

Hugh H. Iltis – Recipient of the 1994 Asa Gray Award

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Cantankerous, opinionated, blustery, irreverent, abrasive, tendentious, outrageous, exhausting, stimulating, enraging, inspirational, intellectual, single-minded, passionate, flamboyant. Journalists have, thus, described Hugh Iltis and his lectures on conservation issues which have brought him public attention. Perhaps only those close to him are aware of his charming, supportive, and generous side and of his caring encouragement of many students.

Hugh was born in Brno, Czechoslovakia, on 7 April 1925. With his parents and brother, he spent many summer vacations in a rented monastery (long-abandoned by the monks) in the mountains of Bohemia. Here, he hiked many miles, botanizing with his father, who drilled him on plant names. He became a botanist at an early age- he maintained a wild-flower garden, he regularly visited the local botanical garden (to which he had season passes), and from age 10 he collected plants and amassed a small herbarium, each sheet with proper labels and Latin names. In 1946, he sold it to Lloyd Shinnery to help finance his attendance at the University of Tennessee. These specimens (ca. 1000) became part of the SMU (now BRIT) herbarium.

His father, Hugo, was a botanist, an educator, and a preservationist. Among his publications are a paper on the abnormalities induced in *Zea* by corn smut, a biography of Gregor Mendel, and a book of photographs of the vegetation types of Central Europe (the first volume of a series that he envisioned would cover the vegetation types of the world). In Brno, he taught biology at the high school and at the Institute of Technology and, in 1920, founded a “people's university,” an adult education institute, of which the motto was “enlightenment to the people.” He attempted to preserve rare species of plants by preserving pieces of their habitat.

Hugo was also a Jew and an active member of the far left-wing Social Democratic Party, affiliations that placed him among the enemies of the rising Nazis. Because of his activism and his writings (e.g. “The Myth of Blood and Race”), by 1934 he was a hunted man. In 1938, the family left Brno for the United States; Hugo flew straight to England for fear of being detained by the German authorities, but Hugh, his mother, and his brother rode the train through Germany, with some trepidation but no mishaps. They settled in Virginia, where Hugh continued his botanical career.

After a year at the University of Tennessee, Hugh was drafted by the U.S. Army and spent two years (1944-46) of World War II in Europe as an intelligence specialist. Upon discharge, he returned to the University of Tennessee. Here, A.J. Sharp's grim stories of the population explosion and forest destruction in Mexico were among the first to impress on Hugh the negative ecological consequences of increases in the human population. He received his B. A. in 1948 and moved to St. Louis to pursue his Ph. D. at Washington University and the Missouri Botanical Garden.

As Research Assistant to Robert Woodson, his job was to curate the MO herbarium. He began by sorting specimens for filing, a task that had not been done since 1943 when staff became short during the War. Woodson and Julian Steyermark were among his influences in his professional life during this period. Woodson steered Hugh to the Capparidaceae, initially suggesting that he monograph *Capparis* for his thesis. Because of the great number of species and the fact that a given herbarium sheet usually bore only a single flower (which he was loathe to dissect), Hugh rejected this genus as an impractical one for a student to tackle and chose the Cleomoideae (usually with several flowers per sheet). As a result of his study, he hypothesized extremely rapid evolution by stringent selection within the desert annuals of this group in Death Valley, an idea still controversial today. Hugh spent much time botanizing in the Ozarks with Steyermark, who was doing field work for his *Flora of Missouri*.

Steyermark was actively involved in conservation and contributed to Hugh's growing awareness of the need for and methods of preservation of natural habitats. While a student, a field trip to Costa Rica, Hugh's first to the tropics, transformed his life-long appreciation of nature into an ardent desire to save it.

After receiving his Ph. D. in 1952 and subsequently teaching for three years at the University of Arkansas, Fayetteville, he landed at the University of Wisconsin, Madison, in 1955 as Assistant Professor of Botany and Curator of the Herbarium.

