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George M. Darrow: The Dean of Small Fruits[1]

Marvin P. Pritts[2] and Alyssa A. Pritts

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Abstract

George Darrow was one of the leading pomologists of the mid-20th century having a 46-year career with the United States Department of Agriculture. During his appointment as small fruit breeder in Glendale and Beltsville, Maryland, he released a number of significant fruit cultivars. 'Blakemore' strawberry and 'Bluecrop' blueberry dominated the industry after their releases. Darrow also wrote the definitive work at the time entitled "The Strawberry" - a valuable reference book to this day. The introduction to this book was written by Henry Wallace, the vice-president of the United States. Darrow did pioneering work on photoperiodism and perfected techniques to propagate and distribute virus-indexed strawberry plants. Darrow received many awards including the Wilder Medal (1948) and the Liberty Hyde Bailey Award from the American Horticultural Society (1960). He was elected fellow of the American Society for Horticultural Science in 1965 and served as its president in 1949. He was inducted posthumously into the Maryland Hall of Fame in 1996. Darrow retired in 1957, but his joy of working with plants remained steadfast. He started a pick-your-own strawberry farm with his sons in Maryland and began a robust daylily breeding program which produced 59 cultivars. His failing eyesight ultimately deterred his fieldwork. Darrow died at age 94 after a stellar career.

George M. Darrow (1889-1983) was recognized as the foremost American authority on strawberries during the 20th century. The year 2016 marks the 50th anniversary of the publication of his most well-known work "The Strawberry: History, Breeding, and Physiology" (Darrow, 1966). The book is a comprehensive and illustrative work in which Darrow "acquaints the reader with the strawberry, its origin and appearance, the structure of its fruit and plant, where and how it was developed and by whose hands, who is working with it now, and what can be expected of it." He sets out to answer the questions: "Will it continue as a major fruit? What are its weaknesses and its strong points? Is it worthwhile? How can we best take advantage of the present ease of interchange of ideas and germplasm?" The book is filled with historical paintings from as early as 1400, hand-drawn and painted illustrations of maps and cultivars, and an extensive narrative about the history and evolution of the plant and associated culture both in the field and the lab. The Vice-President of the United States and former Secretary of Agriculture, Henry Wallace, encouraged Darrow to write this book. Wallace then wrote the introduction. The first printing of 5,000 copies sold out almost immediately. *The Strawberry* is still used by teachers and researchers as a reference guide.

Darrow was born 2 Feb 1889 on a dairy farm in Springfield, Vermont. He was described by his colleague F.F. Cullinan, as a "genuine Yankee from southern Vermont" with a strong work ethic from a young age (USDA, NAL, Special Collections). To generate off-farm income for the family, Darrow held several miscellaneous jobs selling ice, eggs, hay, medications and phones. He was always interested in plants, and while attending Middlebury College, assisted the president with maintaining his *Viola* collection. Darrow received a Bachelor's degree in Botany from Middlebury College in 1910.

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[1] Much of the information contained in this paper was gleaned from boxes of the personal correspondence and field notes of George Darrow located in the National Agriculture Library in Beltsville, MD. The authors are grateful for the assistance of the librarians in procuring this information.

[2] Horticulture Section, School of Integrative Plant Science, Cornell University, Ithaca NY

Darrow went on to earn a Master's degree in Pomology from Cornell University in 1911 where he studied orchard systems. After graduating from Cornell, he married and began employment with the USDA where he worked for 46 years (1911-1957). His employment with the USDA was temporarily interrupted while he served in the army during World War I from 1918-1919. He was among the first team of researchers to study the strawberry chromosome, and in 1927, his work on strawberry physiology earned him a doctorate at Johns Hopkins. He obtained his Ph.D. while still employed at the USDA and raising six children.

Darrow's accomplishments in strawberry crop breeding and berry crop physiology included the introduction of the cultivar Blakemore, which set a new standard for firmness and productivity for 20 years and was once planted on 30% of the U.S. strawberry acreage. He went on to develop 28 cultivars of strawberry over the course of his career (e.g. Fairfax, Albritton, Surecrop, Redglow). Darrow pioneered work on photoperiodism in strawberry, documenting the need for short days and cool temperatures to induce flowering in most genotypes. His early work on virus-indexing through graft inoculation was among the first for any fruit crop. Darrow realized that breeding efforts would be compromised if parental lines were infected. He worked with nurserymen to propagate clean stock in isolation from other plantings and to use aphicides to control the virus vector. He established collaborative breeding programs throughout the country, but those in North Carolina and Oregon were particularly strong. Darrow also made a strawberry collecting trip to Chile, Ecuador, and Colombia in 1957.

