Memorial to Morris Morgan Leighton
1887—1971

LOUIS L. RAY
U.S. Geological Survey, Washington, D.C.



On January 7, 1971, the distinguished career of Morris Morgan Leighton came to a close in Urbana, Illinois. For more than half a century he was one of the best known and respected of American geologists and the profession's outstanding scientific administrator. To his many personal friends and colleagues he was an inspiring leader and teacher of great patience and wisdom. Although constantly stressing the importance and satisfaction to be derived from the field study of nature – where the great truths are revealed to the inquiring mind – his greatest pleasure was informing others of nature's unfailing orderliness and logic. To him the truly devoted geologist was a disseminator of his acquired knowledge so that it could be utilized for the benefit of mankind in the understanding of his environment and in the use of the available natural resources. Although he was not a part of the recent environmental movement, his beliefs in understanding the environment and the wise use of natural resources held the essence of the present ideas of conservation and environmental protection.

Love of and closeness to nature were an integral part of the Leighton family tradition, inherited from its long and intimate association with the rugged and frugal life in early rural Maine. When, in 1843, the Leightons left Maine to seek a new home on the rich farm lands of Iowa, they followed the overland and water routes along the Ohio and Mississippi Rivers. Stephen Tibbetts Leighton, father of Morris Morgan, was only a lad of four years at the time of the migration. Following family tradition, he was reared in a rigorous environment of independence, self-reliance, and stern morality so characteristic of pioneering families. As a result, eighteen years after moving to Iowa, Stephen volunteered for three years' service in the Union Army. During these years young Leighton was engaged in the siege of Vicksburg and was wounded near Lovejoy Station Georgia. After being mustered from the Army he returned to Iowa and shortly thereafter was married to Jane Wellman, daughter of another pioneering family. It was near Wellman, Iowa, the town named for his maternal grandfather, that Morris Morgan Leighton, one of six sons and two daughters, was born on August 4, 1887.

Young Morris attended the local schools and in 1903 was graduated from the 10-grade Wellman Public School. During his last two years at school he had worked as a printer's apprentice and by 1906, while making up the necessary credits for university admission, had advanced to the status of full-fledged printer. From 1907 to 1909 he continued working, becoming superintendent of the Weber Printing Co. of Iowa City, while helping to finance the medical education of one of his brothers.

In 1909, Morris enrolled as a student at the State University of Iowa. At that time he entertained the idea of going into the ministry. Such thoughts were soon dispelled after he enrolled in the General Geology course of Professor Arthur C. Trowbridge. The enthusiasm and inspiration of Trowbridge and of Professors Samuel Calvin and George F. Kay not only convinced Leighton that he wished a career in geology but that glacial geology was to be his chosen field of interest. In 1912, when he received a Bachelor's degree from the University of Iowa, he was awarded the Frank O. Lowden Fellowship to continue his studies in geology there. The following year he received a Master's degree in geology and published his first papers on the glacial geology of Iowa. His future course had been determined!

For the next two years Leighton held a fellowship at the University of Chicago where he, like so many others, fell under the spell of the eminent and revered professors T. C. Chamberlin, R. D. Salisbury, and Stuart Weller – men who were to mean much to him in later years. Frequently in the field or when discussing field problems, Leighton would quote Professor Chamberlin or express his opinion as to how Chamberlin would have dealt with the problem under discussion.

Between academic years at the University of Chicago, Leighton was field assistant to a fellow Iowan and graduate of the University of Chicago, W. C. Alden of the U.S. Geological Survey. Alden was engaged in a detailed study of the Iowan Stage of glaciation in Iowa – a problem that was to claim Leighton's attention for the remainder of his life. By 1915 Leighton had fulfilled all requirements but that of the thesis for his Doctorate, and, with an Instructorship in Geology at the University of Washington, Seattle, he launched an academic career. On completion of his thesis, "Iowan Drift. Review of the evidence of the Iowan Stage of Glaciation," he received his Doctorate *Cum Laude* in 1916. The following year he was Assistant Professor of Geology at Iowa State Teachers College in Cedar Falls, leaving there to return to the University of Washington in 1917 as an Assistant Professor and a member of the Washington State Geological Survey.