Hugh's taxonomic research has focused on the Capparidaceae and on *Zea*. He has identified specimens of Capparidaceae for many scientists for many years and has published or has in preparation treatments of the family for *Flora Neotropica* and for the floras of Nicaragua, the Guianas, Dominica, Mexico, and Mesoamerica. His research on the origin of maize, his co-discovery of diploid perennial teosinte, and his "catastrophic sexual transmutation theory" have stimulated much discussion and research on maize. "This theory also pointed out some critical failing in earlier theories on the origin of maize and has forced some of the widely held views of Drs. Paul Mangelsdorf and George Beadle to be reconsidered or rejected. He clearly has been one of the major contributors to the study of maize evolution over the past twenty-five years." [John Doebley]* His contribution to the field was recognized and in 1990 by the dedication to him of Volume 35 of *Maydica*, the International Journal of Maize Research.

Hugh regularly taught graduate courses in biogeography, taxonomy of grasses, and history of botany. His enthusiasm and dramatic flair made his legendary biogeography class exciting and memorable. The total immersion in the dissection and keying of species required in his grass class very effectively impressed on students the kinds of skills and personal qualities required to be a taxonomist. "Hugh weaves together a remarkable amount of information from seemingly disparate fields and so demonstrates to his students the critical connections that unify biology [He] has ardently and consistently striven to inform and educate his students as to the importance of integrating knowledge of taxonomy, biogeography, ecology, and evolution." [Don Waller]

He taught informally as well – in the herbarium, the field, and the corridors of Birge Hall – as noted by some ex-students : " I can remember many, perhaps too many, sessions that would begin with a "Looky here, c'mere, c'mere, could you help me a minute, just 10 minutes ... " Then would begin a session of up to 4 hours of helping edit one of his scientific papers, a conservation speech or article, or curating the herbarium." [Mike Nee] "I found myself ... in the Sierra de Manantlan, trying desperately not to fall too far behind as I pressed the plants he flung my way. 'Make 10 sheets of that!' he cried They were my first botanical specimens, my baptism as a tropical botanist." [George Schatz] "There was many an evening when frantically trying to pursue research on my thesis I would be cornered by Hugh and lectured on botanical topics. Hours later I would be released. The late night lectures from Hugh Iltis cannot be found in any textbook or journal. What he has to offer comes straight from his memory and ... knowledge. Regardless of the topic, I always left with greater confidence and a more positive attitude toward my botanical pursuits." [Jim Smith]

As adviser to 36 students – 19 received an M.S. and 17 a Ph. D. under his guidance, he made lasting impressions on the students and the field of systematic botany. "Generous with his time and advice, armed with an incredible knowledge of traditional methods of systematics, biogeography, floristics, and botanical history, he has contributed immensely to the shaping of many careers. Rather than forcing students to work as technicians on his own research interests, he has always encouraged them to develop independent lines of inquiry while offering steadfast intellectual and moral support for their studies." [Bill Alverson]

He did not limit his attention to his "own" students; all were fair game. "Although I was not a plant taxonomy student, Hugh was one of my most remembered mentors at Wisconsin He was a never-ending source of information, reprints, connections and opportunities. He introduced me to

*This and other quotes in this paper are taken from letters written in support of Hugh's nomination for the Award and appear here with the permission of the writers.

visiting tropical biologists (often at his famous parties at his house in the Arboretum) and saw that I was aware of important meetings or developments in tropical forestry More than any other professor I have worked with over the years, Hugh provided constant intellectual support and encouragement.” [Julie Denslow] He broadened the botanically parochial view of many mid-western students to include the tropical world, and several have gone on to successful research careers in tropical botany.

Hugh's systematic research and his teaching and advising of students required a strong herbarium with a representation of the world's flora. Often faced with little support, he persevered, and under his direction the Herbarium became one of the finest university herbaria. The teosinte seed bank kept at the Herbarium has provided scientists throughout the world with genetic material for experimental work. Almost single-handedly, he amassed the eclectic and valuable Herbarium library of more than 100,000 items. The Herbarium was and is an active place; it is truly a tool for research and teaching.

“Long before it was fashionable, Iltis fostered the development of independent strength in science in Latin America. He has worked with dozens of institutions throughout Latin America and made a very strong contribution to the development of science there to a degree that few have achieved he was a true pioneer in this field” [Peter Raven] Because of his interest in the botany of Mexico and in the development of Mexican botanists, he arranged for several Mexican students to study at the University of Wisconsin. Some of them, as well as other students, were honored by invitations to stay at his home, sometimes for a semester at a time.

