

Professor Katarina-Daniela Dubravec – Croatian botanist. On the occasion of her seventieth birthday



Professor Katarina-Daniela Dubravec, PhD. (Matek) was born April 30, 1933, in Nova Cerkev pri Vojniku (Slovenia), where she completed her elementary education. She went on to attend the Real Gymnasium secondary school in Celje, from where she moved to Zagreb (Croatia) to graduate in Agriculture at the Faculty of Agriculture and Forestry in 1959. She spent three years as a demonstrator at the Botany Department at the Faculty of Agriculture and Forestry, University of Zagreb. As an undergraduate, she spent three months of practical training at the Institute of Phytopathology and Applied Zoology in Giessen (Germany). For a short period, she headed the Livestock Production Department at the Agriculture Industry Coop «PIK Drenovci» near Vinkovci (from June 1–November 30, 1960).

On December 1, 1960, she was appointed research assistant for agricultural botany at the Department of Botany at the Faculty of Agriculture and Forestry, University of Zagreb. She completed the tertiary level of education at the Faculty of Science of the University of Zagreb, graduating in her major – Botany: Morphology and Physiology. She earned her master's degree in 1965 with her thesis – *A Contribution to the Knowledge of the Anatomy of Ecballium elaterium (L.) A. Rich.*

In 1965/1966, she received a scholarship from the Government of the Kingdom of Denmark to study at the Department of Plant Biology of the Royal Veterinary and Agricultural University in Copenhagen. During her seven-month stay there, she worked on research concerning photosynthesis, transpiration and photoperiodism.

Her PhD. came in 1972 with a dissertation on *A Contribution to Knowledge of the Anatomical Structure of Fruits of some Cultivated Representatives of the Genera Cucurbita and Lagenaria* at the Faculty of Agriculture of the University of Zagreb.

She became an assistant professor in 1974, an associate professor in 1979 and became a full university professor in 1984.

Together with Professor Jelka Anić, PhD. from 1980–1984, she lectured on *Botany for Animal Sciences* and *Plant Physiology*. From 1989/90 to her retirement, she lectured in the courses of *Botany* and *Plant Physiology*, as well as occasionally lecturing in *Floriculture*, *Decorative Plant Cultivation* and *Park Plants*.

It should be particularly pointed out that lectures in botanical subjects were for freshmen, i.e. a very large number of students were present at lectures, a number of exercise groups and field trips. This demanded a high level of diligence and effort from lecturers and their assistants.

She also lectured for postgraduate courses at the Faculty of Agriculture of the University of Zagreb. Her lectures in the study of plant sciences concerned *Selected Chapters of Plant Physiology*, while *Phytophysiology* was her lecture topic pertaining to agro-ecology.

Professor Dubravec was an associate of the Mostar Faculty of Agriculture and the Agricultural Department of the Poreč branch of Rijeka College, where she lectured on subjects from the field of botany.

Prof. Katarina-Daniela Dubravec, PhD. was the head of the Department for Agricultural Botany at the Faculty of Agriculture of the University of Zagreb from 1989 to 1999, when she retired.

Aside from her numerous lecturing responsibilities, Prof. Dubravec is also an all-round scientist, professional, pedagogue and publicist in the field of botany: Morphology and Physiology of Plants, Floristics and Vegetation Mapping.

Among her more outstanding work is research on fruit ontogeny. By researching fruits from the squash family (*Cucurbitaceae*), particularly *Bryonia*, *Cucurbita*, *Ecballium* and *Lagenaria* she proved the seed-vessels of those plants create congenital grafting of leaf ovary walls with receptacle torus walls. As the peripheral parts of squash plants develop from receptacle walls and create the outside skin of fruits, Prof. Dubravec dubbed it the *pericarpoid*. She considers the pericarp tissue that develops from fruit leaves embracing the particularly fibrous parts of fruit. Due to the border between the pericarpoid and the fruit coat in the squash not being very sharp, she labeled as pericarpoid any peripheral tissue reaching all the way to the veins on the inside of the fruits.

