature, resource surveys, and surficial geology, to use a modern term including soils, their parent materials and bedrock at or near the surface. Monumental contributions though they are, these were merely the alluvial cones of his mind. Fortunately he left a formidable record of the bedrock uplands from which those cones discharged. Fenneman's work was set in a well-formulated but rigid educational philosophy, and a clear sense of scientific mission. His most enduring and most-studied paper is surely 'The Circumference of Geography', the presidential address he gave to the Association of American Geographers in 1918. Depicting his notions in the now-famous Venn diagram, Fenneman showed how 'commercial geography' occupies the overlap between geography and economics, climatology the overlap between geography and meteorology, and so on. The central residual circle, he said, around which the overlapping sciences formed an encroaching ring, 'may represent regional geography'. This he defined as 'the study of areas in their compositeness or complexity'. He viewed it as the 'central core' of 'pure geography', containing the seeds by which the subject propagates itself and produces 'that distinctive geographic flavor which comes only when the various elements are studied in their inter-relations'. Much as he approved and practised G.K. Gilbert's 'scientific trespass' and 'cross-fertilization', he held that 'a science cannot be defined by its circumference' and that living 'too much on our borders and not enough in the center' allows other fields to 'claim us as a vassal'.

Fenneman was much intrigued by the nature, intellectual stature, and value of, geography. In 1919 he circulated an outline for a hypothetical 'geography of Missouri' to sixteen American colleagues, requesting their reactions to his conspectus. Twenty years later, at the age of seventy-four, he presented a paper on the 'Development of Geography in America' to the Ohio Academy of Sciences, contending that the popular mind still saw geography as a comprehensive, non-technical, anthropocentric 'world picture', discouragingly dominated by commercial patterns and therefore an 'orderly assemblage of knowledge, but not a branch of science'. Three attempts to infuse it with 'scientific character'--Georg Gerland's 'geophysics', W.M. Davis's 'surface forms', and the disciples of 'environment and response'--had all failed. In the margin of his manuscript, Fenneman wrote: 'Not offered for publication'. As early as 1910 he was commending to Davis a paper on the 'geographic aspect of culture' by Captain Joshua Slocum, and in 1924 he reminded his Dean of Education why a staff geographer was needed: 'Speaking of culture, is there any subject in the range of Education in which one or two years of college study minister more to the higher pleasures than Geography. If it is not a "humanity", what is?'

Fenneman was well aware of his own scientific style. 'I am distinctly partial to hypotheses which involve the fewest unproved or extraordinary assumptions', he told Howard A. Meyerdorff in 1936, with reference to Appalachian drainage. In the margin of a letter from T.C. Chamberlin he penciled 'No more gathering of data but guided in doing this by multiple hypotheses. Any other "inquiry" is blind and wasteful and inefficient'.

Others remarked on the versatility of this professor of geology who could explain the land movements of the Japanese army in Manchuria and the geographical 'adjustments' of cities, but Fenneman's role models were not the polymathic geomorphologists with whom he corresponded--not Davis, Bowman, Salisbury, or Atwood--but those historic figures whose biographies he chose to write for his private edification: John Maynard Keynes, Malthus, Thomas Paine, and Jeremiah. When he wrote familiar essays about bronze statues, they were those of Woodrow Wilson and the Methodist pioneer, Bishop Francis Asbury, not the busts of Chamberlin or Salisbury, to which he nonetheless subscribed.

Despite the sprawling extent of his research and his determination to encompass regional entireties, he strove to simplify, 'casting the present account [as he put it] into large molds', deferring rather than denying the complications, and constantly questioning the degree of

generalization 'allowable and advisable'. One postulate informed both volumes of his Physiography that 'the best scheme of division into provinces is the one which makes possible the largest number of general statements about each'. Where irreconcilable or merely divergent interpretations of landforms existed Fenneman rendered each impartially. He did so, Bucher said, because he 'hated polemics as much as dogmatism'--at least in others. In 1919, anticipating a lecture on 'Geology as a mode of thought', he jotted down the bare bones of an argument that seem, with hindsight, almost to define the circumference of Nevin M. Fenneman's 'thinking in terms of long time, of slow change, of ultimate destiny'.

