

The 25th Anniversary of the Beginning of Blueberry Culture
at Whitesbog, New Jersey

By Elizabeth C. White.

(First installment in CRANBERRIES, May 1936)

It was November 15, 1910, that the Bureau of Plant Industry of the United States Department of Agriculture issued Bulletin No. 193. Its heading announces B. T. Galloway as Chief of the Bureau. The letter of transmittal to the Honorable James Wilson, then Secretary of Agriculture, was written by William A. Taylor, Acting Chief of the Bureau.

This bulletin carried the title "Experiments in Blueberry Culture", and was written by Frederick V. Coville, Botanist in charge of Taxonomic and Range Investigations.

It came to my attention through the list of Government publications which at that date was monthly sent to any citizen who requested it.

Very soon after it was issued a copy of "Experiments in Blueberry Culture" was in my hands. It thrilled me with its explanation of the cause of the brown color of our bog water, and it clicked with the idea father and I had often discussed of cultivating our wild swamp huckleberries as an auxiliary crop for cranberries. The bulletin gave a new slant to our discussions.

I was in a position to give much time to the developing of a new crop for Frank Chambers had recently joined us at Whitesbog and could easily carry some of the work to which I had been giving much time and strength. Association with the author of this bulletin would be of inestimable help in developing blueberry culture and the unknown experimenter in Washington certainly needed land such as we had in abundance at Whitesbog, and cooperation such as father and I could give if his Chief's prophecy were to come true. This prophecy was expressed in the letter of transmittal in which William A. Taylor wrote of Dr. Coville's experiments, "There is good prospect that the application of the knowledge thus gained will establish the blueberry in field culture and that ultimately improved varieties of these plants will be grown successfully on a commercial scale."

The carbon copy of that first letter written twenty-five years ago and the succeeding correspondence have been carefully preserved in a fire-proof safe. When the first letter was written I was sure that it was of such importance in establishing a new branch of horticulture that the passage of time would give it historical value. This is the letter.

New Lisbon, N. J.

January 11, 1911.

"B. T. Galloway, Chief,
Bureau of Plant Industry,
U. S. Dept. of Agriculture,
Washington, D. C.

Dear Sir:

I recently received from Washington the report on "Experiments in Blueberry Culture", which I have read with great interest, and I write to make a suggestion in regard to future experiments.

My father, Joseph J. White, is one of the largest cranberry growers in the country, and on his property are considerable areas of land too high for cranberries but admirably suited to blueberries, judging by the way the wild ones flourish.

My father authorizes me to offer you the use of this land for further experiments in blueberry culture, and is willing to pay \$50.00 a year for 5 years for such labor as may be needed in the experiments, we to have the

proceeds from any crop that might be produced.

I should be pleased to assist in the work by observation, reports, or in any way in my power.

If you should at all consider this proposition, Dr. Shear can perhaps give you some idea of our ability to assist the Dept. of Agriculture in this matter, as I had the pleasure of showing him and two of his assistants over a portion of our bogs last fall.

Trusting that this may receive favorable consideration, I am,

Very respectfully yours,
(signed) Elizabeth C. White"

January 28th, ten days later, William A. Taylor, Acting Chief of the Bureau, wrote that the Department would probably accept our offer of cooperation which had been turned over to the author of Bulletin 193. On February 4th, Frederick V. Coville wrote saying that he would like to visit Whitesbog to look into the possibilities. The visit was made on March 1st, 1911.

I am exceedingly sorry that Dr. Coville cannot be with us today. These first letters and his visit to New Lisbon and Whitesbog on March 1st, twenty-five years ago, marked the beginning of a period of ~~uninterrupted~~ cooperative experimentation of intense interest and remarkable results. This cooperation closed when the new responsibilities falling on me after father's death and the growing claims of blueberries as a commercial crop made it impossible for me to give the close personal attention to cooperative experiments, which characterized the earlier years of the work.

Those first blueberry years are a joyous memory. Encouraging developments came thick and fast. Dr. Coville and I gloated over them together, the enthusiasm of each fanning to brighter flame that of the other.

Without his presence today there can be no fitting celebration of this Twenty-fifth Anniversary of the beginning of team work with blueberries.

