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## THE VALUE OF A SCIENTIFICALLY AESTHETIC OAK COLLECTION AT THE SCOTT ARBORETUM

by Andrew Bunting

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The Scott Arboretum, located in southeastern Pennsylvania, forms the campus of Swarthmore College. The Arboretum was established in 1929 to "display the better kinds of trees, shrubs and herbaceous plants suited to gardens in eastern Pennsylvania". The Arboretum was named for Arthur Hoyt Scott, class of 1885, who had always dreamed of creating a campus arboretum. Today, the mission remains the same, with a slight change to emphasize the use of woody plants.

The stately grounds of the campus have been developed for over a century. Even before the founding of the Arboretum, the early Quaker founders of the College had been planting specimen trees since 1864. Today this majestic campus has a strong compliment of new plantings, dominant specimen trees, mature avenues, large open spaces, and stunning gothic-style architecture.

Throughout the last 125 years, oaks have played an important role in the development of the character of both Swarthmore College and the Scott Arboretum. Because of their relative resistance to pest and disease problems, they have continued to be our most important specimen and shade trees.

Our most prized specimen shade tree is *Quercus x benderi*. The Bender oak is a naturally occurring hybrid between *Q. rubra* and *Q. coccinea*. This tree is estimated to be over 350 years old. Because it has been grown in cultivation for most of its life (probably as a pasture tree early on) it has developed a massive spreading crown.

Today the campus still has many survivors from the early plantings at the College. Rising behind the Arboretum Offices is a grand specimen of the bur oak, *Quercus macrocarpa*, which was planted as a class tree in 1876. Close by is a towering specimen of the red oak, *Quercus rubra*, which has an inbedded inscribed stone acorn at the base with the date, 1880. Reaching out into a green oasis, which forms the center of our Cherry Border is a picturesque specimen of *Quercus velutina*, the black oak. In 1881 an allee of swamp white oaks, *Quercus bicolor*, was planted on both sides of the main walkway leading up to Parrish Hall, the College's largest and oldest building. Today this planting provides the most distinguishable space on campus. This shaded avenue, over 1000' long is the first sight many see upon first visiting the campus. In the spring it is underplanted with over 20 cultivars of daffodils. In the fall, *Colchicum*, the fall blooming crocus, rise through the ground covers planted at the base of these towering trees. For over 100 years, this planting of oaks has been referred to as Magill Walk, to commemorate the first president of the College. As the trees have matured, and some died, the integrity of the space has been maintained by planting progeny from these mighty oaks.

In almost every case when a class, dedication, honorary, or memorial tree was planted an oak was chosen. In 1913 to commemorate Founder's Day for the College, Woodrow Wilson planted a scarlet oak, *Quercus coccinea*, and in 1932, Jane Addams, Peace Activist, planted *Quercus palustris*, the pin oak, to also commemorate Founder's Day.

Today, the Arboretum still has an active Dedicated Tree Program which incorporates more than any other genus *Quercus* as its primary tree. Recently, many two to two and one half inch caliper specimens of *Q. phellos*, *Q. macrocarpa*, *Q. imbricaria*, *Q. coccinea*, and *Q. alba* have been planted.

During the early years of the Arboretum, several other specimen oaks were planted for evaluation reasons. These trees were planted as individual specimens in order to evaluate them as far as their suitability for use as street, specimen and shade trees. Several mature specimens exist today and have proven their merit. A mature grove of varied species exists along Route 320, the main road that dissects the borough of Swarthmore. Some of these trees include *Q. cerris*, *Q. robur*, *Q. acutissima*, and *Q. lyrata*.

Over the last two years at the Scott Arboretum, new work has begun on the genus *Quercus*. Sources and references have been reviewed to search for plants that may be hardy in the Delaware River Valley, USDA Zone 6B. We are trying some plants that are listed as USDA Zone 7 or 7B, because we have found with many genera that this listing is not always accurate. In fact, for over 30 years, *Q. myrsinifolia* has thrived with minimal winter damage despite much warmer zone ratings in some literature citations.

This project includes several steps:

- 1) Reviewing literature, including catalogs to develop a list of *Quercus* species, selections and hybrids to acquire.
- 2) Obtain the plants on the list (acorns through seed exchanges, purchase plants from catalogs, etc.).
- 3) Many of these oaks will then have to be grown on to a suitable size before they can be placed on the Arboretum grounds.
- 4) Once they reach landscape size, they will be planted out, not all together, but in landscape situations, often used as specimen plants.
- 5) For the first several years they will be evaluated for winter hardiness and adaptability to our conditions.
- 6) In subsequent years they will be evaluated for ornamental attributes, such as fall color, growth rate, form, etc.

The ultimate goal of this project is to eventually have a collection of oaks that comprehensively represents the best ornamental oaks for the Delaware River Valley.

Within the last two years, 59 new taxa of *Quercus* have been added to the collection. Many of the plants and acorns have come from Oikos Tree Crops, Windrose Nursery, Woodlanders Nursery, North Carolina State University Arboretum, and Steven Roesch. Many have been included in an attempt to find new evergreen species which do well in our climate, as well as to test those which may be marginally hardy which have never been tried in this area such as, *Quercus phillyreoides* 'Emerald Sentinel', *Q. trojana*, *Q. ilex* var. *rotundifolia*, and *Q. austrina*.

Several hybrid oaks are also being cultivated. For instance, Oikos Tree Crops is promoting a hybrid between *Q. macrocarpa* and *Q. robur* which has shown hybrid vigor plus excellent resistance to mildew. And, the 'Ooti' oak is a selection made for a nice rounded crown and sweet acorns. It is a hybrid of the following: *Q. macrocarpa* x *Q. muehlenbergii* x *Q. robur*. This hybrid, according to Ken Asmus of Oikos Tree Crops, "bear in 4-7 years...and the new foliage is a distinct golden color."

This new Oak Evaluation Project should make a worthwhile addition to the existing collection of mature oaks. After several decades it is the hope of the current Arboretum staff to visit the campus of Swarthmore College and experience an even more diverse representation of stately and majestic oaks on the grounds.

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