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Duane Isely (1918–2000): A Tribute

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Dr. Duane Isely at his desk in "Old Botany" (Agricultural Hall), 1956.

Duane Isely, Distinguished Professor Emeritus, Department of Botany, Iowa State University, Ames, Iowa, died on 6 December 2000. Dr. Isely was an outstanding plant taxonomist with expertise in other fields as well, especially in seed technology and weed identification and control. He was born in Bentonville, Arkansas, on 24 October 1918 into a family of academicians. His father, Dwight Isely, was professor and later Dean of Agriculture at the University of Arkansas, and his mother, Blessie Elise Dort Isely, also taught at the University of Arkansas and eventually received her Ph.D.

With those antecedents it is not too surprising that Duane was intellectually gifted and driven to succeed. He graduated from high school at 16, and from the University of Arkansas with a bachelor's degree in 1938 when he was only 20 years of age. In 1939 he completed his master's degree. His thesis, *"Ecological considerations of Arkansas legumes."* was the beginning of a life-long passion for the legume family. Duane's doctoral studies were carried out at Cornell University under the direction of Dr. W. C. Muenscher, famous for his work on poisonous plants, weeds, and aquatic plants. There Duane was introduced to what became a second passion, the study of weeds and seed technology. His initial project involved germination of seeds of the cyperaceous genus *Scirpus*, but when that project failed he turned to development of keys for the identification of weeds in vegetative condition. After earning his Ph.D. in 1942, at 23 years of age, he was employed by the Tennessee Valley Authority where he conducted floristic studies on the great reservoirs being constructed in Alabama, Georgia, Kentucky, and North Carolina. A resulting publication, *Manual of herbaceous plants of the Tennessee Valley reservoirs*, was published in 1946.

Prior to that publication, Duane had accepted a position at Iowa State College in 1944. His position at Iowa State was as an extension associate, and certainly he was qualified for that position. However, at the close of World War II, several opporrunities for employment developed. Isely investigated various positions, one of them ar Utah State College in Logan, Utah. Indeed, he signed a contract there as assistant professor of botany. Just as he was preparing to make the move to Utah, though, the department chairman at Logan wrote a letter stating that they were going to hire instead a returning war veteran for that position and requesting that Isely step aside. Always a gentleman, Isely agreed.

Duane accepted responsibility for the day-to-day activities of the seed laboratory at Iowa State. The seed laboratory was housed in high-ceilinged rooms on the third floor of rhe ancient Agricultural

Hall ("Old Botany", now Catt Hall) and was accessed by climbing flights of creaking stairs. The rooms were insufferably hot and sultry in summer and drafty and cold in winter. Despite the short-comings of the facilities, work of high quality was accomplished. Duane worked easily with his colleagues, and with extension agents. The extension agents were in direct contact with Iowa farmers and brought their concerns and questions back to Isely. Among the agents were E. S. (Dutch) Sylwester and Tiny Gunderson, both of whom admired Isely's charm and expertise as he admired their professional abilities. Leroy E. Everson directed the seed laboratory, and he and Duane collaborated daily in its operation.

Duane's primary preoccupation with the seed laboratory is reflected in his early publications. He published more than 50 papers and a textbook in the field of seed technology and served within the Association of Official Seed Analysts. He was President of the association in 1954, and in 1965 received the Award of Merit for his work with that organization. However, his rather broad training allowed him to progress simultaneously in other endeavors. In addition to his duties in seed and weed technology, Duane also taught classes in weed identification and taxonomy of the legume family and published almost 20 books, papers and laboratory manuals on weeds. He may well have taught more students in elementary weed science than anyone else in the country. He accepted and guided graduate students through the complicated maze of studies leading to advanced degrees in both seed technology and in plant taxonomy.

