Ben Morrison and His Azaleas

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The Glenn Dale, Belgian-Glenn Dale, and Back Acres azaleas that we enjoy today are attributable to the vision and personal industry of one man, Benjamin Yoe Morrison. Born

Ben Morrison photographed on May 3, 1954, during the dedication of the Morrison Garden at the US National Arboretum. *(Original USDA photo by Matthews)*

on September 25, 1891, in Atlanta, Georgia, the eldest child of Isabel and Lisle Morrison, Ben Morrison graduated from Central High School in Washington, DC, in 1909 where even at this early age his artistic ability and attention to detail were evident. The personal reference in his senior yearbook reads: "Benjamin is a Georgia cracker, a regular hot-headed Confederate from Atlanta, Georgia. You wouldn't think it to look at him but it is the truth. He is the best man in the class for grabbing E's, and he gets them because of his conscientious work. He has always been quiet, but he gets there just the same."

Morrison attended the University of California at Berkeley and graduated *Phi Beta Kappa* with a BS in Agriculture *cum laude* in 1913. He continued his studies at Harvard and received a Masters of Landscape Architecture in 1915. While it is noteworthy that Morrison's interest in azaleas developed prior to the commencement of the formal Glenn Dale project, as a trained horticulturist and a landscape architect who traveled to Japan in 1916 under a Sheldon Fellowship from Harvard, he could not have missed being impressed by the azalea component of springtime in Japan. During World War I, he served first in the US Army Medical Corps and later in the Sanitation Corps.

A Career Begins, Ends, and Resumes

In 1920, when he took a job as a Landscape Gardener (Scientific Assistant in Landscape Gardening) with the Bureau of Plant Industry of the United States Department of Agriculture, one of his activities was to conduct trials and tests of ornamental plants used in connection with landscape gardening. While the focus for this activity seems to have been chiefly roses and peonies, this placed Morrison in an organization that received all kinds of plant material from all over the world. Working for an agency whose mission was plant exploration and introduction, there was very little in the way of plant material to which he did not have access. Given all that, it would seem, however, that Morrison developed his azalea expertise on the side at his home in Takoma Park, Maryland, a northern Victorian suburb just across the District Line.

The Plant Introduction Station at Glenn Dale, Maryland, some 16 miles northeast of Washington, DC, was established in 1920 by P. H. Dorsett on 70 acres of the Darrow and Woodworm farms. Dorsett was a noted plant explorer, after whom Dr. Eugene Hollowell named the popular fall blooming *Rhododendron kaempferi* 'Dorsett'. The Plant Introduction Station at Glenn Dale, often referred to as Bell Station and now a Plant Quarantine Laboratory, was the receipt and entry point for a lot of interesting plant material from government plant explorers and foreign growers. To put this in perspective, the establishment of the station was two years after E. H. Wilson acquired "Wilson's Fifty" for the Arnold Arboretum.

In 1922, Ben Morrison considered pursuing a different career, resigned his position, and went to New York to study music. An excellent pianist with a "solo grade" voice, he told friends that music brought him much pleasure. For whatever reason, it did not work out, and he was reinstated in 1924 as an Assistant Landscape Architect. In fairly short order, he progressed through various transfers and promotions from Junior Horticulturist and Assistant Horticulturist in 1924 to Associate Horticulturist in 1926.

The bill establishing the US National Arboretum was signed by President Coolidge in 1927, Dr. Frederick V. Coville was appointed Acting Director in 1929, and Mr. Oliver Freeman was appointed Field Superintendent one year later.

Azalea Breeding Program Begins

In a document entitled "Report of Azalea Breeding July 1, 1928," that was found in the files at the Glenn Dale Station, Morrison mentioned that his personal collection included 'Indica Alba', 'Indica Rosea', 'Indica Magnifica', and various small-flowered forms that he concluded were hardier forms of the "Kurume azaleas." He was impressed with the hardiness of "Kampfer's azalea" [sic] and chose it as the seed parent for his first cross, *R. kaempferi* x 'Indica Alba', seedlings of which bloomed for him for the first time in 1928.

