

## **HISTORY OF SCIENCE**

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### **The Rich and Varied Past of the History of Science Section**

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This year celebrates the centennial meeting of the Indiana Academy of Science. In addition, this is the 40th anniversary of the first meeting of the History of Science Section. Naturally such events call for reflection.

The History of Science is a fairly new section among the many which comprise the Indiana Academy of Science (IAS). It is natural that histories are not attempted until after a rich tradition already has taken root. As with any "infant," the formative years are especially important if that "infant" is to grow into a productive "adult." It is in this light that we look upon the early history of the section.

The IAS was already 59 years old when the minutes of the October 28, 1943 Executive Committee meeting stated the following (5):

"A recommendation was made that a chairman of a committee be appointed for the consideration of plans for a History of Science in Indiana, including the biographies of Indiana scientists. Said committee is to consist of a chairman, and a member from each of the sections of the Academy. The most feasible plan is to be presented at the next meeting of the Academy." "Professor C.O. Lee (Purdue) was elected to solicit papers concerning the history of the different fields of science, which are to be presented at the 1944 Academy meeting in a section on the History of Science."

At the 1944 meeting, held appropriately at Butler University, W.E. Edington (DePauw University) presented plans for the History of Science in Indiana, including biographies of Indiana scientists (6). John S. Wright was elected Section Chairman for 1945.

Looking at the papers presented at the first session in 1944, one sees that the section made a fine start with addresses to the general assembly entitled "A Historian Views Science," by Louis Sears and "A Critique of Science" by Carroll Hildebrand.

The papers presented at the section include three authors whose names quickly become familiar as one views the early years of the History of Science Section. Those first three authors were B. Elwood Montgomery, Paul Weatherwax, and John S. Wright.

The paper by John Wright is entitled "Men of Science in Indiana, Past and Present." It is very appropriate that we meet John Wright in this fashion since the previous year he was given tribute for being a member of IAS for 50 years with active interest in the Academy throughout the entire period. John Wright joined the Academy in 1893, one year after receiving his BS degree from Purdue and joining Eli Lilly as a botanist. His interests included medical botany, histology of drugs and food, pharmacology of plant drugs, and in later years, conservation and forestry. He was secretary of the Academy from 1895-1904, becoming President in 1905. The 50th anniversary of the Academy saw his active participation leading to a continued interest in the History of Science. In his retirement from active service at Eli Lilly, he was able to pursue this interest by advocating the publication of a historical Directory of Science for Indiana which eventually culminated in the publication of the volume *Indiana Scientists* by the IAS. As stated in the IAS tribute to him at the time of his death in 1951, (4) "he represented the tie with the 'Giants of Other Days' for he knew them all and he had actively served the Academy longer than any other member in its history." "He has left an imperishable mark on the IAS and he will henceforth take his rightful place as one of the 'Giants of Other Days.'"

Another author of 1944 was Paul Weatherwax, a graduate and Professor of Botany at Indiana University. His contributions to the History of Science Section included several articles relating to his prime interest in the history of Indian domesticated corn. A worldwide authority in this area, he traveled widely seeking the wild ancestor of Indian domesticated corn. Concluding that the original ancestor was extinct, he served on a committee of the National Research Council to preserve extant varieties containing primitive characteristics which might be needed to re-develop resistant corn varieties for future needs. Dr. Weatherwax was a member of IAS for 63 years serving as President of the Academy in 1941 and as Chairman of the History of Science Section in 1949 (1). In 1966 he gave the invited paper, "Indiana Botany in Retrospect" as part of the Academy's Symposium celebrating the Indiana State Sesquicentennial. As noted by the editor of the symposium (2), "it is a signal honor and a mark of respect and confidence for these men to have been chosen to write the history of their own fields in Indiana. The collected papers published herein comprise a unique contribution to the history of science in Indiana by those who know it best and who have helped to make some of that history as well as write it."

