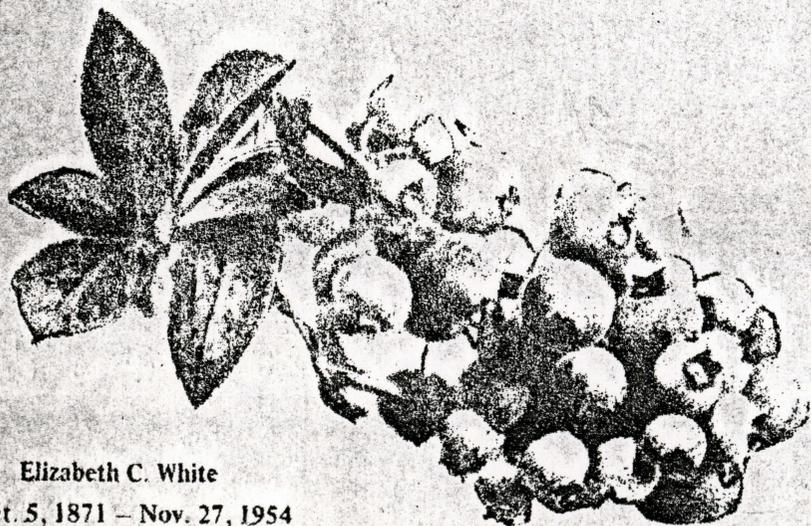


and trees surrounding Miss White's home. Her house is built on the edge of a cranberry bog that stretches in summer, like a prairie, to a low line of slender pines and scrub oak two miles away. In winter the bog is flooded and is a vast lake. It is Miss White's ambition someday to have a strain of wild holly developed for hedge, another type for field planting and, if her plans succeed, small holly bushes in pots, covered with red berries for the Christmas trade.

The superberries that Miss White and Doctor Coville created have their limitations. They cannot stand the severe cold of our Northern border states, nor will they grow much farther south than the eastern edge of Georgia. The plants have to have a winter rest period of at least 800 hours when the temperature does not go above forty-five degrees. Nor will the bushes grow in dry soil, though it has recently been demonstrated that they will do reasonably well without an underground water supply if the soil about their roots is heavily mulched with half-decayed leaves or matted hay. True huckleberries still come from the wild, and real huckleberry pie whether the ingredients are huckleberries or blueberries, is never made in a pie foundry, but from fruit that you or members of your family sweat to harvest from the sun-drenched open fields. Huckleberries and blueberries are much confused, and with reason: it's so difficult to tell them apart, especially in a pie. The seeds are the best test for non-botanists. Huckleberry seeds crackle when you bite; blueberries are silent.



Elizabeth C. White

Oct. 5, 1871 - Nov. 27, 1954

CONSERVATION AND ENVIRONMENTAL STUDIES CENTER  
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BLUEBERRY QUEEN MOUNT HOLLY, NEW JERSEY

by Philip S. Rose

(The Whitesbog Story)

JUL 22 1982

Abridged from the Saturday Evening Post  
September 12, 1942

There's nothing of the smiling high-school senior, the Sunday supplement glamour girl, about this country's blueberry queen. She is an energetic, gray-haired woman just turned seventy, and her name is Elizabeth C. White.

She has devoted the years since her late thirties to the creation and establishment of a crop that no one had ever grown before. For seventeen of those years she worked in an extraordinary partnership with one of the most unusual botanical geniuses the scientific world has known. She herself is now an authority on certain species of plants, is a capable executive and marketing expert, founded a national co-op, and won a peculiarly American brand of fame as the first person to offer fruit glorified — and better kept — under a wrap of sparkling Cellophane.

She started to use Cellophane before the word had been coined. An assistant of hers saw the stuff on a high-priced box of candy, talked the confectioner into revealing his source of supply, and until manufacture of a similar product began on this side of the Atlantic, Miss White got from Europe sheets of glass-clear plastic to cover the superblueberries packed at her farm.

"The 'window' idea created quite a stir in the markets," she recalls, "but nothing as compared to the excitement that prevailed when our first crop of specially bred and cultivated berries went to market in 1916."

Nothing like them had ever been seen. And there are plenty of housewives who still marvel over the miniature plums that roll from Cellophane-covered pint boxes labeled Tru-Blu. Some perhaps, may wonder where such extra-large, extra-blue and dewy

berries grow wild. The answer is they don't. Every Tru-Blueberry marketed by Miss White and her fellow growers in the Blueberry Co-operative Association is just as carefully cultivated as the oranges or apples that you buy. They grow in hanging clusters, like huge grapes, on waist-high, pruned and fertilized bushes set in rows across low-lying fields. Most of them trace their parentage to pedigreed plants bred and propagated at Whitesbog, New Jersey.

The blueberry "orchards" at Whitesbog, a 3000-acre world of bogs, canals, reservoirs, and pine land started by Miss White's grandfather, are the largest fields now established in New Jersey, North Carolina and Michigan. Miss White's peculiar farm grows cranberries as well as blueberries, and each of its 500 producing acres represents an initial expenditure of \$1200 or more, and thousands additional for upkeep.

