

The History of Science at Earlham College

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The founding of Earlham College grew out of a concern common to Quakers for the education of their young people. The setting up of schools was coincident with the establishment of meetings for worship. The meetinghouse and the schoolhouse were often side by side, thus emphasizing the belief in an essential relationship between education and religion.

This relation became more specific at Earlham College in the recognition from the beginning of the fact that there is no discord between scientific education and religion. This came about not so much as the result of an established policy as through the educational contributions of members of the administrative and instructional staff of the college, who combined in their own lives and teaching an appreciation of nature through a thorough knowledge of science and a simple and sincere worship of the Creator. While on leave for graduate study at Harvard University, Joseph Moore wrote, "In my pursuit of science may I be constantly inspired by the highest motive—that of learning more of God as He has displayed Himself in all that He has made. God is the author of truth and how can we be better employed than in searching into such things as He has given us the power and a longing to investigate. The universe is the work of the divine mind. Since omniscience is one of his attributes, the man who knows the most is in this respect most like his Maker."

From the beginning to the present time, a considerable proportion of the teachers of science have been recognized ministers of the gospel of the Society of Friends, while the most of the others have been active religious workers.

The fact that this synthesis was recognized also by the teachers in the Department of Religion made it possible for students to go from classes in one department to those of the other without being confronted by mutual ridicule and antagonism that have characterized these two departments in many educational institutions. Evolution and "higher criticism" may have troubled some of the patrons of the college, but not the students.

From its beginning Earlham College has given prominence to the sciences. Joseph Moore was a student of Agassiz, a charter member of the Indiana Academy of Science, instructor in science at Earlham 1853-65, president 1868-83 and curator of the Museum 1885-1905. He did more to establish the pattern of this unity of religion and science than any other man. The museum, which began as a collection of minerals in a small cabinet in his student days, was actively expanded into the best college museum in the state. The mastodon, its most spectacular specimen, and the fossil beaver, *Castoroides ohioensis*, its most valuable one, and until recently the only one in existence, were added about 1896. By this time the museum contained 14,000 specimens.

As the college grew and science expanded, he brought to the college men like David Worth Dennis, for whom was named the building we now occupy and who, in taking over the most of the work in science, taught physics, chemistry, geology and biology. I have heard him say that he did not occupy a chair of science, but a settee. He exemplified the breadth of knowledge and interest not uncommon in the best teachers of that time, but largely lost in our present period of specialization. He knew not only science but literature and art. He was a minister of the gospel as well as a teacher and simply and reverently combined in the classroom the functions of both teacher and preacher. I came to Earlham from a conservative Methodist family, quite convinced that Darwin was a name to be mentioned with righteous horror. In his classes I was led to think constructively and to bring my religious and scientific attitudes into harmony without mental and spiritual anguish. For thirty years he was a member of the college faculty. He was a leader and founder of the Indiana Academy of Science, an organizer and supporter of the Indiana Audubon Society, having been a member of the committee set up by the Academy to organize the latter group. He taught birds and trees in field courses, when that method of presentation was new. He preached the gospel of field work in teachers' institutes all over Indiana. Teachers from all over the state came during summer terms to learn his methods and to catch his contagious enthusiasm. Among his hobbies were photography and photomicrography. In collaboration with Dr. Charles Bond, of Richmond, who is still living, the best Zeiss apparatus was purchased. Both men spent long hours late at night adjusting the complicated apparatus and making photomicrographs, which became well known. Early in the history of microscopy, microscopes were in use by students of biology.

The Department of Geology had its beginning when Earlham was the Friends Boarding School. The first catalog, issued for the year 1857-8, gives geology as one of the natural sciences. In 1902 it was recognized as a separate department. In 1900, Allen D. Hole returned to his alma mater, to be Professor of Geology and Curator of the newly-named Joseph Moore Museum. Until his death in 1940 his classes in geology were well attended and much appreciated. He excelled as a teacher. Summer after summer he combined research in glacial geology in southwestern Colorado with instruction in field geology to small groups of students, later taking larger groups to the Grand Canyon and Yellowstone Park. His special interest was the training of students to take positions in the United States Soil Survey. At one time approximately one-fourth of the members of the Soil Survey were Allen Hole's students. Mark Baldwin, Earl Fowler and James Thorp became leaders, the last-named returning recently to take the place of his former teacher as head of the Department of Geology.

The Division of Natural Sciences has had fewer changes in personnel than any other division of the college. Joseph Moore was connected with the college for forty-five years; David Dennis, thirty-two years; Allen Hole, forty years. The five present teachers of longest service have been active for an average period of thirty-five years.

Other teachers who at an earlier period left their mark on the college were the following: Dr. Harry N. Holmes, who was Professor of Chemistry 1907-14, is Professor Emeritus of Chemistry at Oberlin College. Dr. Wm. D. Collins, Professor of Physics 1897-1907, recently retired from the United States Geological Survey. Dr. Robert L. Sackett, Professor of Mathematics 1891-1907, was for many years at State College, Pa. Dr. Raymond Binford, Professor of Biology 1913-18, was called to the presidency of Guilford College. Dr. Elmer D. Grant was Professor of Mathematics from 1920 to his death in 1935. Dr. Wm. O. Mendenhall, Professor of Mathematics 1907-18, became president of Friends University and Whittier College. Edwin Morrison, Professor of Physics 1906-19, went to Michigan State College. Dr. Martha Doan was Professor of Chemistry 1915-26.

In earlier years Earlham was well known for the training of public school teachers. Throughout its history it has given undergraduate training to large numbers of physicians and dentists.

A survey of the graduates of the college, along with many others, was recently made by members of the science faculty of Wesleyan University, at Middletown, Conn., in an effort to ascertain the undergraduate origins of American scientists. The index which was used was the rate per thousand at which male graduates of the years 1924-34 in the various institutions continued their education to the doctoral level and were listed in American Men of Science. Among the colleges and universities of the country, Earlham ranked fourth.

Until recently the departments of natural science have never been adequately housed. The departments were scattered over the campus in cramped, poorly-equipped quarters. Plans were being made for a science building when, in 1924, Lindley Hall, the principal instructional and administrative building of the college, was destroyed by fire. Its replacement by the present Carpenter Hall made necessary the postponement of the erection of a building for the sciences.

In 1952 the departments of the natural science division moved into David Worth Dennis Science Hall, with great improvement in space and equipment, including quarters for the Joseph Moore Museum. The instructional staff is mindful of the fine work done in earlier days, with poor housing and makeshift equipment and addresses itself humbly to the task of building upon the firm foundations which have been laid and the traditions which have been established.