In 1918 Leighton was called back to the Midwest as an Acting Professor of Geology at Ohio State University. He remained there only a year, for during that time Professor Eliot Blackwelder, then Head of the Geology Department of the University of Illinois, insisted that he come to Urbana as an Assistant Professor of Geology. There Leighton could also work with the Illinois Geological Survey, whose Chief, Frank W. DeWolf, was likewise a former Iowan and a graduate of the University of Chicago.

Leighton found academic life completely rewarding; furthermore, his teaching was supplemented by work on the State Survey, which enabled him to study the glacial deposits and Quarternary history of Illinois. He was supremely happy in his adopted state, though interest in his native Iowa never flagged. When DeWolf resigned from the Illinois Geological Survey in 1923, Leighton was approached to replace him as Chief. It was with great reluctance that he decided to leave teaching for the challenge of directing the State Survey. However, his overwhelming interest in teaching continued to shape the destinies of many young men in the field. To him, geology was man's most intellectual pursuit and education was the major device for its dissemination.

With his boundless enthusiasm, broad vision, and appreciation of the basic tenets of science, Dr. Leighton molded the Illinois State Geological Survey during the next 31 years according to his beliefs as to the express purpose and function of such an organization, especially one suited to serve the citizens of Illinois. These beliefs, expressed in numerous papers, emphasized that "nature does not distinguish between geology, physics, chemistry, and other sciences; it is in the administration of research and teaching that such categories are set up because no one can be a specialist in them all." Furthermore, cooperation of geologists with specialists in the supporting disciplines was essential to attain basic results and an understanding of geologic problems that could be used in the shaping of sound policies, not only for the proper utilization, but for the conservation of natural resources.

This early, farsighted concept of research coordination led to an expansion of the Survey personnel from 20 in 1923 to 132 some thirty years later. Although the location of the Geological Survey in the old Ceramics Building on the campus of the University of Illlinois permitted close liasion with experts in many widespread fields within the University, the increased Survey personnel soon made the cramped quarters inadequate. As a result, Leighton successfully urged the use of State and Federal funds for the building of a suitable home with adequate office and laboratory space for the Survey. In 1940 the large and handsome Illinois Natural Resources Building was dedicated on the campus of the University to house the Geological and the Natural History Surveys. Today, after more than 30 years, the home of the Illinous Geological Survey ranks as one of the finest, if not the finest, in the country. The Survey, with M. M. Leighton as Chief, grew to be the largest and most versatile of all such state organizations and an outstanding organization for geologic research and services in both field and laboratory.

During his long period of scientific productivity, Dr. Leighton published more than 150 technical papers. Of these, more than 20, including some of his most important, were written following his retirement in 1954. His field studies likewise continued, for, as consultant in Pleistocene geology to the U.S. Geological Survey, he was frequently in the field, restudying old localities to see if his ideas required modification, and looking for new localities that might aid in proving or disproving accepted theories. Never did he lose his zest and desire to find the truth through field investigations.

As a result of his many years of study of the glacial deposits of the Midwest, especially in Illinois, Leighton brought clarity and logic to its glacial history. For example, his earliest work with Alden on the problem of the Iowan glaciation led him in the early 1930's to the conclusion that the Iowan was not a separate glacial stage but was a substage of Wisconsin age, thereby modifying the long-held concept of five glacial stages by reducing them to four. Likewise, he proposed for the Early, Middle and Late Wisconsin of Leverett, the Iowan, Tazewell, and Cary substages. That there was a Wisconsin substage older than the Iowan was inferred by Leighton in the 1940's when a Farmdale loess was recognized along the valleys of the Mississippi, Missouri, and Ohio Rivers. This loess, lying below the Peorian and above the deeply weathered loess or till of Illinoian age, led to its ultimate correlation with a drift in northwest Illinois, the oldest of the recognized tills of Wisconsin age.

Continued study led to the inclusion of the youngest glacial substages of the Wisconsin, the Mankato and the Valders. It was in 1960 that Leighton summarized in a critical paper in the *Journal of Geology* his carefully considered classification of the Wisconsin glacial stage and the intraglacial substages of the north-central United States.

