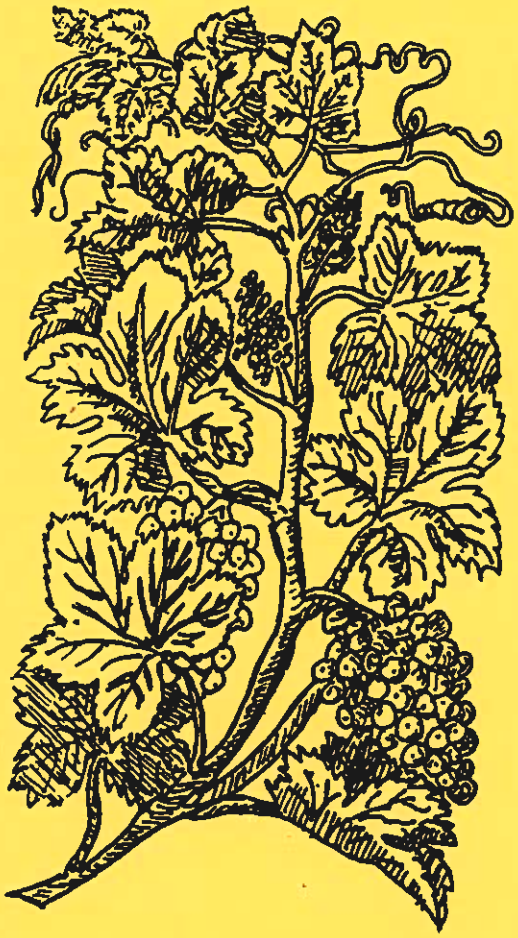
"HEAVEN'S FAVOURITE GIFT:"

Viticulture in Colonial Maryland, Virginia, and Pennsylvania

by

Elizabeth B. Pryor



Vitis Vinifera

THE NATIONAL COLONIAL FARM

RESEARCH REPORT NO. 23

The Accokeek Foundation, Inc.

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Introduction

Few elements of the rough American landscape captured the earliest colonists' imaginations as did the number of wild grapes. Soil and climate around the Chesapeake Bay were ideally suited for grapes which loaded the trees with the weight of their vines and fruit. The rich clusters and twining vines gave a look of sumptuous plenty to the land and conjured up visions of abundant wine and other luxuries associated with grape producing countries. America was, as one writer put it, "a delicious Country, being placed in the Girdle of the World which affords Wine, Oil, Fruit, Grain, and Silk."[1] Other writers, less poetic, but equally impressed with the area's prospects, wrote their own descriptions of the teeming vines. "There are fruitful vines, from which wine can be made," wrote a visitor to Maryland in 1633, "and a grape as large as cherries, the juice of which is thick and oily. The inhabitants call these Mesamines."[2] A century and a half later, the vines were still abundant enough to impress new colonists. "Great numbers of trees in the woods, especially in the low grounds, are covered with vines," John Ferdinand Smyth reported from the banks of

the Potomac River, "and bend under the weight of the ripe grapes, which are suspended in accumulated multitudes of large and delicious clusters."[3] Some visitors spoke of the delicious fragrance of the grape blossoms in spring, others of the tenacity of vines which climbed the tallest trees, completely covering the branches with their tendrils and fruit.[4] Most looked past the abundance of the fruit, however, and saw the commercial possibilities of an extensive wine industry. Thus the vine-laden landscape promised riches beyond a fruitful soil--it whispered of brimming glasses, self-sufficiency, and the advantages of foreign commerce. As William Ellis predicted, "when the colonists are enabled to pay attention to their natural advantages, they will, assuredly possess all the superfluies as well as the conveniences of life without the necessity of recurring to foreign assistance."[5]

