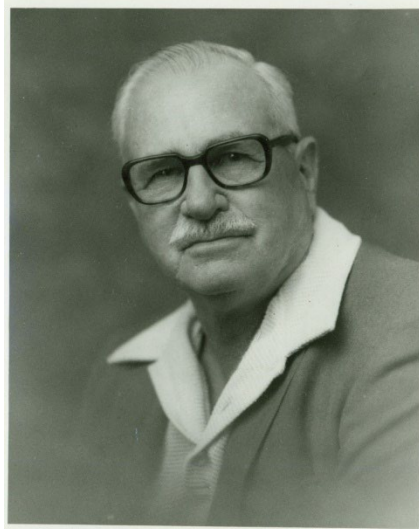


ASPB Pioneer Member

John Davidson

John F. Davidson, Ph.D., was born in Aberdeen, Scotland in 1911. His father, also John Davidson (1878-1970), received botanical training as a museum assistant and laboratory researcher in the Botany Department at the University of Aberdeen, Scotland. Although Davidson lacked an advanced degree in botany, in 1911 he was invited to serve as “provincial botanist” in Vancouver, Canada, and help establish an herbarium and botanical garden. Initially, Davidson was primarily involved in botanical surveys of Vancouver, but in 1917 he was appointed to the University of British Columbia (UBC) faculty and taught botany and biology until his retirement in 1943 as an Associate Professor. Davidson served a variety of scientific leadership roles in Vancouver, including president of the Vancouver Natural History Society, Secretary of the British Columbia Academy of Sciences and Secretary and President of the Vancouver Institute. But he is best remembered for creation of the UBC Botanical Garden.

His son, John F. Davidson, received a bachelor’s degree from UBC, but his plan for an advanced degree in botany was interrupted by the 1930’s depression and World War II. During this time, he had a variety of jobs, including doing surveys for Canadian Forestry Department, delivering blocks of ice to homes and businesses in Vancouver, and working as a bank teller. During the war, he worked



for a rubber company, while also giving flying lessons to young men interested in joining the Canadian Air Force. Eventually, he was able to attend graduate school at the University of California, Berkeley, where he obtained a PhD degree in Botany in 1948, working with Dr. Herbert Mason, a well-known plant taxonomist.

Dr. Davidson became a member of the faculty in the Botany Department at the University of Nebraska in 1948, where he taught courses in introductory botany, taxonomy, and paleobotany for more than 25 years. Coincident with his retirement in 1975, Davidson received a Distinguished Teaching Award from the University of Nebraska Foundation Trustees in recognition of the impact his teaching had on graduate and undergraduate students at the University of Nebraska.

“Doc” Davidson, as he was known, taught introductory botany to several thousand undergraduate students at the University of Nebraska, and he was responsible for more than 30 M.S. degrees in

Botany were awarded to high school teachers from across the US who enrolled in his NSF-funded summer Botany Institute to enhance their teaching credentials. Davidson trained a small number of graduate students who obtained a PhD in plant taxonomy. Among them, Marian Fuller was the first woman to receive a PhD in Botany from the University of Nebraska. A common feature of his PhD student’s research involved application of computer-aided analysis of phenotypic variation among native plant species that appeared to be undergoing cross-hybridization. In addition to gaining expertise in plant taxonomy, these students acquired sufficient computer programming experience that several went on to careers involving computer science. However, most of them became teachers in small undergraduate colleges and universities, where they spent their career teaching by the “inductive/inquiry” method they learned from Davidson.

Davidson described his approach, “completely inductive teaching”, as teaching through inquiry, something he attributed to the famous Greek philosopher, Socrates. Inquiry-based instruction is a student-centered approach where the instructor guides the students through questions posed, methods designed, and data interpreted by the students. Through inquiry, students actively discover information to support their investigations. The inquiry-based learning model emerged in the US during the 1960s, but the idea came to Davidson in 1953, when he was teaching a summer taxonomy class at Berkeley.



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As he explained, "a sophomore I was teaching in taxonomy class was looking at a spray of spiraea-about 2000 flowers- and the petals were falling off. As I was leaving the room, the student asked how many petals was the flower supposed to have? I said six, without looking, thinking the student would count them for himself. There are five." When Davidson returned, the student had talked the whole class into drawing the flower with six petals, because the student said, "you said it had six!" What were they studying, me or the flower, he noted dryly, plants don't read textbooks! After that, Davidson did not use a text or lab manual for his courses, and there were no regular tests. The only test was the final exam. He said all that matters is what students know by the end of the course. Some students catch on early, and for others, it takes a little longer. His lectures consisted mainly of question-and-answer periods. He said, "I'm interested in teaching and learning; there's too much telling." Davidson let students learn from plant materials. He gave them a question that could be answered by observing the plant. He used to say, "the plant is the authority," and he frequently pointed out, "Students don't remember the answers to your (the professor's) questions; they remember the answers to their questions."

After teaching taxonomy using the inductive approach, Davidson applied this method to introductory botany classes, which were among the highest enrolled in the Botany Department. He said, "Students who are tired of being spoon-fed

and want to do some thinking on their own rave about it. They learn by doing and drawing conclusions based on their observations and experiments." But students accustomed to writing down lecture notes and memorizing facts and details were often uncomfortable with his approach, particularly because their grade for the course came down to the final exam.

For many students, and a few fellow professors, the experience of taking Davidson's courses was not to be missed. The undergraduate mathematics advisor in the Teacher's College routinely enrolled the college's math majors in Davidson's introductory botany course. It was also popular for undergraduate biology majors in Teacher's College. On the other hand, Davidson's "non-traditional" methods of teaching botany were not appreciated by his colleagues in the Botany Department, most of whom taught by lecturing from textbooks. This ultimately delayed Davidson's promotion to the rank of Full Professor.

Davidson was also involved in the Centennial Education Honors program and the Triple T (Training the Trainers of Teachers) Program at the University of Nebraska. He had a long history of freely sharing his methods of teaching with all who wanted to learn them. His influence on science teaching continued for many years through the college and high school teachers who experienced his botany courses, an impact lasted long after Davidson's death in 1984.

Publications

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