His abiding fascination was with legumes, and by 1948 he began to concentrate his attention on that family. By 1951, he had initiated a series of papers on the legumes of the north-central United States, which would ultimately be expanded into a series dealing with the legumes throughout the contiguous United States. He viewed this attempt as providing a companion volume to the Hitchcock and Chase *"Manual of the grasses of the United States."* Almost half a century would pass before his great opus would appear. His life's work culminated in the 1998 publication of *"Native and naturalized Leguminosae (Fabaceae) of the United States (exclusive of Alaska and Hawaii)."* Along the way, he contributed treatments of various genera in the legume family for both *"Jepson's Manual of the California Flora"* and the *"Southeastern Flora."*

Dr. Richard W. Pohl joined the department in 1947 as a taxonomist and agrostologist. The transition of Isely's interests and work into legume taxonomy brought the two together in a "point-counterpoint" relationship as friends and competitors that would last throughout their lives. Both were internationally renowned botanists, but were different in physical stature, in personality, and in psychological makeup. Isely and Pohl functioned as a team, and the quality of the students graduating under their guidance was magnified by the professors' collaboration. Their approaches were entirely different, one would send you on your way to solve the problem independently, the other would cooperate in examining the problem to arrive at the best possible alternatives.

Nevertheless, both Isely's students and others felt at ease discussing problems with him. These discussions involved a ritual. When the student arrived at Dr. Isely's third floor office adjacent to the seed laboratory, Isely would stop whatever he was doing, determine the subject for discussion, and begin the interview by stoking his pipe. It was a simple, yet grand, device. Any student, smoker or not, would be fascinated by the work necessary to keep the pipe operable. First the pipe's bowl would be carefully cleaned. The stem of the pipe would then be removed, and pipe cleaners produced. These would be threaded through both the stem and the base of the pipe. The pipe would then be reassembled, and the bowl filled with fresh tobacco, which was then tamped to a firmness consistent with years of practice. A wooden kitchen match would then be produced, which served as much as a tamping device as a light. When the pipe was properly lit, the discussion began. One to a few pipes later, the discussion would have considered all potential answers to the problem, and the student left the office knowing that the best solutions had been explored.

One of his students has written that following the "pipe ceremony" and subsequent discussion ". . . He changed his vision from grasses to beans, lentils, locoweeds, and such. Beyond them lay the great store of knowledge and kindness of a giant masquerading in a small body, of a great intellect, and of a grand person of charm and warmth."

Dr. Isely was interested in all of the departmental graduate students. His office door was open to them, and many students took advantage of his kindness, his considered answers to their questions, and his charming personality.

Summers typically found Dr. Isely in the field, traveling throughout the United States collecting legumes. Ultimately he collected in most of the "lower 48," and his collection numbers exceed 11,000 specimens. He also visited the major United States herbaria, where he examined and annotated thousands of plant specimens. Extended periods of time were spent at the New York Botanical Garden, where he examined a large number of type specimens and utilized the botanical library which was rich in references required for his studies.

His interests were diverse, including the philosophical development of botanical thought and those who pioneered in this discipline. His series of separate articles on the history of botany for the department's weekly newsletter were ultimately published in book form as *"One hundred and one botanists"* in 1994. He also wrote a brief history of Botany at Iowa State from 1868 to 1988, and a philosophical essay entitled *"Plant taxonomy (systematics): Sequential saviors."* In this latter work, he discussed the changes in botany over his 45 years of experience with the field. He wrote, "Many said taxonomy was archaic, stagnant, or even now unnecessary. It needed saviors. They came." Included in the "saviors" were the cytotaxonomists (the "chromosome counters"), the biosystematists (the "my taxonomy is better than yours" bunch), the experimental taxonomists (with such heroes as Clausen, Keck, and Hiesey), chemotaxonomists (doing their "spot taxonomy"), numerical and phenetic taxonomists (spending too much of their lives in front of a computer screen), and, as a postscript, the molecular systematists and cladists (in their search for the ultimate answers in sequencing of amino acids of certain proteins and of nucleotides, then incorporating the data into the subscience of "branchology"). "As of recently, if you were not with electrophoresis, your best job opportunities might be with a good Community College or Sears Roebuck." (Isely 1988, unpublished manuscript at BRY).

Isely wrote another tongue-in-cheek paper, *Commandments for communication,* in which he proposed that authors should "break the strait-jackets of conventionality and provide tingles of expectation and excitement for journal editors and readers" by following these rules: 1. Publish quickly (don't wait for the facts); 2. Recognizing that (good) writing is unimportant; 3. Go easy on literature; 4. Ignore journal format; 5. Master the mechanics of (improper) paper presentation; 6. Consider the means of (in-)effective writing; 7. Don't neglect (inappropriate) tables and figures; 8. Consider alternatives in data interpretation (i.e., verbally maul bulging tables); 9. Avoid manuscript reviews; and 10. Publish. "Our first commandment was to publish. So is the last." Duane included considerable verbiage with each of the headings to demonstrate what he had actually experienced, not only with papers written by his graduate students, but by those written by botanists generally.

