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A Population of *Vaccinium corymbosum* L. in Wisconsin

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A short note in Wisconsin Horticulture (1) reported "while hunting 2 years ago, Allan Troemner of Friendship noticed bushes resembling blueberries, but which grew much taller and somewhat more vigorously. Later examination revealed the berries to be much like our native low blueberry.

The tall growing blueberry bushes are growing with native lowbush blueberries in the sandy soils of central Wisconsin. This area is subject to harsh weather conditions and cold winters where a minimum of 52 below zero has been reached.

Highbush blueberry clumps were found growing in a wet peat swamp in a mixed stand of jack pine, birch, and larch. . . . No winter injury was found on these plants and little or no injury or freezing back has been observed on the highbush clumps which reach a height of 5 or 6 feet."

In July, 1973, Mr. Troemner guided us to the location of the blueberry colony. About one mile from any habitation and far removed from any currently cultivated land, the colony of blueberry bushes persists in the bog setting described in the earlier report. The colony was more or less circular and covered an area approximately 50 feet in diameter. A crop of green fruit was present on the bushes. The tallest blueberry bushes reached 7 feet in height. They are rather sparsely branched due presumably to the poor light conditions under which they persist in this location. Intermixed with the highbush blueberries were some low bush blueberries, *V. angustifolium* Ait. and some intermediate size blueberry bushes of undetermined identification along with huckleberries, *Gaylussacia* sp., larch, *Larix laricina* Koch., birch, *Betula* sp. and the expected sphagnum moss ground cover. There were no jack pine *Pinus banksiana* Lamb. in the bog although the surrounding sand area does have a population of jack pine and oak, *Quercus* sp. The colony of highbush blueberries is in southwestern Adams County, Wisconsin, approximately 60 miles north of Madison at about 44° north latitude.

Several years earlier a number of plants from this colony were moved to a wet sand garden area near the Troemner homestead about one mile away. At the time of our visit these bushes were 6-8 feet in height and were carrying a fruit crop. Mrs. Troemner, Allan's mother, indicated that these plants almost always set a crop of fruit but they rarely ripened the crop. We assume that failure to ripen was the result of spring and summer frosts that are common in that area of the state and particularly in the lowland habitat.

A later visit to the native colony resulted in the harvest of ripe berries of small size and blue color typical of the *V. corymbosum* description (2). Leaf and fruit samples examined by

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herbarium specialists at the University of Wisconsin-Madison were identified as *V. corymbosum* L., the first collection of this species in Wisconsin.

Seeds of this blueberry were collected and germinated. Softwood cuttings taken from several of the resulting seedlings have rooted readily when placed under mist in a peat-Perlite medium. We have conducted no genetic studies nor have we made controlled evaluations of this material for climatic adaptation or fruit quality. Seeds from the original plants were provided to Dr. Cecil Stushnoff, University of Minnesota, St. Paul, MN.

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BREGGER STUDENT AWARD PAPER (1979): Polyploid Breeding: A Valuable Tool for Fruit Crop Improvement

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METHODS OF POLYPLOID BREEDING

There are two principal methods of polyploid breeding used to improve fruit crops (7). Certain crop plants can be improved by simply doubling their chromosome number. This method is called autopolyploidy. Grapes are an example of a crop subject to improvement by this method. Some autopolyploid grapes of the Portland and Fredonia varieties produce berries almost twice the weight of their corresponding diploids (6). Since autopolyploids are often partially sterile, this method of breeding works best on vegetatively propagated crops where seed yield is of secondary importance (13).

The second method untilizes the hybridization of species differing in ploidy levels (for example, crossing a diploid with a tetraploid). This method probably has greater potential than autopolyploidy for improving present-day fruit crops and also for creating new ones. The loganberry, a relatively new fruit, resulted from the hybridization of the blackberry and the raspberry. It consists of four sets of chromosomes from the blackberry and two sets from the raspberry (7). New cultivars of triploid citrus, hybrids between diploid and tetraploid citrus, have been created with the desirable characteristic (to the consumer) of being seedless (3).

Polyploid breeding can be used to transfer valuable genes from native species to cultivars or from cultivar to cultivar. Sharpe and Sherman (15) have transferred low chilling genes from a native diploid blueberry, *Vaccinium darrowi Camp,* to northern highbush cultivars (tetraploid). Work is currently under way at the University of Florida to transfer the early fruiting and flavor characteristics of northern highbush cultivars (tetraploid) to southerly adapted rabbiteye cultivars (hexaploid).

POLYPLOID INDUCTION

Polyploid induction usually refers to the doubling of chromosome numbers by man. The use of the alkaloid colchicine to double chromosome num-

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