

A HISTORY OF THE DEPARTMENT OF GEOLOGY AND GEOGRAPHY, DENISON UNIVERSITY, GRANVILLE, OHIO^{1, 2}

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Abstract. Instruction in geology, mineralogy and geography has gone on continuously at Denison University since 1836, five years after the founding of the school at Granville, Ohio. Outstanding instructors have been L. E. Hicks, Clarence Luther Herrick, W. G. Tight, Frank Carney, Kirtley Mather, and Frank J. Wright. These teachers were conspicuously successful in motivating and inspiring a large group of persons to pursue professional careers. An unusual number of graduates went on to achieve distinction at the national level.

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Denison University was founded in the late autumn of 1831 as the Granville Literary and Theological Institution. Its name was soon changed to Granville College, and in 1854 changed to Denison University. The founders were urged by Jonathan Going, a remarkable educator from New England, to establish a training school for young men about to enter the ministry. A letter dated 10 March 1832 from Going to John Pratt, the first principal of the new institution, has been preserved. In it Going says, "In regard to young men around you who are to enter the ministry, I advise that you bring them to Granville, and while you improve their minds in literature and science, aid them in the knowledge of theology, as much as your time, and their circumstances, will admit." (Going 1832) The mention of science instruction in that important letter is of significance in view of the attitude of many church leaders in the first decades of the 19th century. Evidently Going was much more a broad-minded educator than a narrow theologian. In 1837, Going himself came to the Ohio frontier from Massachusetts to become the second president of the fledgling institution he had helped to found.

The proclivity of Jonathan Going toward science was evident from the outset in selection of instructors and nature of the curriculum. Even when faculty numbered but two or three, as it did for the first ten years or so, one man was designated as Professor of Mathematics and Natural Philosophy. By 1836, the 5th year of the institution's existence, the curriculum included six terms of mathematics, one term of chemistry, one term of astronomy, and one term of geology and mineralogy in the Junior year.

Geology and mineralogy instruction in the first years was in the capable hands of a young New Englander, a graduate of Middlebury College, named Paschal Carter. Carter attended Middlebury College circa 1826 to 1830, and it is tempting to speculate upon his own instruction in geology and mineralogy at that Vermont institution. It would have been the Eatonian Era, 1820-29, as defined by Merrill. Did Carter have any contact with Edward Hitchcock's work in 1823 on the geology of the Connecticut Valley? Carter probably travelled to Granville via the Erie Canal. Did he have any knowledge of Amos Eaton's *Survey of the Erie Canal, 1824*? How well prepared Paschal Carter was, we probably will not know, but he must have been an enthusiastic collector of minerals and fossils. It is recorded that his "cabinet" was purchased by Denison in 1854 for the surprisingly large sum of \$500, which

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was a sum equal to the tuition of 10 students for one year. (Shepardson 1931)

In 1841, a famous geologist of his time momentarily entered Denison history. In the first decades, examinations at Granville College were given orally and the public was invited. It is recorded that W. W. Mather, the State Geologist of Ohio, came away from examination week in Granville in February 1841, saying that he had, "rarely . . . seen an equal readiness in the answers to the various questions proposed." (*Cross and Journal* 1841) One could speculate whether any of the questions posed in 1841 were based on Mather's own textbook of geology published in 1833. Mather later was appointed to the Denison Board of Trustees and served from 1850 to 1859.

In the Denison Catalog of 1854 appeared the following statement:

SCIENTIFIC COURSE

This course of studies is designed to furnish a suitable education to those who are fitting themselves for business men, for engineers, or to engage in mercantile or mechanical pursuits. Those sciences which are adapted to fit them for their chosen pursuits, will, in their case, take the place of the ancient classics. It may be expected, therefore, that upon such as complete this course of studies, the honors of the College will be bestowed, and the degree of Bachelor of Sciences conferred. (Denison University 1854)

Instruction in geology and mineralogy at Denison continued without interruption through the 1850's and into the Civil War period. An interesting insight into geology field trip activity in 1865 comes from reading a letter of a young woman enrolled in Denison's sister college, the Granville Young Ladies' Institute:

October 16, 1865—I must tell you something of my trip last Saturday. The Geology classes of the College and the Seminary went together to a place called Flint Ridge to geologize. We went in wagons and a buggy . . . Our ride though quite long (about 17 miles) was nevertheless very pleasant indeed. There was about 23 in the company. The class at the Sem consisting of nine, with one Senior who is not in the class and one music teacher, ten students, including Robert Stone, President Talbot, and the driver . . . We found quartz rock here in abundance and very frequently crystallized quartz . . . As we

passed along, we would see great piles of rocks, flints, quartz, jasper, etc. . . . We saw something that I never saw before, that coal bank. One of the gentlemen procured a miner's lamp and quite a number of us went into the cave and brought out pieces of coal (cannel coal). Near the bank were to be seen the remains of an old oil factory, a place where they formerly made oil from the cannel coal . . . Both gentlemen and ladies have complained some of a new kind of rheumatism which in all its pangs reminds them very much of jolting wagons and rough roads . . . (Currier 1866)

The years immediately after the Civil War were eventful ones for the Denison Department of Geology. L. E. Hicks graduated from Denison in 1868 and went off to Harvard for a year of graduate study where he studied with Louis Agassiz. Hicks returned to Denison in the fall of 1869 as Professor of Natural Sciences. Hicks became known for his habit of taking his students into the field. The *Denison Collegian* of November 1870 stated, "He (Hicks) takes them to a stone quarry and Black Hand and Flint Ridge for their geology and sends them to the creek for their Natural History."