In 1965 he summarized in the *Journal of Geology* the stratigraphic succession of loess deposits in the Upper Mississippi River valley. This paper, the result of many years of careful study, not only in the Upper but in the Lower Mississippi and Ohio valleys, was the natural outgrowth of his much-quoted paper with H. B. Willman on the loess formations of the Mississippi Valley in the *Journal of Geology* for 1950.

In order to determine the relative ages of glacial deposits, Leighton became deeply interested in the profiles of weathering developed on the deposits. His discussions in the field with Glinka, the great Russian soil scientist, stimulated his interest in the geologic implications of weathering and profile development. This interest resulted in a classic paper with Paul MacClintock in the *Journal of Geology* for 1930 on the weathered zones of drift sheets in Illinois. In this paper they identified and discussed the five zones of the weathering profile that are now universally accepted by geologists. In 1962, Leighton and MacClintock once again restated and expanded their beliefs in the orderly process of weathering of glacial tills under a variety of local conditions.

As an active member of numerous professional societies, Dr. Leighton held many elective offices and was recipient of many honors; his business acumen resulted in his being Business Editor of *Economic Geology* from 1943 to his resignation in 1965. His society affiliations were: Fellow, American Association for the Advancement of Science, vice president, 1941; Honorary Member, American Association of Petroleum Geologists; Honorary Member, American Association of State Geologists, president 1931-34; Fellow, American Academy of Arts and Sciences; American Ceramic Society; American Geological Institute, director, 1950, president, 1956; Honorary Member, Chicago Academy of Science; Fellow, Chicago Geographical Society; Fellow, The Geological Society of America, Councilor, 1937-40; Illinois State Academy of Science, president, 1930; Illinois Mining Institute, president, 1941; Illinois Society of Engineers, director 1924-27; Illinois State Museum Board, 1937-1961, chairman 1957-1967; Fellow, Royal Society; Society of Economic Geologists, councilor 1945, president 1950; Western Society of Engineers. He was also a member of the Advisory Committee of the U.S. Geological Survey, 1943-1959; of the Coordinating Committee on National Water Policy, 1950-1951; of the U.S. Delegation to the 20th International Geological Congress, Mexico City, 1956; and was Honorary Vice President, 7th Congress, International Association for Quaternary Research (INQUA), Boulder, Colo., 1965. During World War II, Dr. Leighton was a member of the Advisory Committee on Metals and Mining, Office of Production Management; a Civilian Advisor of the Office of Emergency Management; and a member of the War Production Board. Later (1945-1947) he was appointed Vice Chairman of the Illinois Post-War Planning Comm. and Chairman of the Comm. on Resources. In 1947 he was named Distinguished Alumnus of the University of Iowa, and in 1954 was awarded an Honorary Doctorate of Science by the University of Southern Illinois.

On August 12, 1913, M. M. Leighton was married at Fort Dodge, Iowa, to Ada Harriet Beach, a fellow student taking geology at the University of Iowa under Professor Trowbridge. To this happy couple were born three sons in whom there was instilled a love for teaching and a zest for work well done.Two of the sons are geologists – Freeman Beach Leighton, Professor of Geology, Whittier College, and President, F. Beach Leighton Associates, La Habra, California; and Morris Wellman Leighton, Exploration Manager, Esso Australia, Sydney, Australia. The third son, Richard Tibbets Leighton, is President of the Woodward Governor Co., Rockford, Illinois.

Memorial services were held at the Wesley United Methodist Church in Urbana, Illinois, and an M. M. Leighton Memorial Fund for student aid has been established in the Department of Geology at the University of Illinois. His memory is cherished by his many friends and colleagues throughout the world, for he was not only well-known internationally through his publications on glacial geology and as a scientific admininstrator, but through his professional and personal interest shown to geologists visiting in Illinois.

The writer wishes to express his gratitude to the family of Dr. Leighton for their aid in furnishing information for this memorial that is not available elsewhere.

BIBLIOGRAPHY OF MORRIS M. LEIGHTON

1913 An exposure showing post-Kansan glaciation near Iowa City, Iowa: Jour. Geology, v. 21, p. 431-435.

—— Additional evidences of post-Kansan glaciation in Johnson Co., Iowa: Iowa Acad. Sci. Proc., v. 20, p. 251-256.