Managing and building an enterprise of this magnitude--there are as many as 200 nimble-fingered pickers working the blueberry orchards from June to August--would seem a full-time chore, but not for Miss White. Beyond her uncanny business sense and drive she is filled with a native, intuitive knowledge of the plants that grow in New Jersey's strange, half-forgotten bog country. That is the secret of her long devotion to blueberry improvement. She has never left her plants for more than a few days, excepting one trip abroad.

The piney woods and bogs of Central New Jersey are only forty miles from Philadelphia and eighty from New York, but centuries removed. They were better known in Colonial times, when a peculiar compound found in the water-soaked, spongy bog land was the nation's source of iron. Mounds of rubble and an occasional chimney far back in the pines are today's only remnants of charcoal-burning iron furnaces and once-thriving little towns.

Elizabeth White's grandfather, James A. Fenwick, a New Jersey farmer, bought his first 108 acres of bog land in 1857. His dream was to ditch and clear the tangled lowlands and plant them with cranberries dug from the wild--a venture that was already proving highly profitable in New England. To that end he accumulated additional property, though he never found the means to improve it as he wished.

His son-in-law, Joseph J. White, built Whitesbog from the elder's dream. He added more land, engineered the canals and reservoirs that tap the tea-colored headwaters of Rancocas Creek, and through the years invested the returns from successful crop after another in land purchases to protect his water rights, in the building of huge warehouses, packing sheds and houses for his employees. (ed. note: Most of these buildings are still standing today.)

Miss Elizabeth, the oldest of four daughters, was his able assistant from girlhood, taking the place of sons he never had. She lived and dreamed cranberries, even in high school; and hurried to end her formal education so she would have more time with her father and in the bogs. And as he grew old, with his task of creating Whitesbog completed, she and her brother-in-law drifted into the acting management of what had become Joseph J. White Incorporated. A bog, unlike an ordinary farm cannot be divided among heirs. Incorporation was Joseph White's gamble for posterity on the ability of Miss Elizabeth.

College training might have upset her partnership with the man who tamed the hitherto wild blueberry. He was Dr. Frederick V. Coville, botanist for the Department of Agriculture, big, handsome domineering and impatient with those who worked for him--anything but the mild, absent-minded individual a scientist is supposed to be. When Miss White began the laborious dirt farming so necessary to translate Doctor Coville's plant breeding to practical use, he had selected her as much for her lack of scientific background and pretension as for the ambition and intelligence she displayed. Their formal partnership lasted until 1928. He died in 1937.

Actually, the choice of partners in their business deal-- as ever since Eve, though there was no romance at Whitesbog--was hers. Doctor Coville, dating from the day he became principal botanist for the Bureau of Plant Industry, had turned all the forces at his command to improving blueberries. The wild berries, growing everywhere in America except on deserts and prairies, and everywhere an important food crop for the Indians and the white men who followed them, had fired his imagination years before. Why had no one domesticated and improved this all-American ingredient of tongue-staining, toothsome pies?

His first attempts to transplant blueberries to Department of Agriculture greenhouses and experimental fields quickly taught him why. No matter how rich the soil, how ideal the moisture and temperature, the plants refused to survive. It took Doctor Coville two years to unearth the mystery, but his discovery that blueberries and many related plants would live only in an acid, sour soil was a landmark in horticulture. Soil scientists to that time had generally assumed that all plants needed sweet soil. He upset the theory and put an entirely new light on the culture of many ornamentals, like azaleas and rhododendrons, and other species from the wild.

Miss White was thrilled when she read a copy of Doctor Coville's report, which brought him fame in scientific circles around the world. It dealt with the very wild things that she knew best in the bogs around her home. Then she heard that he was struggling with his creation of superblueberries, but needed a collaborator and facilities that were not to be had in Washington.

"Why shouldn't I collaborate with him?" she asked her father. "It would be an adventure to help develop a new plant. I'll learn something about plant breeding. And who knows, if the experiments succeed, blueberries may prove insurance against a bad year on the bogs."

She took the initiative and wrote to invite him to Whitesbog. He was delighted, both with the interview and with the surroundings. Central New Jersey is natural blueberry country and the bogs for miles around the White property were full of wild bushes, a veritable treasure house for a plant breeder seeking unusual and superior sorts.

Miss White and Doctor Coville met in 1911, and shortly thereafter he sent her a few seedling plants from his early experiments. Two years earlier, in the fields near his summer cottage at Greenfield, New Hampshire, he had collected a pair of most important patent blueberries. One was a high-bush berry, botanically known as *Vaccinium corymbosum*, unusually light blue in color, half an inch in diameter and of exceptional flavor. Doctor Coville called it Brooks, after the farmer in whose pasture he discovered the plant. The other was a low-bush berry, also markedly superior,

known as Russell, again after the owner of the land where it was found.

These were the first plants that he had mated in his effort to create a superfruit. Both Doctor Coville and Miss White knew that a great many more selected wild bushes were needed. She, as a practical fruitgrower, wanted action, quick results, and soon evolved a scheme to obtain a big supply of breeding stock.