She studied the ontogeny of fruits in apples and pears. She particularly concentrated on cystolites thicker cell walls in squash (*Cucurbita pepo*), beans (*Phaseolus vulgaris*) and pulverizer (*Ecballium elaterium*), as well as milk tubes, cork and anomalous structures in various squash (*Cucurbitaceae*).

In numerous studies, Prof. Dubravec covered the anatomic substance of leaves from some fruit and decorative species, as well as some cultivars of tobacco.

Furthermore, Prof. K. Dubravec paid particular attention to the dynamics and intensity of leaf transpiration in various agricultural crops (apples, peaches, pears, corn and tobacco), as well as weeds and Judas tree (*Cercis siliquastrum*), in her eco-physiological research.

Professor Dubravec took part for over a decade in research on what effects growth regulators have on cultivated plants, publishing 24 papers on this topic. In most of those papers she dealt with the application of various substances as growth regulators (Agrispon, Agrovit, Alar, Cultar, Ergostim, Ethrel, Tomatin, etc.) in fruit growing (apples, pears, blackberries and sour cherries), gardening (tomatoes and peppers), arable farming (corn, wheat and Swedish turnip), as well as in viticulture. She also researched the influence of growth regulators on the growth and development of tobacco and chrysanthemums, while in one paper she published her results on a study of the application of growth regulators on nonagricultural surfaces.

A major part of Prof. Dubravec's scientific work encompassed floristic and phytocological research. She established four new kinds of flora in Croatia: *Cucumis metuliferus* (*Cucurbitaceae*), *Proboscidea louisianica* (*Martyniaceae*), *Sechium edule* (*Cucurbitaceae*) and *Solanum muricatum* (*Solanaceae*). Aside from that, she described new habitats for the following species: *Eleusine indica* for Croatian flora, *Echinocystis lobata* for Cro-

atian and Slovenian flora, *Chimaphylla umbellata* for Slovenian flora and *Sicyos angulatus* for the flora in what used to be Yugoslavia. She also researched weed flora on rocky pastures in the central part of Cres Island and in vineyards in the Okić – Plješevica vineyard district.

Prof. K. Dubravec studied the flora in field communities in the area of the Sovska Lake, Podravina, Slavenska Požega and Slavonski Brod. Furthermore, she published a number of papers on peat, grass and vegetation of pine forests in the area of her native Vojnik kraj Celja (Slovenia), including a paper on vegetation changes caused by game.

Prof. Katarina-Daniela Dubravec, PhD., both independently and as a coauthor, published 87 papers.

During her work Prof. Dubravec at the Department of Agricultural Botany of the University of Zagreb worked on a number of themes and projects of the University of Zagreb Faculty of Agriculture, as well as for the University of Zagreb Faculty of Science. She participated in the mapping of Croatian vegetation map for close to fifteen years on a project under the auspices of the University of Zagreb Faculty of Science.

Prof. Katarina-Daniela Dubravec PhD. independently authored two textbooks titled *Botany* and coauthored four: *Botany, Plant Physiology, Cultivated Plants in Croatia and Neighboring Areas* and *Field and Pasture Plant Species*. Prof. Dubravec coauthored *Red Books of Plant Species in the Republic of Croatia* (sections on Slatina, Slavonski Brod and Karlovac), as well as *Vegetable Protection*.

Prof. K. Dubravec was a mentor to two agronomists during their postgraduate master and doctoral degree studies. She was also a mentor in 22 undergraduate papers, as well as a member of 35 graduation committees, 8 master degree committees and 6 doctoral committees.

Prof. Dubravec, PhD. is a member of four scientific and professional societies in Croatia, as well as the Eastern Alpine and Dinaric Society for Vegetation Ecology and Federation of European Societies of Plant Physiology.

During my years of working and socializing with Prof. Dubravec, PhD., I have come to know her as a professor and mentor. Every time we met, our time together was both interesting and useful. I will certainly cherish each encounter I had with her.

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