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Joseph J. White, Inc.
New Lisbon, N. D.

A Talk About Cultivated Blueberries

MAKING DREAMS COME TRUE.—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. Then came the publication of "Experiments in Blueberry Culture" in 1910. The author, Mr. Frederick V. Coville, of the U. S. Department of Agriculture, had discovered lots of interesting things about blueberries, and had succeeded in rooting a few cuttings. Perhaps my dream of 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.

COLLECTIVE KNOWLEDGE.—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 who 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 trainload—blueberry specials—to every part of the country. The *little* berries of today's dreams are half an inch in diameter. And the big ones? Well, it is hard to measure a dream accurately, but they

stigma of the blueberry flower. In the wild, or in the field, pollen is carried from bush to bush by bees and other insects. In the greenhouse at Washington, from which insects are excluded, Mr. Coville plays the part of a highly intelligent bee by carrying pollen from flowers of one selected plant and applying it to the stigmas of flowers on other selected plants. The plant from which the pollen came is the father plant and the plant which bears the berry is the mother plant. From seeds so produced are grown the plants tested in the Government Blueberry Trial Grounds. These plants inherit different combinations of the characteristics of their parents just as human children do. Some are not so good, many are very like the parent plants, and a few are much better. In 1911 a plant, which we call the Sooy, was found in New Jersey, the largest berries on which were five-eighths of an inch in diameter. This Mr. Coville crossed with a plant, which he calls the Brooks, from New Hampshire. The Brooks berries grow very little more than one-half inch in diameter. Over 3,000 seedlings of this cross have for several years borne fruit in the Trial Grounds. Two of them,

when the plants were as large as they could be grown in two-inch pots.

These plants have not nearly reached their full size or productive capacity, and the possibilities of increasing the yield per acre in quantity and quality are indicated by the record of 620A, which was one of this lot of seedlings. The plant was no larger than the others, but in 1917 it produced 2½ quarts as against an average per plant of about three-fourths of a quart. In 1918 its crop was 1¼ quarts, compared to an average of a little more than one pint. As the size and quality of the berries were much above the average they should command a higher price.

FURTHER PLANTINGS.—Like every practical farmer, we discount heavily the possible proceeds which can be figured from this data. Even so, it looks good to us, and we now have enough plants started from cuttings of 620A to set more than an acre. These will be ready for the field next September. Other acres will then be set with Rubel, Sam and Harding. The rapidity with which the "blueberry specials" dream can be realized will depend largely upon the success of next September's planting, which will be the first area of any amount to be set with selected and named varieties of blueberries.

EXTENDED TESTS NEEDED.—The varieties selected and developed here in New Jersey must be tried in many parts of the country before we can know their limits of adaptability to climate. In order to develop varieties suited to different climatic conditions fine parent plants are needed from other sections of the country, especially from New England, from the Carolinas and from States bordering on the Great Lakes. We will pay \$50 each and shipping charges for plants with three or four berries three-fourths of an inch in diameter, or as large as a cent. Wild plants with large berries which do not come up to this requirement should be tried under cultivation near their point of origin.

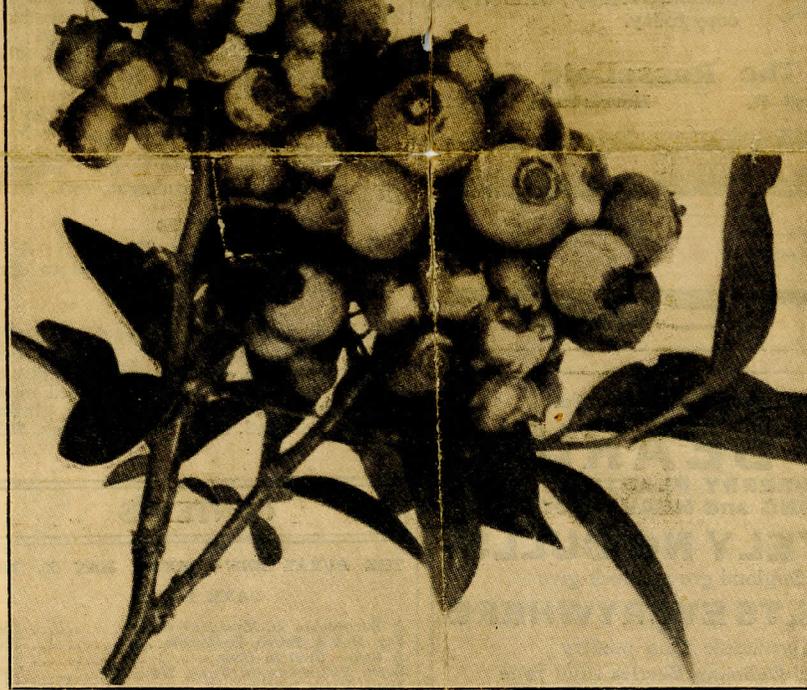
SOIL REQUIREMENTS.—The essen-



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 trainload—blueberry specials—to every part of the country. The *little* berries of 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 commercial crops, though just what the blueberries need. 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.