The first five years of cooperation covered the period of search for superior wild bushes in New Jersey. At the time Dr. Coville and I joined forces, his stock of plants was represented chiefly by seedlings raised from berries resulting from natural pollination on a selected New Hampshire bush. In Bulletin 193 he says that this bush was "selected at Greenfield, New Hampshire, after three summers of cursory observation in the mountains of southern New Hampshire and three weeks of diligent search in the summer of 1908". Then after a detailed description of the bush and its foliage he states, "The berries were of large size, reaching a diameter of over half an inch. The color was an unusually pale blue. In flavor the berry was exceptionally good."

Twenty-five years ago neither Dr. Coville nor I thought possible such larger blueberries than were represented by the fruit of this Brooks bush, but that very summer of 1911 the Sooy bush was found by Ezekel Sooy just north of the road passing his home between Browns Mills and Whitesbog. Its berries were as blue as those of Brooks and were larger. Many of them were $\frac{5}{8}$ of an inch in diameter as compared with $\frac{1}{2}$ inch in diameter for the largest of the Brooks berries.

These two bushes were the parents of one of the first extensive crosses made by Dr. Coville. It was fortunate that these early parents possessed the hidden quality, which I have come to believe is rare in even the most carefully selected wild blueberry bushes, of producing a small percentage of offspring of a size and quality decidedly superior to either parent.

(Second installment in CRANBERRIES, June 1936)

Of the seedlings, which were tried out at Whitesbog under the contract made between Joseph J. White, Inc., and the U. S. Dept. of Agriculture early in 1914 several of the 5,000 plants of this early cross produced berries $\frac{3}{4}$ of an inch in diameter; a good step up in size from their $\frac{1}{2}$ and $\frac{5}{8}$ inch

parents. Two of these Dr. Coville named Pioneer and Katherine, with which varieties you are more or less familiar.

From their Sooy parent they both inherited a weakness of constitution not guessed at the time the cross was made which makes Pioneer's crop uncertain, as most of us have unhappily experienced. Yet when it does succeed in getting by winter hazards and dodging cold storms and frosts at blooming time it is a wonder. I still feel for it much of the admiration inspired by that first little seedling bush, plant No. 42 in row D of the old Washington Field, loaded with berries of a size and beauty beyond my dreams. Before it was named we knew it as 620-A; that is, the A bush of the 620th experimental culture of blueberry seeds or cuttings made by Dr. Coville.

Pioneer's sister bush, Katherine, was named by Dr. Coville in honor of his daughter. Their berries are as large and more beautiful in appearance than those of Pioneer and in my opinion of better flavor. Many of you know, however, how badly it tares and so is absolutely worthless for commercial fruit production. It is only within a very few years that I have realized how very poor both of those early parent bushes, Brooks and Sooy, are in picking qualities. With Brooks the fibers of the little stem run up into the very heart of the berries, just as with its daughter Katherine. The stems of the Sooy berries seem to be attached by a broad flat disc which leaves a shallow, but broad scar when the berry is picked.

I could talk for hours about the characteristics of the early parents and how they have worked out in the breeding, but if you care to hear it that must wait for another time.

The contract between the U.S. Dept. of Agriculture and Joseph J. White, Inc., which was executed early in 1914 and under which more than 25,000 blueberry seedlings were tried in the field at Whitesbog, provided that we were to furnish the Department as much land, not to exceed three acres a year, as might be needed to test the hybrid seedlings produced by Dr. Coville.

On the acreage occupied by each planting the Department agreed to pay us a rental of \$50.00 a year for four years. We were also to have the proceeds of any crop produced during this period with the exception of such ~~fruit~~ samples of fruit as the Department might need for its own use. With this compensation we were to meet all expenses of preparation and maintenance of the trial fields.

Each of the contracting parties had the right to half of the propagating material from any bush during its four years test and at the end of that period it became the property of Joseph J. White, Inc., to do with as we pleased except that we pledged ourselves not to distribute, by sale or gift, propagating material from any bush without the express permission of the U.S. Department of Agriculture.