A number of observers remarked on the variety as well as the abundance of grapes. Robert Beverely, a well-to-do Virginian who was keenly interested in the possibilities of cultivating the native vines, noted that there were some grapes "which are very sweet and pleasant to the taste, others rough and harsh, and

perhaps, fitter for Wine or Brandy."[6] He went on to categorize the varieties he had found. Among them were a lowland grape, sparse in flavor and size of cluster, and a large-vined species, which bore blue-black grapes in large bunches, some of which ripened in mid-summer and others which could not be gathered until after frost. In addition to these, Beverely described another kind

> produced throughout the whole Country, in the Swamps and Sides of Hills. These also grow upon small Vines, and in small Bunches; but are themselves the largest Grapes as big as the English Bullace, and of a rank Taste when ripe, resembling the smell of a Fox, from whence they are called Fox Grapes. Both these Sorts make admirable Tarts, being of a fleshy substance and perhaps, if rightly managed, might make good Raisins.(7)

About the same time, John Lawson in North Carolina made a similar attempt to classify the region's native grapes. He noted six distinct varieties.

> The first is the black Bunch-Grapes, which yield a Crimson Juice. These grow common, and bear plentifully. They are of a good Relish, though not large, yet well knit in the Clusters. They have a thickish Skin, and large Stone, which makes them not yield much Juice. There is an another sort of Black-Grapes like the former, in all respects, save that their Juice is of a light

> Flesh-Coulour, inclining to a White. I once, saw a Spontaneous white Bunch-Grape in Carolina; but the Cattle browzing on the Sprouts thereof in the Spring, it died. Of those which we call Fox-Grapes, we have four sorts: two whereof are called Summer-Grapes, because ripe in July; the other two Winter-Fruit, because not ripe till September or October. The Summer Fox-Grapes grow not in Clusters, or great Bunches, but are about five or six in a Bunch, about the Bigness of a Damson, or larger. The black sort are frequent, the white not so commonly found. They always grow in Swamps, and low moist Lands, running sometimes very high, and being shady, and therefore proper for Arbours. They afford the largest Leaf I ever saw, to my remembrance, the Back of which is of a White Horse-flesh Colour. The Fruit always ripens in the Shade. I have transplanted them into my Orchard, and find they thrive well, if manured.... The other Winter Fox-Grapes, are much of the same Bigness. These refuse no Ground, swampy or dry, but grow plentifully on the Sand-Hills along the Sea-Coast, and elsewhere, and are great Bearers. I have seen near twelve Bushels upon one Vine of the black sort. Some of these, when thoroughly ripe, have a very pretty vinous Taste, and eat very well, yet are glutinous. The white sort are clear and transparent, and indifferent small Stones.(8)

Yet even these detailed analyses did not cover all the grape varieties, for American grapes hybridized

freely. William Penn recorded seeing a "great Red Grape" and a "white kind of Musketel" as well as the black cluster grape described by Beverely and Lawson.[9] In the mid-eighteenth century agriculturalist John Mitchell counted fifteen different varieties in the woods near his house "the like of which, growing wild, are certainly not to be found in any part of the world."[10] And Philip Mazzei, who arrived in Virginia in 1773 for the express purpose of studying the wine, counted over two hundred varieties of wild grapes--"good, fair, and bad."[11] William Byrd was another who attempted to analyze the various properties of the wild grapes. He divided the region's varieties into six divisions, naming black and red cluster grapes, several types of fox grapes, winter, and summer grapes, all of which he believed had laudable properties.[12]