3. INFLUENCE AND SPREAD OF IDEAS

What Fenneman tried to convey was aimed at distinctively and deliberately different audiences. He did not preach to the masses from the top of Mt. Monadnock. His students and university colleagues heard from Fenneman the Educator, his professional associates listened to Fenneman the Scholar, and his social circle knew Fenneman the Moralist. It is doubtful whether Fenneman's students loved him. As a teacher, he was gruff, old-fashioned, tyrannical, scornful, relentless, deliberate, withering, reverberative, tight-lipped, sarcastic, rigorous, resonant, mind-opening, and frightening. He deplored the educational 'drift toward easy and shiftless work' and assured Samuel Van Valkenberg, a European, that he looked upon American students with rather more dignity than they deserve'. His sixteen years of teaching in the grade schools and at the Colorado State Normal College (for teachers) left him with a life-long interest in the goals and practicalities of education. It unsettled his research-obsessed colleagues, who saw fit to separate the educational publications from his other papers when the time came to write his obituary.

Fenneman's educational antipathies were legion. In 1907, he chastised the Regents of the University of Wisconsin for wanting to hire professional coaches for intercollegiate athletics and in 1934 he opposed plans to enlarge the stadium at the University of Cincinnati for 'great football spectacles'. It alarmed him that grades in the Botany laboratories were so much higher on average than in the other laboratory sciences, that 'bootleggers' were visiting the fraternity houses, that 'girls' in the back row should chew gum, and that funds were being denied to schools that taught evolution as a result of pressure from the Princeton Theological Seminary. It did not disturb him that W.M. Davis's Transcontinental Excursion of 1912 was for 'men only', but it appalled him when 'girls' requested a 'loafing place' in McMicken Hall where they could smoke and mingle with 'boys'. 'We must face the question', he instructed President Schneider, 'what kind of girls are going to set the pace in this institution? ... Most people of culture want their daughters under better influence'.

Fenneman was no slavish reactionary who automatically dismissed any call for academic change, although he was by no means the 'extreme radical' for whom Richard E. Dodge mistook him in 1910. 'If I seem to express myself too positively', he told the Natural History Society, 'it is only the professor's habit, a kind of "mark of the beast"'. In his 'Letters to Advanced Students', the positive admonitions abounded: 'What do grades signify?', 'What grades do not signify', 'Interest', 'Excuses', and so on, including 'Love and Geology' for those who sat together in class-- 'a choice tidbit', one alumnus admitted, ranking with the 'lighter humor' of Tennyson, Browning, or Burns. Fenneman staunchly defended the place of geography in the school curriculum and insisted to successive Deans of Education, without much avail, that those who taught geography should be properly trained in it.

He also defended the university faculty against editorial abuse in the Citizen's Bulletin (Cincinnati) and chaired an investigation of Allegheny College in 1918 for the American Association of University Professors. He was then a member of its Committee on Academic Freedom and Academic Tenure but resigned from the AAUP in 1931, fed up with its 'labor union' manners. His openness and even-handedness made Fenneman an effective advocate for the faculty. He candidly told President Dabney in 1916 that the new policy of placing a Dean between himself and the faculty was deplorable, reminding him that 'the highest compliment a man can pay to his superior is to entrust his full case to him without reserve'. He also opposed the designation of 'Fellows' within the Graduate School, feeling that an unwarranted 'order of

nobility' was being created, and resisting the assumption that our faculties are made up of "firsts" and "seconds".

If personal quirks colored Fenneman's influence as an educator, he suppressed them when holding office in the national organizations that served American geographers and geologists. There he was the committee man par excellence, at once patient, receptive, organized and supportive. Whereas W.M. Davis could fulminate against the National Geographic Magazine ('the pictures are superb, as usual; but the geography is peculiar'), Fenneman could seal his lips. He even filed samples of 'courteous language', including an attorney's excuse for being unable to address convocation: 'I am attending to an edifying case of co-responsibility for a lady of consideration'.