1915 Leaching of the Pleistocene drifts of eastern Iowa [abst.]: Science, n.s., v. 41, p. 951.

1916 The Pleistocene history of Iowa River valley north and west of Iowa City in Johnson Co: Iowa Geol. Survey, v. 25, p. 103-181.

—— Superimposition of Kansan drift on sub-Aftonian drift of eastern Iowa: Iowa Acad. Sci. Proc., v. 23, p. 133-139.

—— Superimposition of Kansan drift on sub-Aftonian drift of eastern Iowa [abst.]: Science, n.s., v. 44, p. 68.

1917 Post-Kansan erosion: Iowa Acad. Sci. Proc., v. 24, p. 83-85.

—— The Buchanan gravels of Calvin and the Iowan valley trains: Iowa Acad. Sci. Proc., v. 24, p. 86.

—— The Iowan glaciation and the so-called Iowan loess deposits: Iowa Acad. Sci. Proc., v. 24, p. 87-92.

—— (with Alden, W. C.) The Iowan drift; a review of the evidences of the Iowan stages of glaciation: Iowa Geol. Survey, v. 26, p. 49-212.

1918 The country about Camp Lewis (Wash.): Washington Geol. Survey Bull. 18, 105 p.

1919 The road-building sands and gravels of Washington: Washington Geol. Survey Bull. 22, 307 p.

1920 Gravel deposits of Illinois: Illinois Soc. Engineers, 35th Ann. Rept., p. 73-74.
—— The present status of the Pleistocene in Illinois [abst.]: Science, n.s., v. 51, p. 521.
1921 Post-Illinoian drift in northern Illinois west of the mapped Wisconsin moraine [abst.]: Geol. Soc. America Bull., v. 32, p. 86-87.
—— The Pleistocene succession near Alton, Illinois, and the age of the mammalian fossil fauna: Jour. Geology, v. 20, p. 505-514.
1922 Further data on the differentiation of the glacial drift sheets of northern Illinois [abst. with discussion by Frank Leverett]: Geol. Soc. America Bull., v. 33, p. 116-117.
—— The glacial history of the Sangamon River valley at Decatur and its bearing on the reservoir project: Illinois State Acad. Sci. Trans., v. 14, p. 213-218.
1923 The origin of the Cahokia mounds [abst.]: Illinois State Acad. Sci. Trans., v. 16, p. 327.
—— Pleistocene of northwestern Illinois; a graphic presentation of some of the chief lines of evidence [abst.]: Geol. Soc. America Bull., v. 34, p. 90.
—— Fossiliferous loess beneath tilted Galena dolomite at the border of the Belvidere lobe in northwestern Illinois [abst.]: Geol. Soc. America Bull., v. 34, p. 90.
—— The differentiation of the drift sheets in northwestern Illinois: Jour. Geology, v. 31, p. 265-281.
—— Geology and the Decatur (Illinois) dam and reservoir project: Eng. News Record, v. 91, p. 264-266.
—— Discussion by M. M. Leighton and O. E. Meinzer *of* Bretz, J. H., Glacial drainage on the Columbia Plateau: Geol. Soc. America Bull., v. 34, p. 573-608.
—— The geological aspects of some of the Cahokia (Illinois) mounds: Illinois Univ. Bull., v. 21, p. 57-97.
—— Modern geology and its contribution to engineering: Western Soc. Eng. Jour., v. 28, p. 491-506.
1925 The glacial history of the Elgin region: Illinois State Acad. Sci. Trans., v. 17, p. 65-71.
—— Memorial to Dr. Thomas L. Watson: Science, n.s., v. 61, p. 255-256.
—— Field meeting of the Association of American State Geologists: Science, n.s., v. 62, p. 452-453.
—— A notable type Pleistocene section; the Farm Creek exposure near Peoria, Illinois: Jour. Geology, v. 34, p. 167-174: Illinois State Geol. Survey Rept. Inv. 11, p. 3-9; Illinois State Acad. Sci. Trans., v. 18, p. 167-174.
1926 Review of studies in glacial sedimentation prior to 1925, *in* Twenhofel, W. H., and others, Researches in sedimentation in 1925-1926; report of the committee on sedimentation [mimeographed]: Natl. Research Council, Washington, D.C., p. 66-67.
—— Studies of glacial sediments in 1925, *in* Twenhofel, W. H., and others, Research in sedimentation in 1925-1926; report of the committee on sedimentation [mimeographed]: Natl. Research Council, Washington, D.C., p. 68-69.
—— Glacial geology and engineering in Illinois: Illinois State Acad. Sci. Trans., v. 19, p. 246-249.
1927 Studies of glacial sediments in 1926, *in* Twenhofel, W. H., and others, Researches in sedimentation in 1926-1927; report of the committee on sedimentation [mimeographed]: Natl. Research Council, Washington, D.C., p. 42-52.