Hicks left Denison in the summer of 1884 to become Professor of Geology at the University of Nebraska. Thus the stage was set for appointment of Clarence Luther Herrick, fresh from a year of study at the University of Leipzig and with a M.S. degree from the University of Minnesota. Herrick was to prove to be a near genius in biological sciences and paleontology. He was a prodigious worker and had a flare for organization and development work. In his first years at Denison he drew plans for the building which was to house the science departments. The result, Barney Science Hall, is still in active use. In his second year at Denison (1885) he founded the *Bulletin of the Scientific Laboratories of Denison University* which is still being published. He was its first editor, wrote most of the early papers published therein, and prepared his own lithographic stones for the printers. His research ranged from paleontology to neurology to psychology. Among Herrick's most brilliant students was August Foerste. Foerste went on to become a world-famous paleontologist and eminent

authority on the cephalopods. His *modus operandi* was immortalized in the words of the poem read at the show put on by the Pick and Hammer Club in 1937:

Cephalopods haven't a chance
 To resist my systemic advance.
 I've sawed 'em and split 'em,
 Disemboweled and refit 'em,
 And nothing escapes from my glance!
 (Bassler 1937)

Herrick's memorable six years at Denison were brought to a close by illness which forced him to Albuquerque, New Mexico where he gained some measure of good health. Soon he was deeply involved in development work in the State and at the University of New Mexico. In 1897 he became President of the University. Herrick continued biological and geological field work in the Albuquerque vicinity. His field assistant in some of those years was Douglas W. Johnson who had heard of Herrick while a student at Denison. Johnson had transferred to the University of New Mexico when he was advised by his physician to seek a more healthful climate than that of central Ohio. Johnson later wrote of Herrick, "It was an impressionable period of my life, and I would find it difficult to calculate the influence which Clarence Luther Herrick exerted upon me in the years when I was preparing for my professional career." (Herrick 1955)

Herrick was succeeded at Denison by one of his Denison students, William George Tight who had studied with William Morris Davis at Harvard. Tight's years were the '90's. Interestingly, he too left Denison to become President of the University of New Mexico, thereby succeeding Herrick a second time.

Thomas L. Watson taught geology at Denison from 1901 to 1904 and left to become professor of geology at the Virginia Polytechnic Institute where he had a distinguished career. Watson was succeeded at Denison by Frank Carney.

Carney proved to be a particularly inspiring teacher. Among the products of his thirteen years at Denison were seventeen professional geologists or geographers. Undoubtedly the most famous of Carney's majors was Raymond C. Moore of the class of 1913. Raymond Moore returned

to Granville in 1963 to celebrate the 50th anniversary of his graduation, and told this story, "I came to Denison intending to train for the ministry and become a missionary. I decided I should have a course in geography. There was a conflict in hours and I enrolled in Carney's beginning geology instead. I had not been in the course for more than ten days before I gave up all thought of the mission field and decided I was going to be a geologist." (pers. commun. 1963)

In 1917, Carney was asked by National Refining Company to name a salary which would lure him away from the classroom. He asked twice the amount he thought possible. When National agreed, Carney felt obliged to accept the job. (Owen 1975) He established an exploration department for National and his geologists achieved notable success almost at once. Later the company was negligent with leasing programs and Carney left the oil business to return to teaching at Baylor where he again demonstrated his flair for teaching.

Kirtley F. Mather, a 1909 graduate of Denison and a geology major under Carney, replaced his former teacher as Professor of Geology in 1918. His tenure lasted until 1924 when he was appointed Professor of Geology at Harvard. Mather's six years at Denison were also spectacularly successful. Among his undergraduates who went on to distinguished careers were Carey Croneis, Don Leet, George Cressey, Nelson Sayre, Alonzo Quinn, and Langdon White.

Frank J. Wright succeeded Kirtley Mather as Head of the Department and continued in that post until 1949. Wright had taken his Ph.D. under Douglas W. Johnson at Columbia, consequently he came to Denison well acquainted with the heritage of Clarence Luther Herrick. Frank Wright was an inspiring and demanding teacher who had an extraordinary and very personal influence upon his carefully selected majors. An impressive number of Professor Wright's students are now enjoying distinguished careers: three have been honored by their Alma Mater with honorary Doctor of Science degrees (Thomas Bates, Reid Bryson, Philip LaMoreaux) and five have received Denison alumni citations.

Very soon after arriving at Denison in 1924, Frank Wright urged the appointment of a second man in the department. His wish was granted in 1930 when H. S. Sharp was appointed. Sharp was called back to Columbia in 1932 and was replaced by Franklin McCann, a Denison graduate of a few years before. The depression forced Professor Wright to manage with undergraduate assistants for a few years until he won permission to appoint a second man beginning in the fall of 1941. Wright contacted his mentor Douglas Johnson at Columbia and with Johnson's recommendation, Richard H. Mahard, trained in both geology and geography, took up his career at Denison. Three months later—Pearl Harbor!

The department weathered the war successfully because classrooms were filled with V12 U.S. Marines being instructed in map reading and U.S. Air Forces cadets studying world geography.

Frank Wright was forced into early retirement in 1949 by illness. Mahard struggled through the next four years alone and these were years made difficult when a science requirement change decimated the enrollment in beginning geology. By 1953, options for laboratory science were restored and Charles E. Graham joined the department. The increase in enrollment and number of majors was encouraging in the late 50's and early 60's and in 1966, Kennard B. Bork was appointed. Two years later a fourth

instructor was added. This position has been held since 1972 by Robert J. Malcuit.

We are continually inspired by the 142-year history of our department, and by the accomplishments of the professors who have preceded us, and by the record achieved by our distinguished graduates. We believe Denison students have been well served by our department. It seems a long way back to Paschal Carter, but come to think about it, 1836 was only a short time ago geologically speaking.

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