Yet one of his most frequently requested papers in reprint remains *The Disappearance,* an allegorical look at a world suddenly devoid of all plant taxonomists. Years later, in reference to the huge success of this paper, he wrote, "Because it is socially acceptable, even appro-

priate, I occasionally publish dull jottings in duly accredited and refereed journals. Requests for reprints leisurely diffuse in. Only once have I written something that hit the reprint jackpot. A great new contribution to knowledge? Hardly."

Dr. Isely's activities extended beyond his botanical endeavors. From 1978 to 1987 he was editor of the *Iowa State Journal of Research.* He also was editor of the *Proceedings, Association of Official Seed Analysts* (now *Journal of Seed Science and Technology*) from 1958 to 1965. He was the associate editor of *American Midland Naturalist* from 1971 to 1977, and on the editorial board of *Brittonia* from 1962 to 1965.

He was also active in the conservation of natural areas, including the protection of the Ames High School Prairie (more recently named the Richard W. Pohl State Preserve). He was chair of the Ames Conservation Council at the time that decisions were being made about whether the prairie should be preserved or if the high school athletic complex should be built there. A vote by the citizens of Ames in 1970 favored the protection of the prairie and agreed to a 49-year lease of the property to the Iowa Chapter of The Nature Conservancy.

Occasionally Duane would find a piano and play classical music in grand style, but would insist that his hands were too small to reach the keys in a manner that would allow him to be great as a pianist. Often, when the cares of his life or the pressure of his work became too great he would walk across campus to the music department, find a grand piano and play classical music for both relaxation and solitude.

Duane had a great sense of humor, and his growling chuckle was infectious. He and Dr. Pohl carried on a humorous tussle throughout their careers. They were always trying to get the better of each other in some ridiculous fashion. Dr. Pohl was always on the lookout for new Iowa plant records and would go to great lengths to identify whatever was sent for identification from any part of the state. One day a small package arrived for him, sent from one of the southeastern counties, and labeled in a curious script. The package contained both a note and the green fruit of some kind of a plant, a plant Pohl immediately recognized as a pawpaw (*Asimina triloba*). The note contained a demand from "an Iowa taxpayer" for the identification of this plant, which was invading his farm. Pohl recognized that the species was quite rare in Iowa, and headed for the Seed Laboratory to show it to Isely. As he entered Isely's office the identity of the sender dawned on him. "Damn you," he muttered as he turned to leave, trailed by Duane's laughter.

Duane carried on active correspondence with numerous contemporary botanists, among them Rupert C. Barneby, legume specialist at the New York Botanical Garden. Rupert was Duane's good friend, who shared interests not only in the taxonomy of legumes but in literature and music. Coincidentally, Rupert preceded Duane in death by a single day. Rupert once chided Duane upon hearing that he had read Thoreau's *Walden.* In a 1971 letter he wrote the following: "I don't know how you made it through Walden. He was such a dull grumpy man... He, Thoreau, pretends not to have known Desire. Either he lies, or he was barely human... Thoreau is a bore, and one has only to see Walden Pond to get the point. It is an essentially featureless body of water, surrounded by a jungle of poison ivy. And even when Thoreau was camping out in the 'wilds', he was within an hour's walk of the village tavern. Compare Elijah in the Desert, with the raven bit. Elijah had class."

Duane is remembered fondly by his former students and faculty. Haig Kopooshian, who studied with him from 1959 to 1963 has noted, "He was a counselor, father, and a friend on whom you could always depend. In my dissertation studies, I had to use a drawing tool of the microscope that was very primitive, and, one day, I found in a magazine a picture of a Zeiss optical tool for drawing. When I showed this to Dr. Isely, he did not say anything. About a month later he called me to his office, pointed to a box and said, 'I guess you may be interested in this.' When I opened the box I was very surprised to find the Zeiss microscope piece that I had mentioned."