While systematic research, teaching, training graduate students, and developing a fine herbarium are activities for which most recipients of the Asa Gray Award have been acknowledged, Hugh's more particular contribution to the Society's goals are his outspoken conservation efforts. In this endeavor, he combined his scientific knowledge of systematics, ecology, and evolution, his passionate love of the natural world, and his impressive language skills to produce some of the most eloquent, persuasive writings and speeches on environmental issues ever to come from a taxonomist.

Even in 1955, when Hugh arrived in Madison, the State of Wisconsin had a long-established tradition of preservation and a system of state-administered scientific areas. That the state was ultimately responsible for preservation of nature was to Hugh a new way of thinking and one that he found refreshing. In his first conservation-oriented paper in 1959, to support the need for more scientific areas he used the usual utilitarian arguments, e. g. , their usefulness in teaching and research and in the preservation of species with as yet undiscovered uses in food and medicines. As early as 1964, however, he was among the first to argue that the most profound reason why we should preserve the natural world was the genetic adaptation and consequent innate need of humans for natural beauty and diversity. He gave many lectures and wrote many papers on this idea at a time when it was an unpopular idea to promote. The cover page of his copy of E. O. Wilson's *Biophilia* bears Wilson's inscription, “To HHI, the biophile and the pioneer in the field.” He was also among the first to argue that systematic and environmental biologists, because of their specialized knowledge, had a social responsibility to fight for preservation. Because preservation, to him, was possible only with some curb on the predations of mankind, he outspokenly advocated population control and often found himself in a controversial position.

He believes that man can and must choose to save the natural world. “Since modern scientific man, who generally dies in bed and of old age, is the only animal that *has* to adapt *through will* rather than *through fate* (since for him natural selection has all but ceased to operate), it is important that he understand the rules by which to play the game. Thus, whether man shall remain the 'darling of the gods' or become extinct is strictly up to him. He may wish to remain happy without being good, but evolution will never let him Conservation, whether of species, biotic communities, or of man, thus **becomes highly meaningful only with evolutionary understanding.**” [Hugh Iltis, Wisconsin Academy Review 13(2) :18. 1966]

His preservation efforts have been successful – in Wisconsin, Hawaii, and Mexico- and his success has not gone unrecognized. He was co-founder in 1960 of the Wisconsin Chapter of The Nature Conservancy. In 1967, he instigated formulation of Hawaii's Natural Area Law, which was

enacted in 1970, and on its 20th anniversary (1990) he received “for outstanding service to the Hawaiian environment” the Conservation Award of the Conservation Council of Hawaii. Following his involvement in the discovery of diploid perennial teosinte in 1977, he played a pivotal role in the establishment of the Reserva de la Biosfera de Manantlan, which included the habitat of this rare teosinte. For this effort, he received in 1987, the Presidential Award from the Republic of Mexico. “Given the very populist land tenure law in Mexico, the reallocation of so much land to research and conservation is a major political event in Mexico that many Americans underestimate. Such land conservation measures usually must be given a domestic political focus by national and state (Guadalajara) leadership. It is a very great tribute, therefore, to Prof. Iltis's scientific and public reputation in Mexico that he, despite being a foreigner, was asked to give the dedication address (in Spanish) with the President of Mexico in attendance through this process Hugh was being acclaimed as one of Mexico's own.” [Orie Loucks] In 1992, he received the National Conservation Achievement Award from the National Wildlife Federation in recognition of his life-long contribution to the field.

His role in all aspects of his career has been, and is, to stir people up- to instill in students an appreciation of the systematics, biogeography, and evolution of plants and of the stories that their synthesis has to tell, to impart to north-temperate souls a passion for the tropical flora and a desire to do the hard work necessary to study its diversity, to impress upon funding sources the necessity of an active herbarium at the the University of Wisconsin, to confront people with the hard reality of what must be done to preserve the quality of the natural environment for human survival and for scientific study, and to convince legislators to pass laws needed to conserve the environment. He has kept in the forefront the need to preserve the natural world that we biologists study.