Despite continuing interest in American grapes, no attempt was made to classify them scientifically until around 1830 when C.S. Rafinesque tried to match the colorful folk names with botanical characteristics. In the Chesapeake region he noted fifteen distinct species, with innumerable varieties within those catagories. Rafinesque found the same difficulties as his forerunners in identifying the species because of

their tendancy to hybridize.[13] In the twentieth century botanists narrowed the field slightly. Arthur B. Massey, who was particularly interested in the grapes of Virginia, identified seven varieties, called vernacularly the Fox grape, Frost grape, Pigeon Grape, Possom Grape, Summer Grape, Riverbank Grape, and Scuppernong or Muscadine Grape. All could be traced back to those kinds seen by the first Europeans to come to America, though the subspecies had changed and expanded over the centuries.[14] U.P. Hedrick further streamlined the categorization by determining that all of the grapes in eastern America could be put into four species: Vitis lambrusca, the fox grape, boasting large, attractive berries of red, white, or black varieties, with a pronounced wild flavor; V. rotundiflora, a peculiarly southern grape, called the muscadine because of its sweet musky flavor; V. aestivalis, which included all of the black summer grapes, and which, though poor desert fruit, showed promise as a wine grape; and V. vulpina, a wine grape growing along rivers and streams, which was very disease resistant.[15]

Colonial Attempts at Viticulture

With vines so plentiful, promoters and politicians lost little time in encouraging colonists to harvest the native grapes, and domesticate them in vineyards. As early as 1611 there were specialists in the Chesapeake colonies who devoted their labor to planting vines. The Virginia Company promoted viticulture by sending French "vignerons" to the area, and their first reports, sent to Europe in 1621, were full of optimism for the wine industry. The following year they sent a sample of wine to England; unfortunately it was spoiled by putting it into musty cask "so that it hath been rather of scandall than creditt unto us."[16] Though this early attempt was plagued by insect pests and Indian troubles, and ultimately ended in failure, colonial officials continued to encourage grape cultivation. Throughout the early years of colonization tracts were printed which extolled the virtues of Virginia and Maryland for growing the vine. "God and nature have pointed them a soyle out with their own finger," wrote one enthusiastic pamphletter, concluding that to ignore such advantages would be "an affront to Nature."[17] Personal profit, the pleasures of the cup, and patriotic duty were stressed in these tracts. Vit-

iculture in America, declared Edward Williams, "would be a staple which would enrich this country to the envy of France and Spain, and furnish the Northern parts of Europe, and China...with the Noblest Wine in the World and at no excessive prices."[18] So certain were officials that grape production in America would end British dependence on imported wine, that in 1658 they offered a bounty of ten thousand pounds of tobacco for anyone making "Two tunne" of wine.[19] In the early 1700 Hugh Jones noted that Virginians were still being encouraged to grow grapes commercially, despite the overwhelming predilection for tobacco culture.[20] In Pennsylvania, William Penn imported grape cuttings from Europe, experimented with native varieties, and hired the services of Andrew Dore, a skilled vigneron, to establish an experimental vineyard in the colony. "If wine can be made by Andrew Dore," Penn told a friend in 1686, "it will be worth to the province thousands by the year; there will be hundreds of vineyards if it takes."[21] The colony of Maryland also sought to foster viticulture. Noting that a number of grapes did not produce well there, Governor Sharpe requested that vines specifically suited to Maryland's climate be sent from Europe.[22] In 1756 political leaders in Annapolis

voted to exempt locally produced wines from a general exise tax, so that there would be "Encouragement of Persons who shall distill Spirits from any Grain or Fruit of, the Growth of the Province...."[23]

Private and political encouragement continued up until the American Revolution. In 1769 the Virginia House of Burgesses voted to establish an experimental vineyard near Williamsburg, complete with a force of slaves and an imported winemaster. Private planters such as Benjamin Tasker, Robert Bolling, Thomas Jefferson, and William Byrd extolled the benefits of the vine to their fellow citizens.[24] George Washington told a friend that he had "long been of opinion from the spontaneous growth of the vine, that the climate and soil in many parts of Virginia were well-fitted for Vineyards and that Wine, sooner or later would become a valuable article of produce."[25] On the eve of the Revolution the author of American Husbandry pleaded with planters to grow grapes, citing ideal climate, and a measure of freedom from the relentless debts of tobacco marketing. Not only were there native grapes in abundance, he wrote, but the forests yielded the perfect wood for vine cooperage.[26] One American spoke of the advantages to the empire: cheaper Madeira

because of lessened demand; greater flow of money and consequently a larger American market for British manufactures; better internal commerce in America as other colonies purchased wine from Maryland and Virginia; and greater subsistence for small farmers whose poorer lands were well-suited to the grapes.[27] "Why then do we hesitate where every thing promises success?" cried a French viticulturalist, "...in a word, honour, independence, wealth, stretch out their hands to us: and shall we be wanting to ourselves?"[28]