1928 State geological surveys: American Year Book, 1927, p. 158-162.
—— Lake Illinois and the question of post-early Wisconsin deformation in northern Illinois [abst.]: Geol. Soc. America Bull., v. 39, p. 215; Pan-Am. Geologist, v. 49, p. 147.
—— Exposure showing late Sangamon loess and early Pleistocene loess, with their soil zones (Illinois) [abst.]: Geol. Soc. America Bull., v. 39, p. 215; Pan-Am. Geologist, v. 49, p. 147.
—— Studies of glacial sediments in 1927: Natl. Research Council Reprint and Circ. Ser. 85, p. 43-60.
1929 (and MacClintock, Paul) Modern and interglacial weathered zones; their structure, conditions of development, and usefulness in correlation and in interpreting interglacial history [abst.]: Geol. Soc. America Bull., v. 40, p. 124-125; Pan-Am. Geologist, v. 51, p. 151.
—— (with Bell, A. H.) Nebraskan, Kansan, and Illinoian tills near Winchester, Ill.: Geol. Soc. America Bull., v. 40, p. 481-489; Geol. Soc. America [abst.], v. 40, p. 124; Pan-Am. Geologist, v. 51, p. 155.
1930 Studies of glacial sediments in 1928: Natl. Research Council Reprint and Circ. Ser. 92, Rept. Comm. Sedimentation, p. 82-103.
—— (and MacClintock, Paul) Weathered zones of drift sheets of Illinois: Jour. Geology, v. 38, p. 28-53; reprinted as Illinois State Geol. Survey Rept. Inv. 20.
—— (and MacClintock, Paul, and Wanless, H. R.) Further work on the profiles of weathering of the glacial drift sheets of Illinois and their application to the study of the underclays of coal [abst.]: Geol. Soc. America Bull., v. 41, p. 84-85; Pan-Am. Geologist, v. 53, p. 129.
—— What the Paleozoic submergences did for Illinois and the Middle West: Pit and Quarry, v. 20, p. 44-50; Western Sic. Eng. Jour., v. 35, p. 371-383.
1931 Studies in glacial sediments in 1929: Natl. Research Council Reprint and Circ. Ser. 98, Rept. Comm. Sedimentation, p. 79-97.
—— The State Geological Survey during the period 1923-1930: Illinois Geol. Survey Bull. 60, p. 45-61.
—— The Peorian loess and the classification of the glacial drift sheets of the Mississippi Valley: Jour. Geology, v. 39, p. 45-53.
—— New light on the so-called Peorian interglacial epoch and the Iowan-Wisconsin glacial succession [abst.]: Geol. Soc. America Bull., v. 42, p. 182-183; Pan-Am. Geologist, v. 55, p. 71.
—— Loess deposits and their nomenclature [abst.]: Geol. Soc. America Bull., v. 42, p. 325; Pan-Am. Geologist, v. 55, p. 235.
—— (and Powers, W. E.) Evaluation of boundaries in the mapping of glaciated areas [abst.]: Geol. Soc. America Bull., v. 42, p. 229; Pan-Am. Geologist, v. 55, p. 314.
1932 (with Townley, Enid, and others) Studies in glacial sediments in 1930-1931: Natl. Research Council Bull. 89, Rept. Comm. Sedimentation, p. 182-229.
—— (and Ekblaw, G. E.) Annotated guide across Illinois, *in* Alden, W. H., and others, Glacial geology of the Central States: 16th Internatl. Geol. Cong., United States, 1933, Guidebook 26, Excursion C-3, p. 13-23.
—— Summary information on the State Geological surveys and the United States Geological Survey: Natl. Research Council Bull. 88, 136 p.
—— Did prehistoric men live in the middle West?: Sci. Monthly, v. 34, p. 77-79.
—— Elimination of the Peorian interglacial epoch from the North American