Morrison's formal plan was to develop a race of large-flowered azaleas, resembling the Indian hybrids of Southern

gardens, which would be well suited for landscape use in the Washington, DC, area. His approach was as simple as it was classic and involved crossing hardy species and garden forms of the period with the more tender but larger-flowering forms. In retrospect and noting that not all of the Glenn Dale hybrids have 3" or 4" flowers, one concludes that his "large-flower" goal sustained a modification as the project progressed.

His notes indicate that additional crosses, reciprocal crosses, and back crosses utilizing *R. kaempferi,* various Kurume hybrids, *R. mollis, R. simsii, R. poukhanense,* and his initial *kaempferi* x 'Indica Alba' hybrids were performed prior to the government project. Given his opportunities, his experience, and what we have learned about his characteristic attention to detail, it is not surprising that he would begin to develop a familiarity that would enable him to recognize parental characteristics in subsequent progeny.

In the introduction to Monograph 20, Morrison states that the official project was "set into motion on a serious scale" in 1929. Coincidently, this was the same year that R. Kent Beattie introduced his Kurume hybrids from Japan. Parenthetically, included with the Kurumes was the Satsuki hybrid that became George Harding's 'Oh My'. By this time Morrison had achieved the title of Senior Horticulturist and had been given the responsibility for the four field stations in Glenn Dale, Maryland; Miami, Florida; Chico, California; and Savannah, Georgia.

In an article for the University of Washington's *Arboretum Bulletin,* Morrison succinctly outlined his basic approach: "As a routine procedure, therefore, pollination was carried out very largely under glass, using potted specimens, grown under cool to cold conditions. The resulting seedlings were well cared for inside for two winters. All were planted out-of-doors in thick oak woodland with a slightly sloping terrain, in well-prepared soil that has always supported native ericaceous plants. Good care extended to watering for the first summer. After that time nature took over, and as was to be expected, there were many deaths, although not as many as we had been prepared to face." So, it was in 1930 that they began planting azalea seedlings in the "woods" at Glenn Dale. The hybridizing continued.

In 1937, Ben Morrison made his first selections for further study. With the death of Dr. Coville that same year, Ben Morrison was named Acting Director of the US National Arboretum, "without compensation and in addition to his other responsibilities." One can imagine how the administrative demands upon his time were ever increasing.

The years 1938 and 1939 saw the acquisition of the Chugai Satsuki introductions. 'Adzuma-no-hana' and 'Shinnyo-no-tsuki' were later used in the breeding program.

The selection process continued in 1939, 1940, and 1941, which brought the total selections to 830. With the advent of World War II, however, all work with azaleas ground to a halt and Glenn Dale's and Morrison's attention turned to supporting the war effort. In fact, from October 1, 1943 to March 29, 1944 Ben Morrison was "transferred," reassigned, or loaned to the Office of Foreign Agricultural Relations, Latin American Division, in Bogota, Colombia, for the purpose of "making observations" on the *Cinchona* developments in Guatemala, Costa Rica, and Colombia, to determine how to best "collaborate in the production of complementary crops" (chiefly other sources of quinine).

Glenn Dale 'Morning Star' shown with two sports. *(Photo by Bill Miller)*

Glenn Dale Azalea Distributions

In 1942 and despite the change of mission necessitated by the war, the first of eight official distributions of Glenn Dale hybrids occurred. Because of the change in mission, the Glenn Dale greenhouses and cold frames were cleared, and all remaining rooted azalea cuttings and potted plants were transferred to the US National Arboretum where they were put in cold frames or lined out in nursery beds. If it wasn't already there, I'm sure some of the plant material found its way to Morrison's home in Takoma Park.

After the war, Glenn Dale endeavored to pick up where it had left off. In memos for the record in 1946 and 1948, Ben Morrison documented that he was providing the station with azalea cuttings from his collection at home because it was easier to find them in his home garden than to hunt for them in the azalea plantings at Glenn Dale, which had suffered from a lack of care.

Morrison resumed the selection process in 1946 and continued to make selections until 1951. Post-war selections numbered 312, which brought the total number to 1,142.