But, in spite of such enthusiastic exhortations, the early attempts to make the Chesapeake watershed into a great wine producing region were notable failures. There were complex reasons for this, including lack of experience in viticulture, poor varietal types of grapes, and the colonist's desire to make an early and easy profit from their labors. (A tobacco crop took only one growing season to make a cash crop, whereas at least six years were required to produce wine). The shortage of manpower was also a critical factor. When asked, late in the eighteenth century, why there were no vineyards and few wine presses in America, naturalist William Bartram replied

that it was because labor was so scarce.[29] St. Jean de Crevecoeur, an enthusiast for self-sufficiency on the farm, admitted that he felt guilty about not making his own wine since his river bottom land annually produced enough grapes to supply his household with that article. But, he concluded, "labour is so dear, and I am so inexpert that I am discouraged from undertaking any new schemes."[30] John Beale Bordley, a pragmatic agriculturalist from Maryland, thought the chronic colonial labor shortage was in fact an excellent reason for avoiding luxury crops such as grapes, which distracted the farmer from producing essentials such as grain and livestock.[31] As tobacco became an increasingly dominant crop in the Chesapeake region, to the point that it was used as currency, and given preference by merchants in the colonial trade, planters, were correspondently reluctant to expend their energies on producing anything else. As a consequence, despite the natural abundance of the grapes, and their ease of propagation, they were utilizied only as a wild fruit; as Robert Beverely observed, "very few have them at all in their Gardens, much less endeavor to improve them by cutting or laying.[32] Another, more critical, visitor, also

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noticed the tendancy of the Americans to concentrate on raising tobacco. "Grapes grow wild in the Wood, twisting round the trees like woodbine," wrote William Hugh Grove in 1732, "but being never Priened nor Cultivated and always shaded, (they) might be Improved and good Wine made, but all their Care is to Tobacco and Little Else minded Except Corn."[33] Summing up the situation, a member of the Virginia Company wrote: "tobacco only was the business, and for ought that I could hear every man madded upon that little thought or looked for anything else."[34]

Another of the difficulties faced by would-be viticulturalists was the fact that American grapes were, on the whole, ill-suited to wine production. Though hardy and abundant, they often lacked juice, or were sharp tasting and sour, an indication that they contained insufficient sugar to make a palatable -- or potent -- wine. Peter Collinson wrote from London that he believed the "Fox grape would make a noble Generous Wine, if you had patience to stay till it Had worn off that rancid Flavour (whilst new)."[35] But even these Vitis lambrusca varieties lacked the subtleties that made for great vintages; the best they could produce

was an odorific, spicy wine with a distinctively provincial taste: "strong and masculine" was how one authority characterized it.[36] William Bartram admitted to fellow botanist Peter Kalm that "the wine which is pressed out of most of the North American wild grapes is sour and sharp and has not nearly such an agreeable taste as that which is made from European grapes."[37] The author of American Husbandry, an advocate of an American wine industry, wrote that in the Chesapeake colonies the grapes, "though plentiful to excess, are inferior...."[38] Another honest, though kindly, observer noted his first taste of an American vintage, offered by a middling farmer along the Potomac River. "He gave me some grape-like juice to drink, which he called Port wine, and entertained me with saying he made it himself: it was not to my taste equal to our Port in England, nor even strong beer; but a hearty welcome makes everything pleasant, and this he most cheerfully gave me."[39] Indeed, the only laudatory comments on native American wine came from those hoping to lure colonists to the area, to maintain American pride in the face of European ridicule, or hoping to make profits for British merchants through American wine production. Comments that the "ordinary sorts of