I have mentioned finding in New Jersey only the Sooy bush during the summer of 1911. In locating these bushes my policy was to interest the people who picked the wild berries for market. I told them of my confidence in the future of blueberry culture and that if they would help me with their special knowledge their names might become important in the history of the industry. Nearly all of the wild bushes accepted were named in honor of the finder. A package was rigged up for them containing gauge, labels, bottle, formal solution and directions with the purpose of making it as easy as possible to mark a fine bush and deliver ~~me~~ to me a sample of the berries preserved in formalin. Only with such preservation could I judge the size and color, for those were still horse and buggy days and usually the finders could not get fresh berries to me in condition to be judged in any respect, and the bush was apt to be stripped before I could make arrangements to visit it. Most important of all I paid them two or three times their customary wage for any time they spent in guiding me to the bush while it was in fruit or when it was to be dug. During the summer of 1912 we found, among the others, the Chatsworth bush, the Harding, and the Rubel.

The Chatsworth berries brought me were full $\frac{3}{4}$ s of an inch in diameter. This was before the Pioneer seedling had developed and the Chatsworth berries were the first of such size that I had ever heard or dreamed of. The bush

seemed a treasure beyond price. It was found by George Bowker. He died not so long after he found it, so I feel free to say that I knew him as one of the meanest men in the Pines. I wouldn't dishonor any bush that produced such mammoth berries by giving it his name and called it "Chatsworth", after the village near which it was found. In the long run, however, the bush proved to be as mean as its discoverer. I have never seen any blueberry bush except some of its own seedlings so susceptible to mummyberry blight as was Chatsworth. The berries were dark, very soft, and oh so sour! The only relic of Chatsworth in the blueberry industry today is the Cabot variety, ~~which~~ a cross between Chatsworth and Brooks. Cabot is a marvelous improvement over its Chatsworth parent, but I still find resemblances.

The Harding bush was found near Cranberry Hall in a little meadow on a farm now a part of the Camp Dix Rifle Range, but then belonging to Ralph Harding. The soil in which it was growing was black and about the consistency and texture of axle grease. This is interesting in view of the fact that most of us have found Harding unreliable in perfecting its crop. Only those who have soils of close texture similar to that of Mr. Spear at Vineland can depend on a Harding crop.

The original Rubel bush was found by Reuben Leek near Chatsworth in Governor's Hole about 100 feet from the top of J. Reed's bog. Only last week I saw in the local paper the death notice of Reuben Leek of Chatsworth and I am glad of this opportunity to give him honorable mention for the lift his discovery gave our industry.

The berries he brought me were but little more than 5/8ths of an inch in diameter and compared to the 3/4 inch berries of Chatsworth seemed insignificant. My original notes do, however, mention their fine appearance. I did not visit this bush before it was dug, and, while I was housed with an attack of grippe, Frank Chambers very kindly supervised its digging on March 15, 1913, and brought it to New Lisbon intact.

It had twenty-five stems five to six feet high. It was divided into fourteen roots which were planted in Row 31 in the Old Field. The top was made into 627 cuttings (we used all of the old wood in those early days) from which in the fall of 1914 we had eighty plants. The fourteen roots into which the original bush was divided in March of 1913 grew into bushes which by December were from 12 to 13 inches high and well set with fruit buds. It was only as I watched those fruit buds develop into berries during the summer of 1914 that I began to realize the value of the Rubel variety. I called it "Rube Leek" at first and Dr. Coville called it "Rube", which seemed to me a poor name for so fine a variety. The happy thought later came to Dr. Coville of using the initial of Leek after Rube which gives us the familiar "Rubel".

Among the fourteen divisions into which the original Rubel bush had been carefully dissected two bore small black berries. These were thrown away. A couple of years later I was impatient because the ~~mit~~ multiplication of the better ~~is~~ varieties was so slow. Then I recalled that when the original Rubel bush had been delivered the roots had been cut not more than six inches from the base of the stems. The large roots that had been left in the ground? Could it be possible that they had sprouted?

(Third installment in CRANBERRIES, July 1936)

The Rubel plants obtained from the second digging, like the fourteen divisions of the first, included a small percentage of bushes producing small, black berries. In several other instances I found such inferior plants mixed with the divisions of a fine selected bush. It appears that when two seedlings sprout and grow up together they sometimes fuse as by a natural graft so that it is impossible to separate one from the other except as the branches produce different types of fruit or leaves.

But this is too much time to spend on a few of the bushes found in 1912. The crop of wild huckleberries amounted to nothing in 1913. A heavy frost destroyed it, and no bushes of importance were located.