classification [abst.]: Geol. Soc. America Bull., v. 43, p. 176.
1932 The research program of the Illinois Geological Survey: Econ. Geology, v. 27, p. 391-394.
—— Our mineral resources and researches (Illinois): Western Soc. Eng. Jour., v. 37, p. 333-347.
1933 The naming of the subdivisions of the Wisconsin glacial age: Science, n.s., v. 77, p. 168.
—— (with Kay, G. F.) Eldoran epoch of the Pleistocene period: Geol. Soc. America Bull., v. 44, p. 669-674.
—— Some geological conditions governing location, drilling, and casing of wells [abst.]: Water Works and Sewerage, v. 80, p. 174.
1934 (and Powers, W. E.) Evaluation of boundaries in the mapping of glaciated areas: Jour. Geology, v. 42, p. 77-87.
—— The functions of State geological surveys: Assoc. Am. State Geologists Jour., v. 5, p. 4-6.
—— (and Ekblaw, G. E.) The glaciology of the Decatur region [abst.]: Illinois Acad. Sci. Trans., v. 27, p. 111.
1935 (and Townley, Enid, and others) Studies in glacial sediments in 1932-1933: Natl. Research Council Bull. 98, p. 82-145.
—— Research program of the Illinois State Geological Survey: Science, n.s., v. 82, p. 594-595.
1936 Researches in rock-wool resources: Texas Univ. Bull. 3501, p. 65-86.
—— A model State resource survey: Texas Univ. Bull. 3501, p. 163-171.
—— Geological aspects of the findings of primitive man near Abilene, Tex., preliminary report (Foreword by E. B. Sayles): Medallion Papers 24, 44 p., Globe, Ariz.
—— The glacial history of the Quincy, Ill., region: Illinois Acad. Sci. Trans., v. 29, p. 172-176.
1937 (with Grim, R. E., and Bray, R. H.) Weathering of loess in Illinois [abst.]: Geol. Soc. America Proc. 1936, p. 76.
—— (with Workman, L. E.) Search for ground-water (in Illinois) by the electrical resistivity-method: Am. Geophys. Union Trans. 18th Ann. Mtg., Pt. 2, p. 403-409.
—— The significance of profiles of weathering in stratigraphic archaeology, *in* Early Man, G. G. MacCurdy, ed., p. 163-172; [abst.] Pan-Am. Geologist, v. 67, p. 375.
—— Coming through as expected: Illinois Jour. Commerce, v. 19, p. 13.
—— Mineral resources and future possibilities. Sec. 6 of rept. on certain physical, economic, and social aspects of the valley of the Kaskaskia River in the State of Illinois: Urbana, Ill., Illinois Univ., p. 25-35.
1938 Geology of soil drifting on the Great Plains: Sci. Monthly, v. 47, p. 22-33.
—— Our exhaustible resources of minerals; what should be the aims of a conservation program?: Illinois Acad. Sci. Trans., v. 31, p. 15-18.
1939 Lobate and interlobate morainal phenomena in northeastern Illinois [abst.]: Geol. Soc. America Bull., v. 50, p. 2000-2001.
—— (with Weller, J. M., and McQueen, H. S.) Guide to field studies between East St. Louis, Ill., Cape Girardeau, Mo.; Cape Girardeau, Mo. to Vienna, Ill., and return; Cape Girardeau and "Embayment Missouri" areas; Cape Girardeau to St. Louis, Mo.; St. Louis to Rolla, Mo., *in* Guidebook 13th ann. field conf., southwestern

Illinois and southeastern Missouri, Aug. 30 to Sept. 3, 1939, Kansas Geol. Soc., p. 16-104.