(grapes) in Virginia yield a wine so like the common Bordeaux wine, that it is difficult to distinguish the one from the other..." are simply not borne out by other testimony.[40]

A number of viticultural enthusiasts believed that native American varieties could be improved. It was location and culture that mattered, they maintained, not merely varietal type, and the lambrusca and rotundiflora varieties would benefit by proper care and more sun. One woman, who visited North Carolina near the time of the American Revolution, thought the crude results of winemaking not bad, but lamented the neglect the vines suffered when nature was the only vigneron.[41] The author of American Husbandry was most vocal in his belief that American vines could be perfected and palatable wines produced. "The planters know not what would be the effect of culture on these vines, though the grapes at present will not make good wine," he wrote, "yet is there no reason to think that cultivation, upon approved principles, would not render them of a quality sufficiently excellent? [I]t is ploughing between the rows, dressing, and pruning, that gives the flavour to the grapes; and why should not the

same causes have the same effect in America?"[42] To improve the wild strains, skilled vineyard workers from Europe were encouraged to come to the Chesapeake colonies throughout the colonial period. As mentioned above, in 1611 there were French vignerons in Virginia for the express purpose of starting a local wine industry, and in 1662 Lord Baltimore sent instructions expert advice of a French winemaker.[43] William Penn brought over Andrew Dore in 1683 with hopes that Dore would be able to improve the red fox grape; it was, he wrote "an extraordinary grape and by art, doubtless, may be cultivated to an excellent wine."[44] The next century saw the establishment of a colony of Huguenot vignerons by William Byrd, efforts by Italian vine workers under the direction of Philip Mazzei, and the beginnings of an official Virginia vineyard under yet another Frenchman, Andre Estave.[45]

Many of the imported vignerons brought grape vines with them, in the hopes that such a natural grape region would prove a good home for Old World vines as well. The wine producing grapes of Europe were all members of the species Vitis vinifera, a delicate group of plants with vulnerable root systems. They lacked the hardiness to withstand all but the mildest winters,

and many ripened too early in the hot Chesapeake summers to produce flavorful wine. Moreover, they were susceptible to several types of fungi and the root louse, Phyloxerra, to which native American plants had long been resistant. Thus few vineyards of vinifera grapes survived more than one or two winters, and none at all during the colonial period survived to produce enough wine to be given a fair trial. By the time of the American Revolution most experienced planters had come to be conclusion that if there was to be an American wine industry it would have to be based on the cultivation of American grapes. George Washington was among these. In 1783 he wrote that although he had never particularly fancied grape culture, he had observed that "Exoticks" did poorly in Virginia and had concluded that by a "happy choice" of a native species he would succeed better than those with imported vines. Consequently, his vineyard consisted chiefly of cuttings of North American grapes. The American Revolution interrupted his experiments, but his opinion on the fittness of the native vines remained unchanged.[46] Even Andre Estave, whose early predilection was for the vinifera grapes, concluded

that Americans should concentrate on improving their own strains. After listing all of the injuries suffered by European vines because of excessive rain, worms, and summer heat, he concluded: "It is my humble Opinion, that the native Vines of the Country can alone be cultivated with Success...."[47] A few years later poet and viticulturalist Isaac Hutton offered a rhymed affirmation of his faith in American vines.

