Desert Plants

A quarterly journal devoted to broadening knowledge of plants indigenous or adaptable to arid and sub-arid regions, to studying the growth thereof and to encouraging an appreciation of these as valued components of the landscape.

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Frank S. Crosswhite, editor

Editorial

Freedom in Research. In the article below on the discovery of No. 832, a distinguished plant scientist speaks out in praise of the type of freedom in academic research which has been encouraged by the United States Government through the National Science Foundation over the last 25 years,—a freedom fettered only by anonymous peer review, the intrinsic merits of a project based on its likelihood of advancing knowledge, and competition with fellow scientists for the available funds.

Dr. Iltis and his students, as plant explorers and taxonomists, have been credited with truly monumental discoveries of wild germplasm of utmost importance in modern breeding programs with potatoes, tomatoes and corn. Important potato germplasm from wild plants in South America was channelled into breeding programs by Iltis either directly or by his student (now Dr.) Donald Ugent. With another of his students, (now Dr.) John Doebley, Iltis was quick to recognize the potential value of a previously unappreciated wild relative of corn, naming it *Zea diploperennis* and making its germplasm available to breeders. It has now been successfully interbred with corn (cf. Nault and Findley in *Desert Plants*, this issue) and is the only known germplasm source of immunity to three of the most serious virus diseases of corn in the United States. As if this weren't enough, the wild *Zea* has a long list of other desirable traits which plant breeders would now like to transfer to corn. One goal, to create a perennial corn, has recently been achieved by Paul Mangelsdorf (see Walter Sullivan's article in the New York Times, February 16, 1982). Considering that the world's corn crop is now estimated to be worth 40 billion dollars a year, even the smallest improvement might have an enormous dollar value.

In the present issue of *Desert Plants*, Dr. Iltis reflects on the circumstances which brought him to arid inter-Andean valleys in Peru and the discovery of a certain wild tomato species that yielded germplasm which now promises to be worth millions of dollars annually to the tomato industry. Iltis has repaid his adopted country and his adopted state of Wisconsin many times over through the values of his research and discoveries. Few people know the story of how he and his parents fled as refugees from Brno, Czechoslovakia and the imminent takeover of that country by a dictatorial and antisemitic Nazi Germany. His father, Hugo Iltis, in 1924 wrote the biography of another of Brno's sons, Gregor Mendel, and later created a depository of Mendel memorabilia and information known as the Mendel Museum, now at the University of Illinois. Mendel's originality and search for knowledge projected him decades ahead of his peers even though as a priest he had to be extremely cautious in the utterance of his philosophical views. Steeped in the old traditions of field biology since childhood, Iltis and his students in their phytogeographic studies and explorations often took the opportunity to help advance the work of plant breeders by sending them quite unexpected but much appreciated shipments of seeds from remote corners of the globe.

In reflecting back, Iltis is eager to credit the United States Government, through the National Science Foundation, and also the State of Wisconsin and its University, for making many of his "happenstance" or "serendipitous" discoveries possible. It is difficult to assess a man's importance in his lifetime, but the present editor has little doubt that some Joseph Ewan of the future will be able to show that the dollar value of this one man's discoveries and contributions eventually exceeded the total cumulative value of grants made *to all scientists* by the National Science Foundation for the entire 25 years following its inception!

In the article below, Dr. Iltis praises the system of government support of higher education and research in the United States which has allowed academic persons to be free to chart new directions of study and investigation,—directions which neither a dictatorial government nor most private profit-seeking corporations would have considered or solicited.

Interestingly, esoteric research projects which originally were designed to increase understanding in abstruse areas of knowledge often have a way of paving the way for breakthroughs in applied research. The slow but steady advance of our frontiers of knowledge under NSF support, which has made the USA foremost in many areas, can be likened to the slow but steady geologic movement of the earth's tectonic plates. And we know not the day nor the hour when a breakthrough will come with earthquake or volcanic force! But stifle the freedom of those who would reach out with honest inquiry, creativity, individuality and innovation and only narrow bureaucratic opinions will prevail. The Iltis family learned this long ago in Czechoslovakia. In 1982 we are lucky to still have first-hand access to this heritage through Professor Iltis's unique outlook.