WHAT HAS BEEN DONE.—We have 20 acres of blueberries under cultivation. Some of these acres are set entirely with plants propagated from wild bushes selected for unusually fine fruit. Others, comprising the Government Blueberry Trial Grounds, are set with seedlings from the U. S. Department of Agriculture. All improvement of blueberries must start with the selection of wild plants. When these are propagated or increased from parts of the plant itself, that is, by cuttings, by taking rooted suckers from the side of the plant or by other methods of division, all the resulting plants are practically the same. We have learned to root blueberry cuttings, and have several thousand little plants so started from a few of the best wild bushes. This alone means greatly improved blueberries, for with the very remarkable variation in size and flavor of the wild fruit few pickers ever find berries equal to those of Rubel, Sam or Harding, as we have named three of our best wild stocks. Many of these berries are five-eighths of an inch across and an occasional one nearly or quite three-fourths of an inch in diameter.

IMPROVEMENT BY BREEDING.—With such selected bushes to start with, further improvements can be made by breeding. Mr. Coville has shown that blueberries are sterile to their own pollen. This means that before the wee berry will "set" or the seeds ripen, pollen from a flower on another blueberry plant, one which has not been propagated from the same stock, must be brought in contact with the



A cluster of Harding blueberries, natural size. The large berries only were ripe. As blueberries ripen they rapidly increase in size. The Harding is the smallest berry being extensively propagated.

which as yet we call simply 620A and S30C, have much finer berries than any of the others, the largest being but little short of three-fourths of an inch in diameter. With such results, and with more recently discovered parents whose berries grow nearly and quite three-fourths of an inch across, is it entirely wild to dream of inch blueberries? Seedlings of the better plants are in the field, but too young to produce fruit.

PROFIT POSSIBILITIES.—For the "blueberry-specials" dream to come true blueberry culture must needs be profitable. What is there to show? Well, the sample is small enough, but the promise is such that we look forward to planting a hundred acres to

Year	Average per bush	Yield per acre plants 8'x4'	Price received per bu. f. o. b.	Gross receipts per acre
1916	.344 qts.	16 bu.	\$8.00	\$128.00
1917	.768 qts.	33 bu.	8.00	264.00
1918	.544 qts.	23 bu.	9.60	220.00
1919	.932 qts.	39½ bu.	10.00	390.50

blueberries. Our largest crop, that of 1919, slightly exceeded 300 bushels, and was produced in great part on little plants yielding for the first or second time. The possible yield and receipts per acre can best be judged from the above record of the first acre of Brooks-Sooy seedlings, set in September of 1913,

especially from New England, from the Carolinas and from States bordering on the Great Lakes. We will pay \$50 each and shipping charges for plants with three or four berries three-fourths of an inch in diameter, or as large as a cent. Wild plants with large berries which do not come up to this requirement should be tried under cultivation near their point of origin.

SOIL REQUIREMENTS.—The essentials of blueberry culture are an acid soil, preferably one composed of peat and sand, and a supply of water so controlled that the soil is continually moist but never sodden during the growing season. The necessity of good drainage for blueberries cannot be too strongly emphasized. We have lost more plants from the lack of it than from all other causes combined. For commercial blueberry culture it is advisable to employ lands which are naturally acid, and on which wild blueberries or similar plants are growing. Great areas of such land are found in many parts of the

IN THE HOME GARDEN

home gardens the soil is not so good for the needs of enough blueberry plants for the family table. The first essential is of good drainage: the second to provide sand and peat or partially decayed leaves to see that water can be given during hot, dry weather. In gardens with light sandy soil the addition of partially decayed leaves will probably be sufficient. A layer a foot deep should be mixed with the upper six inches of soil. In gardens with heavy clay soil such a mixture of one-third sand to two-thirds partially decayed leaves should be placed in trenches or on top of the ground, depending on whether, in that particular garden, it is more necessary to conserve moisture or to facilitate drainage. The care of blueberry plants set in specially prepared soil is very simple. It consists of watering when necessary and of maintaining about them by annual additions a heavy mulch of leaves. These leaves should be of oak or some variety which rot slowly. Maple leaves and others which rot quickly will not maintain the necessary acidity in the soil. The leaves supply all plant food necessary. Manure or artificial fertilizers should be avoided, as they are likely to be injurious. Every fine wild bush that is successfully brought under cultivation, every group of the selected varieties of blueberries