> Ask not of transatlantic realms the Plants
> That shall unfailingly reward thy care:
> Here, sterner winters bite th' unshielded earth
> With fructifying frost, at times too sharp
> For frail exotics. Trust the native vine;
> The Fox, the Bland, Schyllkill, and Catawba.
> These have withstood the chill north-western blast--
> The buring sun-beams and the summer draught.(48)

Despite these expert conclusions, however, enthusiasts continued to import <u>vinifera</u> grapes throughout the seventeenth and eighteenth centuries. Charles Carter had red and white Portugese varieties on his plantation and John Custis had several types of European grapes in his experimental garden at

Williamsburg.[49] In Maryland, Charles Carroll ordered the "Largest Eating Grape Black and White" from his English tobacco factor, while his uncle at Doughoregan Manor attempted to grow "Rhenish, Virginia grape, Claret and Burgundy."[50] At various times Thomas Jefferson planted slips of Burgundy, Champagne, Bordeaux, Frontinac, and Spanish raisin grapes.[51] For all of his faith in native varieties, Washington also experimented with Madiera, "French grapes", Malmsey, Vera, and "Maliga" grapes at Mount Vernon.[52] Robert Bolling, who, before his death in 1775 did extensive experiments in viticulture on his Virginia estate, advocated an Italian type called "Lachryma."[53] To some extent the time spent in pampering and experimenting with these vines held back the culture of native vines by diverting skill and interest away from domestication of the wild varieties.

A final element worked to retard the growth of a colonial wine industry: the availability of inexpensive liquor. Madiera was the preferred wine of the colonists, and a visitor found that it could be had "at not more than half the price of England...."[54] Spanish and French wines were similarly inexpensive. Even the poorest colonists had an abundance of apples

and peaches available to them; from these they made a potent cider, peach mobby, or peach brandy.[55] Those with a market advantage could trade tobacco for cheap West Indian rum. In short, alternative forms of drink were easily bought or made. Wrote John Mitchell: "It is this profusion of spiritous liquors, which they have from rum and molasses, that hinders them to make wine."[56]

With so many obstacles to overcome, viticulture never became a common part of colonial husbandry. In each generation, however, there seems to have been several individuals who were intrigued by the possibilities of a colonial wine industry and undeterred by the failures of their predecessors. Their efforts, while not typical, are worth studing, for they illustrate the problems faced by early viticulturalists--problems which kept others from following their lead.

In Pennsylvania, William Penn was one of the earliest to make an extended effort in vine cultivation. Like others of his time he debated whether to "fall to Fining the Fruits of the Country, especially the Grape by the care and skill of Art or send for foreign Stems and Sets." Cautioned by the

unrewarding attempts of earlier viticulturalists, Penn was determined to conduct his experiments with care. He decided to order vines from France and Spain (though he did some experimenting with the local fox grapes), and planted them along the banks of the Schuylkill River near Philadelphia. Penn had great hopes for the project and looked forward to the time when Pennsylvania would produce "as good Wine as any European Countries of the same Latitude do yield."[57]

Penn's mistake was to concentrate too much on European grapes, which grew well for a season or two, then languished and died. By 1687 the majority of Penn's vines were dead. He did not renew his own efforts in viticulture after such a devasting failure, yet he continued to encourage others in his colony to raise grapes. One friend, known as Pastorius, planted a vineyard of European varieties at Germantown, which Penn visited several times before it too failed. Convinced that the grape failure was the fault of man not nature, Penn continued to believe that his colony had a bright potential for viticulture.[58]

In Virginia early efforts at grape culture had been so notorious that when Robert Beverely proposed attempting it in the early part of the eighteenth

century, he was roundly mocked. Beverely had marvelled at the natural abundance of grapes; "I have seen..," he wrote, "more Grapes upon one single Vine, than would load a London cart."[59] As a result he believed that viticulture was a natural occupation for Virginia, and that it would bring about a healthy diversification in the tobacco-obsessed economy. When ridiculed for his beliefs, he challenged a number of prominent gentlemen to a wager that within the space of seven years he would be able to produce seven hundred gallons of wine from one vineyard. When the gentlemen agreed, Beverely, set to work planting three acres of vines, including in it both wild varieties and Italian, French, Spanish, and German vines. The vineyard was placed on the side of a hill, and no expense was spared in its improvement. By the time John Fontaine, a touring Frenchman visited it in 1715, the property boasted caves and a wine press, and Beverely was producing nearly four hundred gallons of wine per year.[60] Fontaine noted, however, that Beverely's methods were not strictly up to European standards, nor were his wines particularly good. "I found by the taste of the wine," he wrote, "that he did not understand how to make it." Fontaine and Beverely

were, nevertheless, "very merry with the wine of his own making, and drank prosperity to the vineyard."[61]