1940 The research work and public activities of the State Geological Survey: Illinois State Geol. Survey Circ. 64, 23 p.

1941 (with Thwaites, F. T., and White, G. W.) Glacial map of North America; 4, East-Central United States [abst.]: Geol. Soc. America Bull., v. 52, p. 1920.

—— Major aspects of the glacial history of Illinois [abst.]: Geol. Soc. America Bull., v. 52, p. 2027-2028.

1942 Illinois' mineral resources, mapped by Geological Survey, important in War: Illinois State Geol. Survey Circ. 87, reprinted from Blue Book of State of Illinois, 1941-42, p. 448-461.

1943 (with Carroll, D. L.) The historical development of the Illinois coal industry and the State Geological Survey: Illinois State Geol. Survey Circ. 89, reprinted from Illinois Min. Inst. Proc. 1942, p. 43-52.

—— Memorial to Frank Collins Baker (1867-1942): Geol. Soc. America Proc. 1942, p. 167-172.

—— William Shirley Bayley (1861-1943): Science, v. 98, p. 145-146; Illinois State Acad. Sci. Trans., v. 36, p. 29-30; Geol. Soc. America Proc. 1943, p. 105-115, 1944.

1944 The coal research program of the Illinois Geol. Survey: Illinois State Geol. Survey Bull. 68, p. 47-49.

—— (and others) Progress reports on subsurface studies of the Pennsylvanian system in the Illinois Basin: Illinois State Geol. Survey Rept. Inv. 93, 87 p.

—— Undiscovered oil reserves in Illinois: Oil Weekly, v. 113, p. 30-32; reprinted in Illinois State Geol. Survey Circ. 106, p. 3-5.

1945 The Illinois State Geological Survey in war mineral research: Illinois State Geol. Survey Circ. 121, 23 p.

—— Illinois Geological Survey's activities in war and peace [abst.]: Geol. Soc. America Bull., v. 56, p. 1176; Econ. Geology, v. 40, p. 597.

1946 Geological implications of the loesses of the upper Mississippi River Valley region [abst.]: Geol. Soc. America Bull., v. 57, p. 1213.

—— Operation of the Illinois State Geological Survey: Illinois State Geol. Survey Circ. 126, 49 p.

—— Today's requirements for a State Geological Survey: Missouri Geol. Survey and Water Resources Inf. Circ. 1, p. 16-22.

—— The program and research laboratories of the Illinois Geological Survey: Science, v. 104, p. 188-190.

—— (with Ekblaw, G. E., and Horberg, C. L.) Physiographic divisions of Illinois [abst.]: Geol. Soc. America Bull., v. 57, p. 1269.

1948 (and Willman, H. B.) Outline of the Late Cenozoic history of southern Illinois [abst.]: Geol. Soc. America Bull., v. 59, p. 1335.

—— Covering old and new ground (study of geology): School Sci. and Math., v. 48, p. 34-39; reprinted as Illinois State Geol. Survey Circ. 140.

—— (with Ekblaw, G. E., and Horberg, C. L.) Physiographic divisions of Illinois: Jour. Geology, v. 56, p. 16-33; reprinted as Illinois State Geol. Survey Rept. Inv. 129.