Dennis W. Woodland, another of Isely's graduate students, wrote, "He was always full of surprises. He was a musician and played the piano and thus had much in common with my wife who is an organist and also taught piano... Therefore, when I took my written comprehensives, what should I get but several in-depth questions on music history and composers during the 19th and 20th centuries. Certainly not the type of questions you could study for as a botany graduate student."

Sande McNabb has noted another of Duane's accomplishments, that of directing the National Science Foundation's (NSF) Research Participation Program for College and High School Teachers at Iowa State from 1965–1969. NSF personnel later informed Duane that this was the largest program of its kind in the country.

Deborah Lewis recalls several stories told by Dr. Isely about his encounters with colleagues. He held Ada Hayden in high esteem, working in the late 1980s to have the herbarium named in her honor, as well as providing a published biographical "tribute" to her. But his respect for her was also mixed with a bit of humor at her eccentricities. An assistant professor of botany and curator of the herbarium at Iowa State, her tenure overlapped that of Dr. Isely (from 1944 until her death in 1950). He told a story of an encounter with her one night while working late in the herbarium. As she approached him that evening, he noticed that she was carrying an ax, and his first thought was that she intended it as a weapon against him! As he mumbled a nervous, "Good evening, Dr. Hayden...," she marched by without a word and reached her goal. A drum of para-dichlorobenzene (PDB) had solidified, and she used the ax to break the PDB up into once-again usable crystals. Another of his tales of Hayden was of their adventures during an afternoon of field work. They were studying the plants in a fenced cow pasture when a large bull headed their way, approaching between them and the car and nearest fence. Isely helped Hayden climb a small tree in the pasture. Eventually the bull wandered off, and he helped her from the tree. When he asked if she was all right, she assured him that she was, then astounded him with her comment, "While I was up there, I wrote a poem. Do you want to hear it?"

Dr. Isely told other stories about his experiences on field trips with Dr. Pohl. In one he told about attempting to dry their specimens (while camping) by setting the plant press over a hole dug in the ground into which they had put a catalytic heater. Generally this worked well, but one morning they found nothing left of the press but the strap buckles.

Duane had some hair-raising experiences of his own on field trips. He was returning toward Iowa from a trip west when he was stopped at a road block in Colorado. He had the same general appearance of a bank robber they were attempting to arrest, so was detained and held in a Colorado jail for some hours before his proper identity could be established.

Dr. Isely's work on legumes spanned some five decades and was essentially completed by the early 1990s. However, health concerns did not allow him to accomplish the final editing, secure funding, and publisher negotiations to see his grand opus on the legumes of the United States into press. A team of friends, colleagues, and family members was enlisted to accomplish these tasks. Thus, "*Native and naturalized Leguminosae (Fabaceae) of the United States (exclusive of Alaska and Hawaii)*" was published in 1998. A copy of the book was delivered to Duane at his 80th birthday celebration in October of that year.

On April 3, 1940, Duane married Helen Sue Pearson, and to them were born two children, Karl and Deanna. Later, he married Isabelle

Alexander, who died suddenly in 1976. He married Mary Holman Faden on July 16, 1977.

Dr. Isely died on December 6, 2000, of complications from Alzheimer's Disease at Ramsey Home in Des Moines. Memorial services were held December 11, 2000, at the Unitarian Universalist Fellowship of Ames. He is survived by his wife, Mary, of Ames; one daughter, Deanna Isely Nilsson of Pittsburgh, Pennsylvania; one son, Karl Isely of St. Paul, Minnesota; one step-daughter, Teresa Faden Alto of Grand Rapids, Minnesota; one step-son, Jeremy Faden of Iowa City, Iowa; one brother, Francis Isely of Dallas, Texas; three grandchildren and six great-grandchildren.

Duane's legacy will continue into the future. His students have spread over the entire earth, and have left legacies of their own. And both his literal and figurative children will extend into the future as great assets. Deborah Lewis has noted, "In reference to these (his 101 Botanists), his botanical heroes, I remember him stating that we are fortunate to be 'standing on the shoulders of giants!' I ponder this in terms of his own short physical stature, but see how great is our view as we stand on his shoulders."

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