Prosper it did, and, according to Hugh Jones, who lived in Williamsburg in 1717, Beverely not only easily won his bet, but greatly encouraged others to take up the cultivation of grapes. Beverely used the prize money to enlarge his vineyards, and was so successful that he supplied not only his family, but slaves with wine. Perhaps the unorthodox methods Fontaine commented on (the details of which have gone unrecorded) were responsible for his unusual success, for strictly European methods were clearly not well adapted to American conditions. In any case, his work made others believe that winemaking could be "done easily and in large quantities in those parts." Hugh Jones believed that only his death prevented Beverely from perfecting viticulture in America.[62]

Among those influenced by Beverely's work was his brother-in-law, William Byrd II. Like Beverely, Byrd was dedicated to improving the Virginia economy, and undertook several projects aimed at agricultural diversity. Like so many others before him, Byrd thought the abundance of wild grapes an indication of a natural affinity for vines, and believed that the

native grapes would be improved by proper culture. Despite the sharp taste of the wild varieties, Byrd wrote, he had "drunk tolerably good wine pressed from them, though made without skill. There is then good reason to believe it might admit of great improvement, if rightly managed."[63] But, Byrd failed to follow up his belief in native vines. When he began a vineyard in 1729 he concentrated on cultivating European varieties.

It was Byrd's contention that frost and disease were not the only impediment to making wine of the vinifera varieties. Crucial to the process was the time at which the grapes ripened, for early ripening meant the wine spoiled during fermentation, and late ripening varieties were often damaged by rain, or lacked the sugar to make a well-flavored or strongly alcoholic beverage. Thus Byrd was concerned with finding a European varietal which would not ripen too early in the hot Virginia sun. He planted over twenty kinds of grapes, including Tokay, Muscadine, and Champagne, ordering vines from acquaintances throughout Europe.[64] Though ignorant of its import, Byrd appears to have found the key to the later success of vinifera vines in America, when an acquaintance informed him

that "the way to succeed, in a vineyard, is to graft choice vines, on stocks of our wild ones, to naturalize them better to our soyl & clymate."[65] Byrd does not seem to have followed this good advice, however, for in 1736 he wrote sorrowfully that his friends who attempted viticulture would "meet with more Rubbs than they expect."[66] All of his grapes were demolished by frost that year, and twelve months later he stated that the seasons were so uncertain and insects so destructive that he no longer believed his project would succeed. Instead he planned to settle a colony of Swiss immigrants in the mountainous areas of Virginia, where he hoped vineyards would thrive better. But though he made several attempts to do this, none succeeded.[67]

Another colonial planter who nearly found the key to success was Benjamin Tasker. A widely influential Maryland man, Tasker began to have an interest in viticulture in the mid-eighteenth century. His efforts were particularly noteworthy because he eschewed both the native varieties which produced inferior wine, and the disease-prone European vines. Instead, Tasker planted hybrids at his estate, "Bel Air." Around 1740 a vigernon named James Alexander, working in