In 1914 a large wild crop matured. My search work was well organized and a lot of bushes were located, among them Adams, Dunfee and Grover. The last wild bush to be secured in that early search was Sam, found by Sam Lemon in 1916. The berries brought in were $5/4$ of an inch in diameter. It was the only wild bush other than Chatsworth from which I have seen berries of such size. When I visited it the bush had been stripped, but the ground under it was thickly sprinkled with huge, but shriveled, light blue berries; and I wrote Dr. Coville that it was surely the best bush yet located. Time has proved my error. I had not in those first five years learned to judge blueberry varieties; perhaps I have not yet learned.

Altogether 100 carefully selected New Jersey bushes were moved to the trial fields at Whitesbog and of them all Rubel is the only one any of us would plant today. In stability and in all-around reliability we have nothing to surpass it. It is one parent of the varieties June, Jersey, Rancocas, Concord and Stanley. Each of these possesses one or more desirable qualities, such as earliness, size or flavor in a degree surpassing its Rubel parent, but not one of them equals Rubel in its degree of reliability and ability to withstand adversity which reduces the gamble of fruit production.

Just a glimpse has been given you of the fascinating pioneering work which exclusively occupied the first five years and still continues, though it is now overshadowed by commercial developments. During the first five-year period a few quarts of berries were gathered which served as indicators and were consumed at home.

In 1916 began what might be called commercial shipments and from there on the chart shows the annual Whitesbog total production and gross receipts after commissions were deducted in New York, until the organization of our Association in 1927. Practically all of the fruit marketed before 1925 came from the miscellaneous wild bushes and seedling under tests. In 1925 about 270 bushels of the named varieties were included in the crop of 1,121 bushels.

From 1927 the chart shows the annual shipments of the Association and the gross receipts. This is not a complete report. A number of crates of blueberries were shipped from elsewhere than Whitesbog prior to '27, and several hundreds perhaps thousands of bushels have undoubtedly been sold by independents since. The figure of the last three years include the North Carolina crops.

Imperfect as it may be this chart does show the trend of the commercial development and \$1,016,000 is a fairly substantial amount for an infant industry to have brought into a neighborhood in twenty years, especially as most of it came during deep depression years.

(Fourth installment in CRANBERRIES, August 1936)

You may be interested in the development of our cellophane cover. The quarts of the first crates of blueberries shipped in 1916 were covered with brown paper squares which I cut from large sheets and fastened over the boxes with gummed paper tape much as our covers are fastened now. In 1917 we had the manilla covers cut for us and printed with a special design advertising Whitesbog blueberries.

A few years later Sidney Hutton saw a candy box wrapped in cellophane. He wrote a letter of inquiry to the candy manufacturer who, as a great favor, furnished us, as non-competitors, information as to where this remarkable, imported, transparent wrapping could be secured. So blueberries were among the pioneers of the products to be marketed under cellophane. The rest of the story is Association history.

Now as to our future.

On April 30, 1920, there was printed in The Rural New Yorker an article on "Cultivated Blueberries" which I wrote at the earnest request of Mr. Collingswood, its editor. These are the first paragraphs:

"How big will blueberries grow? I used to call them swamp huckleberries and thought an occasional one-half an inch in diameter, huge. They always grew luxuriantly about the margins of our cranberry bogs, and as a girl I used to hunt the largest and best flavored berries and dream of a field full of

bushes as good.

I knew it was a wild dream - "they" said huckleberries couldn't be started from cuttings, and it was hopeless to find enough of the very best bushes to plant even a small field.

(Fifth installment in CRANBERRIES, Sept. 1936)

Then came the publication of "Experiments in Blueberry Culture" in 1910. The author, Mr. Frederick V. Coville, of the U. S. Dept. of Agriculture, had discovered lots of interesting things about blueberries and had succeeded in rooting a few cuttings. Perhaps my dream of a cultivated blueberries wasn't so wild after all. Possibly it seemed hopeless only because all the bits of knowledge that could make it real were scattered and jumbled like the pieces of a great big picture puzzle.

Since 1911 I have been hunting those bits of knowledge and fitting them together. Mr. Coville furnished very important pieces to start with and is always finding more. Experience of three generations in cultivating the cranberry, a near cousin of the blueberry, made a good background. My father's financial support and business experience is an indispensable part, perhaps it is the frame that holds the picture together. The folks that picked wild huckleberries for market and knew where extra fine bushes grew gave valuable bits; some little pieces I discovered myself; others have been contributed by many different people.