For nine of the years between 1908 and 1923, Fenneman held office in the Association of American Geographers, as councilor, treasurer, and president. As late in his life as 1942 he served on its Atwood Award Committee with Carl O. Sauer and Vernor C. Finch, all three of them chagrined when their recommendation not to make the award was overruled by cronies of one applicant. Fenneman became a Fellow of the Geological Society of America in 1904, made five trips to New York as its president in 1935, and chaired its prioritizing Committee on Research Program from 1936 to 1939. He was an active member of the GSA's Committee of Past Presidents for five years. The American Association for the Advancement of Science elected him a Fellow in 1903, and Fenneman served as its AAG representative in 1926-27 and on its Committee on Grants in 1925-27. He organized its 1923 meeting in Cincinnati, but failed as prime promoter of W.M. Davis's candidacy for the AAAS presidency in 1926. In 1922-23, while Prohibition raged, Fenneman served a term as Chairman of the Division of Geology and Geography of the National Research Council. For so prestigious and influential an appointment he was granted sabbatical leave, and lived for the year in Washington, D.C., where he found 'a very decent group of people ... still in that larval stage which marine biologists distinguish as "free swimming", not yet attached to the bottom'.

These four professional affiliations made very different demands on Fenneman, from benignly approving research grants for the AAAS and determining with Solomonic finality that 'geophysics and ocean bottoms should receive immediate and special support' from the Geological Society of America, to breathing life into the almost still-born Association of American Geographers. As only the second treasurer of the nascent AAG, Fenneman of the broad shoulders received the apologetic resignations of those who could not pay their dues (including the unemployed Willard O. Johnson, who remained 'not unmindful of the honor of being an American geographer') and those like the intransigent Cleveland Abbe who simply found geography too peripheral to their main interests. From his Cincinnati heartland, Fenneman could also help resolve the 'east-west' factionalism brewing within the Association. There was despair among its founders when the National Geographic Society proposed to publish its own 'journal of technical geography' in 1912, and 'mutiny among the disadvantaged' members who questioned the 'exclusiveness' of the AAG and the credentials of its office-bearers. Fenneman proposed some ameliorative changes in the by-laws, but was not beyond scrutiny himself. Herbert E. Gregory wished to replace him as treasurer 'by a man who is nearer to the geographic type' and not a geographer 'only by a stretch of that term', but Albert P. Brigham knew better than to snub a friend in court. Brigham represented the devastated Association at the funeral of Ralph Tarr in 1912, and uncovered his feelings in a letter to Fenneman: 'I thought of you all--the inner circle of his friends--as I looked at his coffin ... We will all draw up a little closer in our fellowship'.

Fenneman's circle of intimates, with whom he shared his worst fears and fondest hopes, comprised the sixteen correspondents who reacted to his outline 'geography of Missouri' in 1919, the thirty-one 'powerful individuals' expected to support W.M. Davis for president of the AAAS in 1926, and the colleagues whose criticisms of his manuscripts Fenneman sought and respected. There were the conduits of his influence. Prominent among them were Isaiah Bowman, W.M. Davis, Wallace W. Atwood, Herman Schneider, G.G. Chisholm, Harlan B. Barrows, E.C. Andrews, Ellen C. Semple, Eliot Blackwelder, and Albrecht Penck. In 1945, President Raymond Walters of the University of Cincinnati eulogized Fenneman in the AAAS journal, *Science*. He

mailed 352 offprints to individuals whose lives had been touched by Fenneman's. Only three of them were relatives.

The larger context of Fenneman's enthusiasms can be gauged from his membership in the American Society of Naturalists, Sigma Xi, Phi. Beta Kappa, the Community Chest, the Mount Auburn Presbyterian Church, the English-Speaking Union, the Foreign Policy Association, the City Club, the University Club, the Cosmos Club of Washington, D.C., and, above all else, the Literary Club. 'I like clubs with atmosphere', he would say. There he could promulgate calendar reform or sing parodies of Gilbert and Sullivan, advocate Esperanto and its derivative Ido or tell tales about his outlandish friend, Edgar Hewett, whose second wife was the first lady sanctioned to sleep in the camp of the French Foreign Legion in Syria. Through those clubs he could focus the sympathy of Orville Wright and Charles Kettering on the plight of Dr. August Foerste, a Dayton schoolteacher whose retirement they made possible so that he might find the time, long overdue, to write up his local geological research. While puffing his Pittsburg 'stogies' in such company, the ageing Fenneman could behave, as George Barbour observed, 'like a rejuvenated stream in a land of senescence'. This was most true on the Monday nights between 1910 and 1945, when Fenneman gloried in his membership of the Literary Club. This was the oldest organization of its kind in the United States, a forum founded in 1849 for the purposes of civil conversation and the reading of specially written papers. Over the years, its members have included two Presidents of the United States, several Governors of Ohio, and many of Cincinnati's leaders in public affairs and learning. For Fenneman, it was a wonderful outlet for his only hobby, the writing of essays. He read altogether sixty-six of them to the club, and two more were read posthumously. They had, Van Meter Ames remembered, 'a wisdom and a thought-provoking humor about the great questions of morals and education, and a transforming interest in little things'. Fenneman was President of the Literary Club in 1924-25, during its 75th Anniversary, and his name was the answer to one of the questions on C.B. Firestone's Literary Club Quiz: 'What member used to terrorize the club by invoking "unwritten laws" known only to himself?'