After the war, much of Morrison's focus turned to the Arboretum. In 1947, an 8-acre tract of the southern face of Mount Hamilton was planted with Morrison's selected azaleas and work was begun for an "azalea display

Belgian-Glenn Dale 'Pink Ice', one of five introductions from 16 finalists from 96 selections from 1200 seedlings. *(Photo by Bob Stewart)*

garden" that was to later be dedicated in his honor. In 1947 he also began the work that was to become known as the Belgian-Glenn Dale hybrids. For some reason he waited three years before he sought permission to undertake the project. It is fortunate that his proposal was approved, since he had plants in hand.

In 1948, John Creech came to the Glenn Dale Station. The azalea distribution process resumed and continued through 1954. Over the life of the official distribution process, it should be noted that 54 gardens, nurseries, and individuals in 19 states and the District of Columbia received shipments, though not all participated equally or were in the program from beginning to end. There were 12 recipients in 1942 and a high of 33 in 1950. Overlook Nurseries in Mobile, Alabama (Sawada); Golden Gate Park in San Francisco, California; Fruitland Nurseries in Augusta, Georgia; Kingsville Nurseries in Kingsville, Maryland (Hohman); Tingle Nursery Company in Pittsville, Maryland; Swarthmore College in Swarthmore, Pennsylvania (Wister); and the University of Washington Arboretum, in Seattle, Washington, were the only participants who received plant material every year. The final thought on the matter of the distribution of the Glenn Dale hybrid azaleas rests with the recognition that there was also an unofficial distribution process; that is, an unknown number of individuals, nurseries, and organizations (e.g., Milo Perkins) received plants now and then. This unofficial distribution may well account for the survival and existence of some of the Glenn Dale hybrids that were never formally distributed (e.g., 'Fenelon').

Plans for Retirement

It is evident that Morrison had been considering retirement for a number of years. In an April 18, 1949, memorandum to Robert M. Salter, Chief of the Bureau, he offered to withdraw his request for retirement to enter upon a new job. Morrison proposed that he be permitted to: 1) give up his responsibilities for the Division of Plant Exploration and Introduction; 2) focus full time on the Arboretum, the propagation and placement of the Glenn Dale Azaleas, planning the plantings for the Plant Industry Station; and, 3) be granted such leave without pay as might be requested. Morrison was acutely sensitive about what he perceived to be outside interference with regard to the Arboretum and made his displeasure known on more than one occasion with talk of retirement. My favorite remark along these lines is: "the democratic processes have so broadened the decisions that they lack all character." Morrison's proposal was approved, and effective July 1, 1949 he was assigned to the Arboretum full time.

Morrison's last several years prior to retirement had numerous periods of "leave without pay," which were invested in "personal business," both locally and in Pass Christian, Mississippi, where he eventually relocated, established a small nursery, pursued his interest in studying and hybridizing azaleas and eventually introduced the Back Acres hybrids, named after the family home of his friend, Ivan Anderson. Morrison's interest had turned to developing doubles and flowers with white eyes and colored borders, a logical extension of the Glenn Dale work. He also had become very interested in the Satsuki hybrids and had come to appreciate their potential impact on developing new and later-blooming cultivars.

Back Acres 'Margaret Douglas', a fine example of the colored border/lighter center combination that characterizes many of the Back Acres hybrids. *(Photo by Bob Stewart)*

In April of 1951, Ben Morrison was named Director of the National Arboretum after having served in an "acting" capacity for 14 years. Ironically, in November of that same year, he retired from federal service as a GS-14 Horticulturist, only to be rehired under a temporary, 12-month appointment as a GS-13 Horticulturist consultant. Among other things, this arrangement permitted an orderly search for his successor. Dr. Henry T. Skinner was appointed the Director of the National Arboretum in September of 1952, and he benefited greatly from Morrison's counsel. It is unclear when Morrison actually moved to Pass Christian, Mississippi, full time. It was a gradual process over a number of years and involved many of the already mentioned periods of "unpaid leave."