It is in this role that he has earned most of the unpleasant adjectives. Most who know him may find a view of him as a mother figure implausible, as, indeed, I did when a fellow ex-student of Hugh's drew this analogy last May at Hugh's retirement celebration. Upon reflection, however, it seemed to fit at least partially my experience of him. Like a mother, Hugh is endlessly loyal and supportive of his students, promoting us enthusiastically to the world and offering advice and suggestions at every opportunity, and, in return, he expects from us comparable loyalty and support. Like grown children, however, we always appreciated the support but sometimes guiltily resisted the stream of ardent advice and suggestions, which were given in an honest effort to make us better students and better citizens but which sometimes drove us crazy. Such an amalgam of love and guilt ties many children to their mothers.

By the time of his official retirement last year, he had made his reputation “as a taxonomist, and economic botanist, a teacher, a conservation biologist, an ecologist, and as a gadfly to the botanical /scientific community for greater participation and advocacy in community/world affairs.” [Paul Fryxell] In recognition of his accomplishments in all these roles, he was presented the Asa Gray Award of the American Society of Plant Taxonomists for 1994.

Of all the letters received in support of his nomination for the award, the one that seemed to me to summarize best Hugh's role in our world and our feelings about him reads as follows :

“Hugh is a phenomenal force among plant taxonomists and conservationists today. His high standing in the academic community is indicated by his being invited to give one of the eight Special Lectures at The XV International Botanical Congress in Tokyo last summer. His publications on the Capparidaceae, *Zea*, and the flora of Wisconsin, his numerous talks on his research and on conservation, and his training of 36 graduate students form the backbone of his academic career. However, these bare bones are fleshed out by the lean muscle of a frighteningly forceful, endlessly energetic personality that moves individuals and institutions in new directions. It is Hugh's personality and his ecological activism that are the qualities for which he is famous within the taxonomic community and among the general public- and infamous to many.

“Hugh inspires and motivates the people with which he comes into contact-the lay public, his students (both undergraduate and graduate), and his colleagues. His overpowering enthusiasm for the natural world-'the flowers, butterflies, birds, and whales, and children, young and old'- has emboldened

many of us to listen to our hearts and scream at the escalating destruction of our natural heritage and the ecological systems, which support us both physically and psychologically. Hugh is a latter-day Old Testament Prophet, railing against the ecological iniquities of the human species- the mindless consumption of material possessions, the heedless destruction of biological diversity and whole geographies, and the unsustainable increase in human population, the root cause of our environmental crisis. He lambastes the Pope and the Roman Catholic Church for their biologically untenable opposition to birth control and abortion. He ridicules the narrow views of economists whose idealistic systems float in a Never-Never-Land, anchored to no physical earth, much less to any biological ecosystem. He infuriates the 'Politically Correct' -liberals who would allow unlimited immigration, feminists who denigrate the role of mothers in the physical and psychological development of babies and children.

“We need people like Professor Hugh H. Iltis- larger than life, difficult, extreme, outrageous, even impossible, and sometimes just plain wrong- although only a few such incandescent egos can be borne at any one time, if we ordinary mortals are to preserve some vestige of mental balance and sanity. He warns us that we must always be vigilant for warning signals from our native, built-in 'crap-detectors.'

“In the movie, *Married to the Mob*, Angela, who is married to Eddie 'the Cucumber,' a mobster, is cornered in a grocery store by the over-dressed, over-painted wives of members of her husband's gang. The Capo's wife leans menacingly over her grocery cart and says 'We're your friends, Angela, whether you like it or not!' Many feel the same way about Prof. Iltis. He is going to be our friend, whether we like it or not. Much of the time, we, like Angela, are intimidated and would just as soon be spared. However, usually we come to realize that Hugh, however uncomfortable he makes us, *is* our friend. He gets us to do things that we really should- for our own good. And, however uncomfortable he makes some lay people, spiritual leaders, administrators and politicians feel, he is *their* friend, telling them unpleasant truths and trying to get them to change their ways- for *their* own good and for the communal good of our human society and world ecosystem.

“At considerable sacrifice to his academic career, Prof. Iltis has proselytized for the salvation of the natural world- 'the flowers, butterflies, birds, and whales' – the creatures that we as taxonomists study and love. He is truly our friend. The Asa Gray Award is a fit token of the value we place on the life's work of the remarkable 'Mensch'.” [Robert R. Kowal]