

BLUEBERRIES AN INCH ACROSS

They Grow Fat and Sleek When Domesticated—By Carl R. Woodward

WHEN tickling our palates with huckleberry pie, how many of us ever stop to inquire about the source of the berries that went into the purple juicy filling?

Huckleberries? Why, of course. They grow wild on bushes in the swamps and woods.

Grow wild, did you say? Why wild? Other of our common small fruits—strawberries, blackberries, and the rest—grow wild, too, but the wild forms are of little commercial value, and only a small proportion of them find their way into the markets. And huckleberries are among the most important of American berries. Isn't it strange that this alone of the important berries should maintain its place on the market and in the American diet as a primitive savage, while the others have been captured, tamed, cultivated, bred and otherwise domesticated into forms and flavors that have left their ancient ancestry out of the running?

"Strange," you say, "but I had never thought of it before. Why hasn't someone tamed the wild huckleberry?"

Ten or more years ago you would have received little satisfaction in answer to your question. Today,



Harvest Time in a Sixteen-Acre Field of Blueberries



berries grown in the United States. Cranberries still are the

New Jersey, on the farm of Joseph J. White, famous for his cranberries. Whitesbog is the largest cranberry farm in the world, producing annually one-thirteenth of all the cran-

furnish seedling plants of selected parentage. Our purpose was to convert the wild blueberry into a cultivated berry of superior quality. That was in 1914. Today we have about twenty-five acres of cultivated berries, sixteen of which are in bearing. This is merely a beginning, but it has been sufficient to demonstrate the splendid commercial possibilities of the crop.

"We secured the cooperation of two men of this community in locating fine wild bushes, and set the standard of size at half an inch in diameter. We were surprised at the number of bushes reported, and the following year raised the limit to five-eighths of an inch, making a general offer to pickers of wild berries. We got a hundred bushes that met these requirements,

which we call Dunfee was found by ten-year-old Theodore Dunfee. How tickled he was to have found a bush up to the standard! Sam was found by Samuel Lemon—you see, we had to use his first name—and the Rubel by a chap whose name was Rube Leek. Doctor Coville said the last name savored too much of onions, so a combination had to be invented.

"At the next blossoming season Doctor Coville crossed a number of the different parent bushes by controlling the pollination, keeping a record of each cross. The fruit from these crosses was carefully preserved, and the seeds planted in the greenhouse. The resulting seedlings the next season were planted in the field, and after about three years began to bear.

"A heterogeneous lot we got from those seedlings. This field of sixteen acres contains over 20,000 bushes, which were the original seedlings, and no two of these bushes are alike. We were delighted to find the average fruit was very good, and that here and there was a

bush that bore exceptional berries, superior in size and flavor to the parents. These choice plants are set apart for future work. Cuttings are made and propagated in the greenhouse. Also the better original strains have been propagated."

Long-Lived Plants

"YOU will notice that there is a great variation in the time of ripening, flavor and other characteristics. We are studying variety traits carefully with the idea of selecting the most promising varieties for a well-balanced system of blueberry culture. For example, the ripening season is from June twentieth to August first. We believe that by further breeding we can advance these ripening dates and also can

assure you that the huckleberry is being tamed; that the old wild strains have been selected, bred and improved; that the propagation of these improved varieties is proceeding rapidly; that cultivated huckleberries are now being sold on the market at just double the price of the common wild berries; that there is no reason why in another generation cultivated blueberries shall not take their place in the front rank with other cultivated American berries; that already we can show you blueberries that measure seven-eighths of an inch across; and that berries an inch or more in diameter are not only a possibility but almost a reality.

Taming the Blueberry

MANY of the berries we call huckleberries are blueberries. The true huckleberry grows on a small bush, only twelve to eighteen inches in height, on the uplands and hillsides. It contains large seeds which crackle when the berry is chewed, and it is somewhat acid. What is colloquially known as the high-bush or swamp huckleberry, which is the big source of the commercial huckleberry supply, to be botanically correct is the blueberry. It contains smaller seeds, is less acid and goes by a different family name from the true huckleberry. Blueberries and swamp huckleberries, then, are the same thing.

This metamorphosis of the humble huckleberry was the result of the teamwork of the scientist and the practical farmer. It occurred over in Burlington County,



A Cluster of Blueberries, Showing Wide Range of Maturity—Some Berries Ready to Pick, and Some Just Forming

farm's big crop, but it is developing its blueberry plantation as fast as circumstances will permit.

Early in July we visited Whitesbog, right at the height of the blueberry harvest. Mr. White, after over fifty

years of cranberry growing, has turned over the active management of his farm to his son-in-law, Mr. Chambers, and his daughter, Miss Elizabeth White. The story of the development of the blueberry was told by Miss White as we tramped down the long rows of bushes. I plied her with questions between mouthfuls as we sampled the different varieties.