Fenneman attained such dignity that he became the object of fun, celebration, and concern. Students and colleagues arranged dinner parties for his sixtieth and seventieth birthdays, and twenty-seven students expressed their 'deep sympathy' when 'Mrs. Fenneman slipped into the great beyond on Easter eve' in 1920, signing themselves 'Your loyal students'. Now there is an annual Nevin M. Fenneman Memorial Day Banquet, at which 'The Fenneman' (a trophy patched together from a sub-standard house-brick) is awarded for the 'Worst Geographical Thought'. Fenneman even served as the archetype for 'Mr. Mason', the prunes-for-desert character in *Scholars and Gentlemen*, an unpublished novel by Van Meter Ames. Admirers asked for his signed photograph, as E.C. Andrews did: 'Our writings are under our own control in great measure, they form an *ex parte* statement but one's physiognomy is a kind of summary statement of all one's hopes and fears'. The Aetna Life Insurance Company recorded his height as 5 ft 11 inches and his weight as 180 pounds. The oval face pictured on his citizenship certificate in 1915 was itemized as having a regular forehead and chin, brown eyes and hair, dark complexion, straight nose, and a large mouth.

It has been said that 'you are not a genius until you have left a personal mark on your subject'. For all his modesty, Fenneman would have agreed. 'A university man has two duties', he once told his dean, 'one to his students and the other to his subject. His duty to the latter is not to leave it where he found it'. But was his subject geology or geography? Fenneman supplied his own answer: 'I am a geologist whose chief interest is in human beings'.

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2. SELECTIVE THEMATIC BIBLIOGRAPHY OF WORKS BY NEVIN M. FENNEMAN

a. Geography

- 1899 'Climate of the Great Plains', *J. Sch. Geogr.*, vol 3, 1-13
- 1905 'Geography of Manchuria', *J. Geogr.*, vol 4, 6-11
- 1909 'Problems in the teaching of physical geography in secondary schools', *J. Geogr.*, vol 7, 145-157
- 'Some anthropo-geographic effects of glacial erosion in the Alps', *J. Geogr.*, vol 7, 169-172
- 1913 'The Yellowstone National Park', *J. Geogr.*, vol 11, 314-320
- 1915 'The site of Cincinnati', *J. Geogr.*, vol 14, 10-12
- 1916 'Geographic influences affecting early Cincinnati', chapter 1 of *Citizens Book*, Cincinnati Chamber of Commerce
- 1919 'The circumference of geography', *Ann. Assoc. Am. Geogr.*, vol 9, 3-11. Also published in *Geogr. Rev.*, vol 7, 168-175
- 1921 'Ohio (Geography and Geology)', *The New International Encyclopedia*
- 1929 'Physical geography of the United States', *Encyclopedia Britannica*, vol 22, 714-723

b. Physiographic Divisions and Processes

- 1902 'On the lakes of southeastern Wisconsin', *Wis. Geol. Nat. Hist. Surv., Bull*, 8, 178pp. (rev. ed., 1910, 188 pp.)
- 'Development of the profile of equilibrium of the subaqueous shore terrace', *J. Geol.*, vol 10, 1-32
- 'The Arapahoe glacier in 1902', *J. Geol.*, vol 10, 839-51