Our third author of 1944, B. Elwood Montgomery (Purdue) who was elected Fellow in 1929 contributed papers to the section over the longest time span, that being from 1944 through 1981. His contributions covered odonatology in Indiana and America, the domestication of bumblebees, Thomas Say Entomologist, Linnean "Elements" in Indiana fauna and flora, the Cumberland Road, the origin and derivation of insect names and entomological terms, and a Bicentennial Study of Indiana fauna. He served as Chairman of the Section in 1955 and 1969.

The meeting of 1945 introduces us to the most prolific author of the History of Science Section, Stephen S. Visher of Indiana University. Dr. Visher contributed 14 articles from 1945-1966. Being one of the nation's outstanding geographers, he contributed several articles in this area, including his invited paper, "A Brief History of Geography in Indiana" for the Indiana Sesquicentennial celebration in 1966. However, his major contribution to the History of Science included many articles on the contributions and achievements of scientists in Indiana, chronicling Indiana Nobelists and National Academy members, and searching for a key to the success of outstanding persons with regard to their environment and geographical origins. He was editor of

*Indiana Scientists*, a biographical directory and analysis which was published by IAS in 1951. He served as Section Chairman in 1948 and 1959. Dr. Visher's Presidential address of 1950 (7) contained conclusions regarding the production of this valuable resource known as scientific leadership, conclusions which are important for us to recall today. He viewed encouragement by one's family as highly significant in early years. He emphasized that no scientist is self-made and that personal encouragement by enthusiastic, stimulating teachers is deeply significant in the development of scientific leaders. As evidence of this connection he noted the large number of respected scientists trained by such great Indiana teachers as zoologist David Starr Jordan and botanist John M. Coulter. He encouraged his colleagues and each of us today to "be generous in encouraging our more promising students and young friends. A few appreciative words may alter their life!"

Another long-term participant in the History of Science Section was William E. Edington, head of Mathematics and Astronomy at DePauw University. In 1944 as chairman of the committee, he presented plans to the Executive Committee of IAS for the History of Science in Indiana, including biographies of Indiana scientists. He was President of the Academy in 1937 and Chairman of the Section in 1946. He presented papers at the section from 1948 to 1973 on topics as diverse as The Wabash Academy of Science, the Terre Haute Scientific Society, The History of Science at DePauw, David Starr Jordan, John P.D. John, William Ephraim Heal, and Indiana Women in Mathematics. He was invited to join the ranks of the illustrious scientists participating in the 1966 Indiana Sesquicentennial Symposium with his paper entitled "Mathematics in Indiana 1816-1966, From the Rule of Three to Electronic Computers."

However, Dr. Edington's greatest single contribution to the History of Science in Indiana was made long before the creation of the History of Science Section. He presented a paper (3) at the 50th meeting of the IAS in 1934 honoring the founders and charter members of the IAS entitled "There Were Giants in Those Days." This fascinating history chronicles the influence of four distinct factors on the foundation of the IAS: 1) the influence of the New Harmony scientific community, 2) the development of geological investigation, 3) the influence of Louis Agassiz, and 4) the inspiration derived from the American Association for the Advancement of Science. Dr. Edington's discussion of the founding members of IAS in this paper certainly was an appropriate beginning to his work in compiling the achievements of the contributors to science in Indiana. Over the next years Dr. Edington contributed papers on charter members of IAS, supplied considerable material for the book *Indiana Scientists* (Visher 1951) and wrote memorials for the IAS for 35 years. By so doing, in his 53 years as a member of IAS, he had probably written more than anyone else on the history of the Academy.

In addition to the four "giants" mentioned previously, the section continued to attract talented leaders. These men not only served as section officers and/or Academy officers, they have had a long association with the Academy and were prolific in the number of papers presented at History of Science Section meetings.

The 1946 meeting brought two new contributors to the section, Charles A. Behrens and Raymond E. Girton of Purdue. Dr. Behrens gave us The History of the First Five Years of The IAS, the Purdue Biological Society, development of medical bacteriology, and the landmarks in chemotherapy. He served as Academy President in 1923 and Section Chairman in 1947.