"Cranberries always have been our principal crop," she said, "but located as we are here in the pine belt the so-called huckleberries have grown wild in abundance about us. My father and I often talked over the possibility of cultivating huckleberries. We thought they would fit in well with our cranberry business, because they mature over a period preceding the cranberry harvest, and if we could grow them we could keep our pickers busy over a longer season. But we had no idea of how to go about it.

"One day I read about some experiments Dr. F. V. Coville, of the United States Department of Agriculture, was conducting in blueberry culture, and wrote to him. He visited Whitesbog, and we at once began informal cooperative work. Later when Doctor Coville had a quantity of plants ready for the field a formal contract with the department was executed, we to furnish the ground and labor for the experiment and Doctor Coville to direct the work and

marked them, and at the right time dug them. By the time they reached Whitesbog they cost us approximately twenty dollars each.

"The selected wild bushes were divided into many pieces from which young plants were grown. Those from each original bush were kept separate, and the plants of each lot have their own particular characteristics, perpetuating the peculiarities of the bush from which they came; in other words, the plants from each original bush constitute a separate variety."

Choosing the Bushes

THE chief characteristics considered in selecting varieties are size, flavor, texture and time of ripening of the berry and productiveness and vigor of the plants. A very important quality is resistance to injury by occasional spring frosts, for one variety is uninjured by frost when another growing beside it has its blossoms and young growth killed.

"The first selection of wild bushes was necessarily based on size of berry, but a careful study of all characteristics was made during several years when numerous young plants grown from the original bushes produced crops under field culture. As a result most of the varieties were discarded.

"Six only, of the hundred bushes, were considered worthy of further multiplication for commercial fruit production. These are known as Rubel, Harding, Sam, Dunfee, Adams and Grover. They are as distinct one from another as are varieties of strawberries, apples or any other fruit.

"We named the varieties resulting from the wild bushes after the persons who found them. For example, the berry

marked by further breeding we can advance the earliest ripening date materially and can also extend the latest ripening date, so that by having the proper combination of varieties we can stretch the blueberry harvest from June tenth to September first."

Miss White also told us something of the cultural methods. They are using a typical soil of the region, especially suited for cranberries, known as Savannah bottom. It is a sandy soil, well supplied with humus, porous and well drained. Blueberries require an acid, peaty soil and a water supply so balanced during the growing season that the roots never dry, yet always have air. The plants are propagated from cuttings in the greenhouse, and are transplanted to pots and set outside in cold frames or under slat shades, with the pots embedded in the ground. After about a year they are ready for transplanting to the field, and will begin to bear the third season after setting, increasing in production for several years thereafter.

A blueberry plantation will probably be as long-lived as an apple orchard. Wild bushes have been known to produce abundantly for fifty years. Five hundred pounds of a 4-14-5 fertilizer to the acre, with the phosphorus derived from rock phosphate, is used, materially increasing the yields. The plants are cultivated often, and some hand hoeing is done to control weeds. A good-sized corps of Italians, mostly women and children, were doing the picking when we were there. They were paid at the rate of six cents a quart. Along the edge of the field were packing sheds where they delivered their berries. There the packers finished off the boxes, covered them with a heavy manila paper labeled "Whitesbog Blueberries," and packed them in crates.

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"Our commission man has been getting forty cents a quart for our berries when the wild berries have been selling for only twenty cents," remarked Miss White. "In spite of the fact that we are not yet ready to put a berry of uniform grade upon the market, since we are picking only from the seedlings which vary greatly in size, our berries already have a reputation and we could sell a great many more. Some of our choicest have retailed as high as seventy-five cents a quart. In 1920 our shipments netted twelve dollars a crate—thirty-two quarts—and last year they netted about \$12.50 a crate.

"One good thing about the cultivated blueberries is that we already have for them

an established market. It isn't like trying to introduce a brand-new fruit that no one has heard of before. The public doesn't need to be educated up to buying blueberries.

"As it was through the United States Department of Agriculture that we were able to produce cultivated blueberries," concluded Miss White, "we feel under obligation to share with the public the benefits of the discovery."

While she was talking we did a little mental calculating. There are over 1300 plants to the acre. A normal yield of a good four-year-old bush is about two and a half quarts. At this rate we can expect an acre to produce in excess of 3000 quarts,

which at forty cents a quart would mean—well, figure it out for yourself.

Can any farmer grow these blueberries? That depends. The soil requirements are similar to those for mountain laurel and rhododendrons. Where a soil that is naturally suitable is not available, it can be easily prepared by supplying the plants with liberal quantities of dead leaves, half-rotted sawdust or similar waste matter.

We know that the wild blueberry grows abundantly over large areas, so isn't it reasonable to expect the cultivated berry will grow where the wild ones do? If this holds true, then we conclude that cultivated blueberries can be raised over a wide range of area in the United States.