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Grape Culture in Cold Districts*

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THE object of this paper is to show that the grape can be grown for home use over a very wide area of country outside what are known as the grape districts. Grapes grow wild in Canada in the provinces of Nova Scotia, New Brunswick, Quebec, Ontario and Manitoba. Two species are found, namely, *Vitis riparia* which is found in all the provinces mentioned, and *Vitis aestivalis*, which is confined to south-western Ontario.

Vitis riparia is a very hardy species. It is found in Manitoba as far north as latitude 52 degrees, where the temperature falls very low in winter. Near its northern limit in Manitoba it is found in the valleys of the Red and Assiniboine rivers and at the south end of Lake Winnipeg. The ability of this wild species to survive and ripen its fruit in the cold climate of Manitoba should be an incentive to the plant breeder to endeavour to originate varieties having large fruit of better quality than this wild species which will be hardy enough to be grown without protection as far north and in as cold districts as *Vitis riparia* grows wild. In the meantime we must be content to grow in as many places as we can the varieties which, with a little protection in winter, will ripen their fruit.

At the Central Experimental Farm, Ottawa, nearly 150 miles north of the Niagara peninsula, we have tested in the vineyard about 200 named varieties of grapes. It will be of interest to know the number of varieties which ripened in each of the last five seasons. In 1904, which was a very favourable year, there were 32 varieties ripened; in 1905, 90; in 1906, 100; in 1907, 26; and in 1908, 118, or an average for the five years of 73 varieties.

When the seasons are very favorable, most of the best commercial grapes grown in the Niagara district ripen at Ottawa. When the seasons are moderately favorable some of the best commercial varieties do not ripen. The varieties which are recommended for Ottawa or places where the climate is somewhat similar are:

Black:—Early Daisy, Manito, Moore, Worden, Wilder.

Red:—Moyer, Brighton, Delaware, Lindley.

White:—Golden Drop, Winchell, Diamond.

Of these varieties, the Worden, Wilder, Brighton, Delaware, Lindley, and Diamond do not ripen thoroughly in the most favorable seasons. The others ripen practically every year. It has been observed that some varieties which are among the earliest to ripen in warm seasons are in unfavorable seasons later in ripening (if they ripen at all) than some which in a warm season are not so early. In other words, the amount of heat changes the relative earliness of the different sorts.

The following varieties of grapes ripen practically every year:—

Very Early:—Florence, Early Daisy, Manito, Champion, Pattison, Golden

commercially profitable in the colder districts where the temperature does not fall more than five or six degrees below freezing before the second week of October. In the year of 1903, one of the most unfavorable for grape growing in the past twenty-one years at Ottawa, nearly all the varieties given in the above list ripened before October 1st.

During the twenty-one years in which grapes have been grown at the Central Experimental Farm, there has been little winter killing of the vines when protected with from four to six inches of soil, when the temperatures have been very low with little or no snow on the ground. The vines are trained to two arms branching near the ground for the greatest ease in covering. Those arms remain for two, three, or perhaps more years, being replaced as soon as they lose their pliancy or have too many dead buds by new arms which may be replaced in alternate years.

If the early ripening varieties of grapes which have been mentioned escape the spring frosts little need be feared from winter injury. The swelling buds and young shoots of grape vines are very easily injured by frost, hence the greatest precaution should be taken to prevent injury. After many seasons' experience it has been found desirable to leave the vines protected with soil as long as possible without injury from moulding. The buds are swelling rapidly and in some cases have broken when the vines are uncovered at Ottawa during the second week of May and only twice in twenty years has there been sufficient frost after uncovering to injure them. The later spring frosts are expected, the longer should the vines be kept covered.

If the warmest soils and a southern exposure are chosen for the vines, if the earliest ripening varieties are grown, and if the vines are protected with soil in winter and left protected until as late in the spring as growth will permit, there is no good reason why with the varieties now available the culture of grapes for home use should not be extended far north in Canada and the United States, and even grown in some parts of the prairies of the north-west, where at present it is supposed they cannot be grown successfully.

At First Sight

I received a sample copy of THE CANADIAN HORTICULTURIST recently. Enclosed please find \$1 in payment for a two years' subscription. It is just the paper I have been looking for.—Mrs. Jas. A. Stewart, New Westminster Co., B. C.

Drop, Jewel, Bonne Madame (probably Bonne dame de Vignala).

Early:—Moyer, Moore, Winchell, Telegraph, Brant, Canada, Hartford, Dracut Amber, Peabody.

Of those in the earliest group, Florence, Early Daisy, and Champion are said to be of pure *Labrusca* parentage. Pattison is probably *Riparia* and *Labrusca*. Jewel and Golden Drop have blood of *Labrusca*, *Bourquiniana*, and *Vinifera*. Manito is a combination of *Labrusca*, *Vinifera*, *Bourquiniana*, *Lincecumii* and *Rupestris*, and Bonne Madame is pure *Vinifera*. It is interesting to note that blood of six different species of grapes are in these eight earliest varieties. If with this extreme earliness and ability to ripen even in the coolest seasons at Ottawa there were added the hardiness of the *Vitis riparia*, grape growing would be easy and perhaps com-

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