In 1946, Raymond Girton began a 29 year tradition of contributions including articles on developments in plant physiology, early studies in protoplasm, Joseph Priestly, 17th Century microscopists, plant physiology at Purdue in the 19th Century, 3/4 Century of Biology at Purdue, and a Look at Academy Presidential Addresses. Prof. Girton served as Academy President in 1956 and as Section Chairman in 1951 and 1952.

C.O. Lee was chairman at the first meeting of the History of Science Section in 1944. Over the next 10 years he presented papers on the history of the School of Pharmacy at Purdue and on the American Pharmaceutical Association from 1852-1952.

C.L. Porter presented papers from 1947-1952 including the topics of Botanists of Purdue, Johnny Appleseed, the history and economic importance of *Mentha piperita* (mint), and the history of fungus antibiosis. A 43 year member, Dr. Porter served as President of the Academy in 1949 and Section Chairman in 1953.

In 1947 the name of William J. Tinkle appears which is to span 25 years in the section from 1947-1973. His papers discuss various aspects of Darwinism, conservation of germ plasm, natural selection, creationism, and a profile of J. Henri Fabre. He served as Section Chairman in 1956.

Another long term contributor was M.S. Markle of Earlham who presented papers from 1953-1966 on the History of Science at Earlham, Dr. John T. Plummer, the Joseph Moore Museum at Earlham, and the influence of Quakers on Science in Indiana. He gave an invited paper at the Sesquicentennial symposium entitled "The History of Plant Taxonomy and Ecology in Indiana." During his 58 year membership in IAS he served as President of the Academy in 1945 and Section Chairman in 1954.

Daniel DenUyl, a contributor of more recent years, presented papers from 1953-1958 on the Civilians Conservation Corps, Charles C. Deam, forest conservation in Indiana, and the forests of the Lower Wabash bottomlands. He served as Section Chairman in 1957.

We have still as members today four contributors who have been members of the Academy for 50 years or more who have also served us well in the History of Science Section. All from Purdue, they are H.H. Michaud, M.G. Mellon, Arthur T. Guard, and Raymond E. Girton whom we discussed earlier.

Prof. Michaud has presented papers concerning conservation of natural resources, conservation of recreation and scenic resources, history of game regulations, and the history of science education in Indiana high schools. He served as Academy President in 1963 and as Section Chairman in 1958.

M.G. Mellon contributed an article on developments in the analytic balance and was invited to present a paper on "Chemistry in Indiana at the States Sesquicentennial." As President of the Academy in 1942 his address was entitled "Science, Scientists, and Society." In addition he served the Section as Chairman in 1950.

Arthur T. Guard has served us as Section Chairman in 1963 and 1964 and as Academy President in 1960. His papers include his Presidential address on "Recent Approaches to the Study of Plant Structure" and his section presentations on "Early Field Trips of the Indiana Academy of Science" and "John and William Bartram—Botanists at the Time of The Nation's Birth."

The important task of recording the lives of the men and women who have shaped the Academy's past has been ably assumed by Fay K. Daily (Butler University), our Academy Necrologist. She has served as Chairman of the Section in 1960 and has presented papers on Botanists of Butler University 1920-1955, some scientific expeditions in the SE US taken by David Starr Jordan and an address at the 75th anniversary of the IAS entitled "The Academy from Horse and Buggy to Jet." Most recently she coauthored the *History of the Indiana Academy of Science 1885-1984, A Centennial Volume*.

In reading the minutes of meetings, papers presented, and memorials to those who have preceded us, it is striking to see the depth of contributions made by these individuals. The words "friend and benefactor of the Indiana Academy of Science" certainly apply.

In closing, we would like to turn again to words of William E. Edington, a great chronicler of the Academy. He concluded his address to the 50th meeting of the Academy

entitled, "There Were Giants in Those Days," as follows (3): "And so I come to the conclusion. I hope this recital of illustrious names of those who have done so much for science in Indiana and our nation, names of scientists who were once active in our Academy as we are active today, will inspire the younger scientists of Indiana to attempt to follow in their footsteps. Indiana produced giants in those days. It is my hope that when the centennial meeting of our Academy is celebrated in 1984, someone speaking in authority may say there were giants in our days."

#### Literature Cited

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