Darrow's contributions were not limited to strawberries. He earlier worked with cranberries in Massachusetts, post-harvest storage of berries in Oregon, citrus in Florida, strawberries in Tennessee and an array of berry crops in Maryland. He released seven cultivars of blueberries (Bluecrop, Earliblue, Blueray, Berkeley, Coville, Wolcott, and Tifblue), and a number of raspberries, blackberries, dewberries, gooseberries, and beach plums. 'Bluecrop' may have been the most widely-planted blueberry cultivar in the world at one time. He curated extensive collections of native American fruit species and he understood the genetic barriers to breeding across ploidy levels. Darrow became a leading contributor to scientific strawberry literature over the course of his career, including 230 books, articles, and bulletins.

While conducting research, he built relationships with farmers and breeders across the United States and around the world. He was recognized for his close relationship with farmers which helped him better refine breeding objectives. He cooperated with experiment stations in the United States and Scotland to develop cultivars that would withstand disease.

He occasionally became embroiled in what would today be considered intellectual property disputes, notably the renaming of cultivars that he named and released. The following personal correspondence details one such incident.

"I have a question to put to you in regard to a nursery changing the name of the Cameron dewberry. Monrovia Nurseries has been advertising and selling this plant under a new name, called "Victory Berry." Now the question is, what should be done about it, if anything. Should it be ignored? Should we ask them why they changed the name? Should we request that they not do this? Should we inform the Departments of Horticulture on the West Coast that they are doing this?" – C.F. Williams, 11 Dec. 1944

"I think it would be well worth while for you to write to Monrovia, stating that it is not good horticultural practice to rename varieties and that you would appreciate a statement in regard to this." – G.M. Darrow, 16 Dec. 1944

Darrow received a number of prestigious awards and promotions, including: Administrative head of Small Fruit Breeding (1945), Wilder Medal (1948), President of the American Society for Horticultural Sci-

ence (ASHS) (1949), Liberty Hyde Bailey Award from the American Horticultural Society (1960), ASHS Fellow (1965), Janick and Moore book dedication (Magness, 1975) and Prince Georges County Maryland Hall of Fame (1996). He was awarded an honorary doctorate from North Carolina State University in 1963 for improving the strawberry and blueberry industry in that state. It was about this time that his colleagues began referring to him as the "Dean of Small Fruits" (Fusonie, 1990).

Darrow retired in 1957, but his joy of working with plants remained steadfast. He continued to participate in making selections at Beltsville. He started a pick-your-own strawberry farm with his sons in Maryland, considered to be the first in the state. He began a robust daylily breeding program which produced 59 cultivars. His friend Henry Wallace states, "He associates joyously with his plants - he is a rare individual, a genuine plantsman. This title in my opinion is far beyond that of any Ph.D. (Wallace, 1966)."

"Darrow was one of those rare individuals whose keen intellect, considerable energy and broad professional interests enabled him to master and help define a field as diverse as 20th century pomology. His personal charisma, utter trustworthiness, boundless enthusiasm, love for young people and excellent communication skills enabled him to talk to farmers, write, plan and execute research programs. He is one of the horticultural giants of the 20th century (Galletta, 1993)." Galletta participated in honoring Darrow on the 100th anniversary of his birth at a meeting of the North American Strawberry Growers Association in Beltsville, MD.

Eventually, Darrow lost his vision and was no longer able to assist with the farm or with making selections. Although he passed away in 1983 at the age of 94, his daylily farm in Vermont continues to be managed by his grandson. Darrow's legacy endures well into the 21st century.

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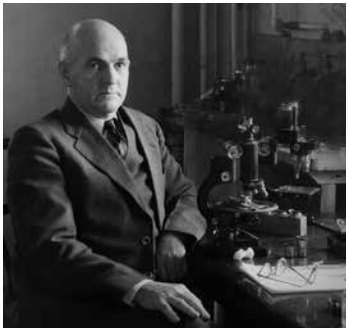
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