- 1905 'Effect of cliff erosion on form of contact surfaces', *Bull. Geol. Soc. Am.*, vol 16, 205-14
- 1906 'Floodplains produced without floods', *Bull. Am. Geogr. Soc.*, vol 38, 89-91
- 1908 'Some features of erosion by unconcentrated wash', *J. Geol.*, vol 16, 746-54
- 1909 'Physiography of the St. Louis area', *Illinois State Geol. Surv., Bull. 12*, 83pp.
- 1914 'Physiographic boundaries within the United States', *Ann. Assoc. Am. Geogr.*, vol 4, 84-134
- 1916 'Physiographic divisions of the United States', *Ann. Assoc. Am. Geogr.*, vol 6, 19-98
- 1917 'Physiographic subdivisions of the United States', *Proc. Natl. Acad. Sci.*, vol 3, 17-22
- 1922 'Physiographic provinces and sections in western Oklahoma and adjacent parts of Texas', *U.S. Geol. Surv. Bull. 730*, 115-34
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- 1931 *Physiography of Western United States*, New York, 534 pp.
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- 1938 *Physiography of Western United States*, New York, 714 pp.
- 1939 'The rise of physiography', *Bull. Geol. Soc. Am.*, vol 50, 349-60

c. Resource Surveys

- 1903 'The Boulder, Colorado, oil field', *U.S. Geol. Surv., Bull. 213*, 322-32
- 1904 'Structure of the Boulder oil field, Colorado, with records for the year 1903', *U.S. Geol. Surv., Bull. 225*, 383-91
- 1905 'The Florence, Colorado, oil field', *U.S. Geol. Surv., Bull. 260*, 436-40
- --- 'Oil fields of the Texas-Louisiana Gulf coast', *U.S. Geol. Surv., Bull. 260*, 459-67
- --- 'Geology of the Boulder district, Colorado', *U.S. Geol. Surv., Bull. 265*, 101 pp.
- 'Oil fields of the Texas-Louisiana Coastal Plain', *Min. Mag.*, vol 11, 313-22
- 1906 'Oil fields of the Texas-Louisiana Gulf Coastal Plain', *U.S. Geol. Surv., Bull. 282*, 146 pp.
- 'The Yampa coal field, Routt County, Colorado', *U.S. Geol. Surv., Bull. 285*, 226-39, and *Bull. 297*, 7-81 (with H. S. Gale)
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- 1916 'Geology of Cincinnati and vicinity', *Ohio Geol. Surv., Bull. 19*, 207 pp.
- 1925 'A classification of natural resources', *Science*, vol 61, 191-7

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d. Educational and Other Professional Publications

- 1917 'The museum situation in Cincinnati', J. Cincinnati Soc. Nat. Hist., vol 22, 28-41
- 1922 'Functions of the Division of Geology and Geography of the National Research Council', Science, vol 56, 620-4
- 1925 'What is a university for?', Sch. Soc., vol 21, 393-7
- 'Why we study', Sch. Soc., vol 22, 196-201
- --- 'The case for Latin', Sch. Soc., vol 22, 639-44
- 1936 'The pupil and the student', Sch. Soc., vol 23, 665-9
- 1936 'Presentation of the Penrose Medal to Reginald A. Daly', Proc. Geol. Soc. Am. for 1935, 48-53
- 1938 'A possible program of research in geology, A forum on the present needs of the Society', Proc. Geol. Soc. Am. for 1937, 143-56
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- 1941 'Memorial address (Fellows of the Geological Society of America who died in 1940)', Proc. Geol. Soc. Am. for 1940, 69-71
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3. ARCHIVAL SOURCES

Fenneman died a childless widower. All his personal and professional papers were willed to his colleague and successor, John L. Rich, whose widow, Nellie B. Rich, and whose son, Ralph Rich, donated the papers to the Archives and Rare Books Department of the Carl Blegen Library, University of Cincinnati. Other departmental papers, manuscripts, and photographs were culled from inactive files by Richard Spohn, Geology-Geography Librarian, and were also placed in the Blegen Library. The Fenneman papers now fill eleven small Hollinger boxes (7,000 items) and six large Paige containers (195 folders, 85 field maps, 45 notebooks, glass negatives, photograph albums, and memorabilia--including Fenneman's doctoral hood). The relevant accession numbers are 15/Q9-D/35, UA-73-32, UA-81-35, and UA-84-15. Fenneman's portrait hangs in the Department of Geology, which also inherited his library. His rolltop desk and carved wooden owl repose in the Department of Geography. The archives of The Literary Club have been deposited with the Cincinnati Historical Society, in Eden Park. They contain, in the bound volumes of proceedings, all 68 papers that Fenneman wrote for the Club.