Azalea notables at the dedication of the Morrison Garden (left to right): Leamon Tingle; Andrew Adams, Sr.; H. H. Hume; David Leach; Albert Close; John Wister; and B. Y. Morrison. *(USDA photo by Matthews)*

By March 1953, the editing of the Monograph 20 manuscript had been completed and the finished product was issued in October. On May 3, 1954, before a large audience of friends and associates, the azalea clonal garden at the Arboretum was dedicated in Morrison's honor.

Morrison's Legacy

One might be tempted to think that the story of the 454 Glenn Dale hybrids, the 16 Belgian-Glenn Dale hybrids, and the 53 Back Acres hybrids ends with the publication of Monograph 20, the conclusion of the formal distribution process, Morrison's death in 1966, or even the passage of sufficient time, but that is certainly not realistic. Morrison was a prolific writer, and much of his personal correspondence and many of his drawings provide additional insight into the behavior and performance of his azaleas. Because new chapters are being written as succeeding generations of hobbyists and professionals alike rediscover the variety of color, shape, and size that characterizes Morrison's azaleas, his legacy will continue as long as there is an appreciation for beauty.

__William C. Miller III__ is __a__ recipient of the Society's Distinguished Service Award and the Brookside Gardens Chapter's Frederic P. Lee Commendation. He is a past president of the Brookside Gardens Chapter, a former vice president of the Society, __a__ past member of the ASA board of directors, co-chairman of the ASA's membership committee and chairman of the public information committee, a long-time ASA member, and a frequent contributor to __The Azalean.__

Digital Pictures in The Azalean and on the Web

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It's All About Resolutions

No, not New Year's—for digital images, resolution is the number of pixels in the image. The more pixels, the higher the resolution. The higher the resolution, the bigger the print you can make, either on your own inkjet printer or in ***The Azalean.***

What's a *pixel?* It's short for picture element, and when you're talking about digital cameras it's one of the many light-sensing dots on the tiny thing the camera uses instead of film. That thing is called the *sensor,* or sometimes a *CCD* or a *CCD sensor.* It's deep inside the camera, you never see it, and it is usually about a 1/2" square. When you take a picture, the camera first records the amount of light hitting a filter for each of three colors (red, green, blue) for each pixel on the sensor. Then the camera copies that information from the sensor to its *storage device.* That's the little rectangular card you can remove from the camera with your pictures recorded on it. Your computer then makes sense out of that information to:

- turn it into a picture on the screen; or
- send it to your printer, whose computer can turn it into an inkjet print; or
- send it to your friends as an attachment to an e-mail; or
- send it to our editor, whose computer can turn it into a picture in ***The Azalean.***

The resolution of a digital camera is described in *megapixels,* or how many millions of pixels its sensor has. More megapixels equals larger pictures. The size of an image (measured by width x height in pixels) for four popular digital camera sizes is:

Camera Size	Image Size
2-megapixels	1600 x 1200 pixels
3-megapixels	2048 x 1536 pixels
4-megapixels	2272 x 1704 pixels
5-megapixels	2590 x 1920 pixels

For comparison, the resolution of a 35-millimeter slide ranges from 6 megapixels to 14 megapixels, depending on the film and the quality of the slide processing.

So How Big Is My Picture?

One of the more confusing things about a digital image is that the size of the picture you see depends on the resolution *and* on how close together the pixels are when you are looking at it. The pixels in a digital image can be spread apart or squeezed together to fit any given physical image size, without changing the number of pixels in the image. If you squeeze them tightly together you get a small high-quality print. If you spread them further apart you get a large low-quality print. See Photo 1, a 1" x 1" print at 288 pixels per inch, and Photo 2, a 4" x 4" print at 72 pixels per inch, which shows how the image degrades. They are printed from the same 83000-pixel image-the only difference is the physical size of the image.

While you can specify the physical size of the image, how big it actually appears to be also depends on the device used to show it, such as the computer screen or a printer.

Computer screens normally have 72 pixels per inch—but they have their own resolution issues. So, how big the image will appear to be on the screen depends on the size of the