The woods around Whitesbog for several years were ranged by a strange army of volunteers, each armed with a thin metal plate in which a number of holes were drilled, and a bottle for formaldehyde. Miss White had called in her friends among the piney folk—the berry pickers and deer hunters who have dwelt in the bog wilderness since, it is said, their Tory ancestors fled there in Revolutionary times. She offered a dollar apiece for bushes with fruit of unusual size, as shown by berries preserved in the formaldehyde.

All together about 100 bushes were collected, and many named for their discoverers. Miss White's faded memorandum book contains a fine collection of old English names—Harding, Adams, Dunfee, and the like. A great many of the piney people, incidentally, work today in the cultivated berry fields. The pickers, however, are mostly women and children who come to work by bus from nearby towns. Women also pack, and paste on the Cellophane covers while boys slide the boxes into crates and nail them together.

The forewomen who oversee all this activity in the packing sheds, which sit right out in the open fields often are schoolteachers who find the busy season, from late June to mid-August a pleasant source of profit in vacation time.

Only one of the wild plants collected near Whitesbog proved outstanding, though many had fruits measuring close to three quarters of an inch in diameter but lacked color or taste, or had other weaknesses. If the berries tear when picked, for instance, they are considered inferior. The prize bush was discovered by a man named Rube Leek, whose last name hardly seemed appropriate for a delicious fruit. The collaborators compromised on Rubel. Rubel has been the parent of innumerable fine hybrids, and still ranks as one of the best named varieties in New Jersey and North Carolina.

With all the new material that Miss White collected, together with a few that Doctor Coville had picked up, there was no lack of breeding stock. "All together," he recorded, "68,000 hybrids were grown. A record was kept of every plant and of every cross." Yet he and Miss White, in the end, saved only fifteen plants as meeting the rigid requirements they had agreed upon.

The program that, at the start, had seemed so slow to Miss White actually was incredibly fast for a venture in the plant world. Cuttings and divisions from their hybrids and selected plants matured rapidly at Whitesbog. Within five years, in 1916 she sold the first crop from named sorts—Twenty-one bushels and eleven quarts. This season, and for several years past, her fields have produced from 7000 to 8000 bushels. The yield is approximately 100 bushels an acre from 1300 bushes planted in that area—or between two and three quarts to the plant.

During the early years of field culture many unexpected problems arose. Soil acidity was only one factor; water was equally important. The first planting turned out badly; the location was too wet. Even Jersey blueberries balk at too much bog. They prefer water under their feet—about eighteen inches below the surface—instead of around their toes. Other practices determined in Miss White's pioneer orchards were safe and effective fertilizer mixtures for the bushes, and the concoction of proper sprays and dusts to control insects and disease. The worst pest at Whitesbog is the fruit maggot, which is blitzed with rotenone dust blown downward from an airplane. The flies are so active that overhead dusting is the only way they can be reached. Liquid sprays from tanks hauled through the fields are used to fight a scab disease.

As Doctor Coville and Miss White developed their superberries they were careful to choose some varieties that would ripen early, some for midseason and others that were late. The picking thus is stretched from six weeks to two months, providing a long marketing season and avoiding harvest-labor peaks.

This year picking at Whitesbog began by the middle of June which is unusually early. The cultivated berries are all of the cluster type, and high bushes, although a few of them contain one-

quarter low-bush blood from the Russell variety. Three to four pickings are necessary, since not all the fruit in a cluster ripens at once. Base pay this year was five and a half cents a quart, with bonuses and extras. A picker with nimble fingers earns from five to six dollars a day, rushing tray after tray of sun-warmed blue fruit to the forewoman for another punch on her tally card. The forewoman, after checking to see that no green or damaged berries are brought from the field, then must watch the packers to be sure that the right label is used on every box. To meet co-op standards, the fruit must be an even blue color, free from tears or blemishes and uniformly ripe.

The co-op was put together at Miss White's call in 1927. New growers were turning to her with their marketing problems as the orchards increased and the crop boomed. Every member of the co-op, no matter what size his or her operation, has only one vote in its affairs. Last year, more than \$600,000 worth of Tru-Blu berries were marketed—\$400,000 originating in New Jersey, and about \$100,000 each in North Carolina and Michigan. Nearly 90 per-cent of all cultivated blueberries are sold through the co-op.

Prior to the formation of the co-op, growers who had seen the new blueberries and heard of their success in the markets flocked to Miss White to obtain bushels for themselves. She had all of the named varieties and the skill to propagate young plants, and had no alternative but to launch Whitesbog in the nursery business. Since that time it has been headquarters for most of the nursery stock for the entire country.

Her interest in native plants goes beyond the commercial berry crops. Doctor Coville introduced her to an almost forgotten native shrub, *Franklinia*. The plant, which bears many solitary golden-centered white flowers in late summer, was discovered in the Georgia swamps by Franklin's botanical friend, John Bartram, and his son, and has never been found growing wild since. Miss White obtained some of the few remaining plants in cultivation and has multiplied and sold *Franklinia* far and wide.

Hollies, too, are native to New Jersey's pine woods. There are some unusual sorts planted in the garden of flowers, shrubs