Bruce Ryan is Professor of Geography and Department Head, University of Cincinnati, Ohio 45221-131, U.S.A.

Chronology

- 1865 Born in Lima, Ohio, 26 December
- 1883 A.B., Heidelberg College, Tiffin, Ohio

- 1884-92 Taught mathematics and chemistry at grade schools in Wilkinsburg and Greensburg, Pennsylvania
- 1890 Fieldwork in southwestern Wisconsin
- 1892-1900 Professor of Physical Sciences, Colorado State Normal School, Greeley
- 1893 Married Sarah Alice Glisan of Fredonia, New York, 26 December
- 1895 Studied with William Morris Davis, Harvard University summer school
- 1899 M.A. in geology, University of Chicago; thesis--'The Laramie Cretaceous Series'; first journal publication
- 1901 Ph.D. in geology, University of Chicago; thesis--'The development of the profile of equilibrium of the subaqueous shore Terrace'
- 1902-03 First Professor of Geology, University of Colorado, Boulder
- 1903-07 Professor of Geology, University of Wisconsin, Madison
- 1904 Charter member of Association of American Geographers; elected Fellow of Geological Society of America
- 1904-05 Travel in Europe; fieldwork in Colorado, North Dakota, Texas, and Louisiana
- 1906 Fieldwork in Missouri
- 1907-37 Foundation Professor of Geology and Geography, and Department Head, University of Cincinnati, Ohio
- 1908 Attended International Geographical Congress, Geneva
- 1908-12 Treasurer, Association of American Geographers
- 1910 Attended International Geological Congress, Stockholm; elected to membership in The Literary Club
- 1912 Journalist for American Geographical Society's Transcontinental Excursion
- 1913 Attended International Geological Congress, Toronto
- 1914 Presented claims of Cincinnati for a 'regional' [Federal Reserve] bank; published first version of 'physiographic boundaries within the United States'
- 1915-16 Sabbatical leave in Washington, D.C.
- 1918 President, Association of American Geographers; delivered the Presidential Address, 'The Circumference of Geography', at Baltimore meeting
- 1918-21 Headed African section of Colonel Edward M. House's 'Inquiry' re the peace settlement
- 1919 Field camp at Lake Superior
- 1920 Mrs. Sarah Glisan Fenneman died, 2 April
- 1920-23 Expert witness for U.S. Department of Justice re Golden Lake and Young's Lake, Arkansas
- 1922-23 Chairman, Division of Geology and Geography, National Research Council, Washington, D.C.
- 1922-27 Industrial Resource Survey for Commercial Club of Cincinnati
- 1923 Attended Pan-Pacific Scientific Congress, Australia
- 1924 Commonwealth Fund Conference on Social Values; Hired Miss Lillian Smith as department secretary

- 1924-25 President of The Literary Club during its 75th anniversary
- 1925-27 Committee on Grants, American Association for the Advancement of Science
- 1926 Attended Pan-Pacific Scientific Congress, Japan, also visiting China and the Philippines; nominated W.M. Davis for President, American Association for the Advancement of Science
- 1927 Councilor, American Association for the Advancement of Science, representing the Association of American Geographers
- 1928 Third edition of 'Physiographic Divisions of the United States'
- 1930-41 Nine summer field seasons at Red Lodge, Montana, with Yellowstone-Bighorn Research Association
- 1931 Published Physiography of Western United States
- 1932 Vice president, Geological Society of America
- 1935 President, Geological Society of America; elected corresponding member, American Geographical Society
- 1936 President, Yellowstone-Bighorn Research Association; Chairman, Past Presidents of Geological Society of America
- 1936-39 Chairman, Committee on Research Program of the Geological Society of America
- 1937 Professor Emeritus, University of Cincinnati; succeeded as Department Head by Walter H. Bucher; 30th anniversary of Department of Geology and Geography
- 1938 Published Physiography of Eastern United States; awarded Gold Medal by Geographic Society of Chicago
- 1940 Awarded Honorary LL.D., University of Cincinnati; Commencement speaker
- 1941 Atwood Award Committee, Association of American Geographers; Hayden Medal Committee, Philadelphia Academy of Natural Science
- 1941 Portrait painted by Frank H. Myers
- 1945 Phi Beta Kappa address; died in Cincinnati, 4 July; buried in Fredonia, New York, 7 July