1949 Covering old and new ground (study of geology): Mineralogist, v. 17, p. 115-118.

1949 (and Bell, A. H.) Prospects for oil discoveries in Illinois beyond proven areas and from deeper horizons: Illinois State Geol. Survey Circ. 150, 5 p.
—— (and Willman, H. B.) Itinerary of (2nd Pleistocene) field conference; Late Cenozoic geology of Mississippi Valley, southeastern Iowa to central Louisiana, June 12-25, 1949: Urbana, Ill., auspices of the State Geologists, 86 p.
—— (and Shaffer, P. R.) Newly discovered extension of the Labradorian ice sheet into eastern Iowa during Tazewell substage of the Wisconsin stage [abst.]: Geol. Soc. America Bull., v. 60, p. 1904.
—— (and Willman, H. B.) Loess formations of Mississippi Valley [abst.]: Geol. Soc. America Bull., v. 60, p. 1904-1905.
1950 Mineral resource research and activities of the State Geological Survey, 1948-1949: Illinois State Geol. Survey Circ. 166, p. 161-181.
—— (and Willman, H. B.) Loess formations of the Mississippi Valley: Jour. Geology, v. 58, p. 599-623; Illinois State Geol. Survey Rept. Inv. 149.
1951 Natural resources and geological surveys: Econ. Geology, v. 46, p. 563-577; reprinted as Illinois State Geol. Survey Circ. 174.
1953 (and Willman, H. B.) Basis of subdivisions of Wisconsin glacial stage in northeastern Illinois: Pt. 1, Itinerary of joint geological field conf. [guidebook], 4th biennial Pleistocene Field Conf., June 10-17, 1953, p. 1-73.
—— Our natural resources – their continuing discovery and human progress: Ohio Div. Geol. Survey Inf. Circ. 12, 16 p.
1954 (and Willman, H. B.) Geomorphology of the junction of the upper and the lower Mississippi River valley [abst.]: Geol. Soc. America Bull., v. 65, p. 1278.
1956 Reply by M. M. Leighton to discussion by R. V. Ruhe *of* Horberg, C. L., Radiocarbon dates and Pleistocene chronology problems in the Mississippi Valley region: Jour. Geology, v. 64, p. 191-194.
1957 The Cary-Mankato-Valders problem (Mich.-Wis.): Jour. Geology, v. 65, p. 108-111.
—— Radiocarbon dates of Mankato drift in Minnesota (with discussion by H. E. Wright, Jr.): Science, v. 125, p. 1037-1039.
1958 Some reflections on certain aspects of the problems of the Des Moines lobe and Lake Agassiz, *in* Friends Pleistocene Midwestern Guidebook, 9th Ann. Field Conf., May 1958: N. Dakota Geol. Survey Misc. Ser. 10, p. 58-61.
—— Walter Curran Mendenhall (1891-1957): Am. Assoc. Petroleum Geologists Bull., v. 42, p. 682-690.
—— Important elements in the classification of the Wisconsin glacial stage (Mississippi Valley): Jour. Geology, v. 66, p. 288-309; errata p. 596.
—— Principles and viewpoints in formulating the stratigraphic classifications of the Pleistocene: Jour. Geology, v. 66, p. 700-709.
1959 Stagnancy of the Illinoian glacial lobe east of the Illinois and Mississippi Rivers (Ill.): Jour. Geology, v. 67, p. 337-344.
—— Reply by M. M. Leighton to Ruhe, R. V., and Scholtes, W. H., Important elements in the classification of the Wisconsin glacial stage (Iowa) – a discussion: Jour. Geology, v. 67, p. 585-598.
1960 The classification of the Wisconsin glacial stage of north central United States: Jour. Geology, v. 68, p. 529-552.
—— Bearing of the loess deposits along Mississippi River Valley on the stream's regimen during Late Pleistocene [abst.]: Geol. Soc. America Bull., v. 71, p. 1914-1915.

1961 (with Brophy, J. A.) Illinoian glaciation in Illinois: Jour. Geology, v. 69, p. 1-31.
1962 (with MacClintock, Paul) The weathered mantle of glacial tills beneath original surfaces in north-central United States: Jour. Geology, v. 70, p. 267-293.
—— (with Brophy, J. A.) Illinoian and Wisconsin (Farmdale) drifts recently exposed at Rockford, Illinois: Science, v. 139, p. 218-221.
1965 (with Ray, L. L.) Glacial deposits of Nebraskan and Kansan age in northern Kentucky: U.S. Geol. Survey Prof. Paper 525-B, p. B126-B131.
—— The stratigraphic succession of Wisconsin loesses in the upper Mississippi River valley: Jour. Geology, v. 73, p. 323-345.
1966 (with Brophy, J. A.) Farmdale glaciation in northern Illinois and southern Wisconsin: Jour. Geology, v. 74, p. 478-499.
—— Recollections and reflections – The Illinois Geological Survey 1905-1954: Geotimes, v. 11, no. 2, p. 13-17.
1968 Arthur Charles Bevan (1888-1968): State Geologists Jour., v. 20, p. 25-26.
—— The Iowan glacial drift sheets of Iowa and Illinois: Jour. Geology, v. 76, p. 259-279.