Enough of the puzzle has been fitted together to show that my old dream was but a faint shadowing of the possibilities. Now I dream of cultivated blueberries, shipped by the train load, - blueberry specials - to every part of the country. The little berries to today's dreams are half an inch in diameter. And the big ones?-- Well, it is hard to measure a dream accurately, but they are at least an inch across. And these big blueberries will be raised on land that is now waste because too acid for present commercial crops, though just what the blueberries need. And raising all these blueberries will give healthful remunerative employment to lots of people. And - but you can dream for yourself. Only if you are to share my confidence that this dream is not wild; that some day it will come true; you must know what has already been accomplished.

There follows an account of the blueberry development which the passage of sixteen years has made passe. The figures on our chart, however, make the dream of blueberry specials seem less visionary and we must be careful, very careful, to so manage that the increase of production does not so reduce price as to drown our profits.

As safeguards we have our Association intact and seasoned by having passed through some unpleasant squabbles, any hurt of which I am sure will soon be outgrown.

Among our members new thinking and working ability are all the time coming to view. Just since our last meeting see the keen work John Cutts has done on the supply committee, and there is the letter our President has read from Mr. Folweiler. That appeals to me tremendously as it expresses my ideals for marketing our product so very much better than I could have done.

Our connection with Mr. Hefley and the C. H. Robinson Company with its far-flung net work of organized selling should be of immense value in expanding our market to care for increasing production. In so many cities its local managers can say to the buyers of Tru-Blu-Berries as Mr. Hefley did in New York last summer, "If you find a crate not up to grade just phone our office and we will send our man to remove the labels." What a safeguard that is.

No safeguard outside of ourselves, however, can care for the quality of our pack. We must ourselves so care for our bushes and our pack that the Tru-Blu-Berry label will reliably indicate a quality well above the most carefully packed wild fruit, or the best selling effort in the world cannot assure us a continuance of good prices. Anyone of us, who, because the immediate dollar looks so large, or because he fails to adequately train his employees and inspire in them high ideals; neglects pruning and care of his plants; ships

containers with better berries on the top than the purchaser will find in the bottom; sends to a market where he thinks they may squeeze through berries he is afraid for Federal inspectors to see; any one of us who permits such things to happen is hacking at the limb of quality which supports us all.

Some of these things have happened at Whitesbog, but we do try to correct our mistakes and I ^{am} sure every member here will do the same.

Whatever other inspection services we may establish I think a good field inspector would be most helpful. Everyone is too busy at shipping time to do much visiting and a competent person could distribute among us knowledge of the better methods that one and another discovers from time to time.

The original parents of the seedlings tried under this contract were two New Hampshire bushes, including the Brooks already mentioned, with which Dr. Coville was working before he published Bulletin No. 139; the New Jersey plants located under the stimulus of my search campaign, portions of any of which were gladly contributed to the Department; and three or four others from New Hampshire and North Carolina, none of which proved to have that hidden quality previously mentioned, of producing offspring of size and quality superior to itself.

The berries from this miscellaneous lot of seedlings were in great demand during the early years and brought a high premium over wild blueberries. This enabled the early experimental work to meet its own costs to a surprising degree.

The superiority of this fruit over wild berries was partly due to the selected parentage of the bushes and partly to the care exercised in picking and packing. Now that the great majority of cultivated blueberries are of the superior, selected strains and that many wild berries are packed in imitation of our "Tru-BlueBerries" the old fields of miscellaneous hybrids, where no two bushes produce berries of exactly the same color, size, shape or flavor, have become a liability instead of an asset. Such is progress.

Rube Leek, good woodsman that he was, led me to the little hole a foot across from which he had dug the bush four years before. It was drifted full of leaves and, sure enough, bordered with sprouts. The Rubel bush was dug again, this time with a hole more than three feet across, and from the second digging I secured 40 plants; some tiny things, but many of them strong and a foot or more high. With these and the plants from my first cuttings I planted six rows of about 20 plants each with 4 rows of Harding. This was accomplished in the fall of 1917 and was the first planting ever made of alternating rows of named varieties of blueberries.