Pennsylvania, had accidently discovered a hardy hybrid vine with a fruit similar to the grapes grown in the Burgundy region of France. Believing it to be a cross between the lambrusca and vinifera varieties, he carefully cultivated it. The result was the Alexander grape, America's first successful hybrid, and it was this type that Tasker planted in his twenty-acre vineyard.[68] His results were exceedingly promising. His wine, modelled after those of Burgundy, became known in the surrounding colonies, and was impressive enough to be served at the table of the governor of Pennsylvania. A skeptical English gentleman who tasted some there announced that Tasker had "succeeded tolerably well for the first trial."[69] Tasker, like so many other viticulturalists, had his experiments cut off after only a few years trial by his death. Neither family nor friends had the dedication to continue the work, and no one else seems to have taken up his scheme of planting hybrids. As one observer wrote: "whether, as this gentleman is now deceased, any other person will have the spirit to prosecute his plan I much doubt."[70]

After 1750 there was something of a Renaissance in the field, and many prominent planters tried their hand

at viticulture. In Virginia, Washington planted two thousand cuttings of native grapes, and imported Madiera and several other European varieties. Like William Byrd, Washington was interested in finding a variety whose grapes would ripen after frost. His continual absences from Mount Vernon, and several late frosts, hampered his experiments, however. In 1783 he wrote apologetically, "Had I remained at home, I should 'ere this, have perfected the experiment which was all I had in view."[71] Landon Carter was another farmer who added viticulture to the long list of agricultural experiments he performed. Between 1763 and his death in 1778 Carter continually tried raising grapes, and making wine. Many of his vines were lost by wet weather or frost, and even the years he harvested a crop he found that his wine often lacked flavor. Towards the end of his life Carter began to have some success with his wine, which he attributed to his method of distilling rather than the grapes themselves.[72] In Maryland Charles Carroll dabbled with grape growing; he planted French and German varieties, as well as some hybrids and native vines, at Doughoregan Manor in Howard County. Viticulture

appears to have been a hobby for his old age, as his son attested in this charming letter, written in 1772.

> (My father) amuses himself usefully and agreeably. He begun a year or two ago a vineyard, which I hope he will live to see thrive & perhaps bring to a tolerable degree of perfection. At least he has spared no pains or cost to deserve success. If we live a few years longer, you may depend on tasting the wine of its growth, & doubtless yr prejudices in favour of ye owner will make you fancy it excellent Burgundy, equal to the best wine of France. The vineyard is planted with several sorts of grapes, that we may learn by experience which sorts are best suited to our climate.(73)

Thomas Jefferson's interest in horticulture also led him to import vines and experiment with wild grapes growing around Monticello. In 1774, for example, he planted eight "Spanish Raisins" and twenty-two native vines in his garden. He had little success with these plantings, but attempted to grow grapes again in 1785, when he had Burgundy, Champagne, Bordeaux, and Frontinac vines sent to Virginia from France.[74] Jefferson had great faith that Virginia could be an outstanding wine-producing region, and, when frustrated by his own failures, helped to sponsor the efforts of an Italian viticulturalist named Philip

Mazzei.[75] Mazzei arrived in Virginia in 1773, settled near Monticello, and began searching out the American varieties most likely to make good wine. With him came a number of Tuscan workers. The first year they produced a wine from wild grapes which resembled the small sparkling wines of Champagne, and Mazzei was encouraged to expand his vineyard. So enthusiastic was he, that even when poor weather damaged or destroyed his vines, he still believed that Virginia was ideal for viticulture. "Experience has convinced me that this country is better calculated than any other I am acquainted with for the produce of wines...," Mazzei wrote

> It is true that we cannot call what I have had as yet a fair trial, the seasons having been by all accounts much worse than any man remembers. And it is not improbable that the same seasons would not have been so detrimental to the plants, if they had previously acquired age & vigour. One spring as bad as those we have had ever since I came, except the last, would in Italy & the South of France have destroyed all the young vines & many of the old. Here many of my young vines, planted under several disadvantages, have not only survived repeated severe spring frost, but they are now more vigorous & luxuriant than vines of the same age would be in those Countries, & have sooner produced grapes in respectable quantity & as good.(76)

Mazzei's vineyard did well for over three years, but, in the unfortunate pattern of many Chesapeake area viticulturalists, he was not able to give it the long trial needed to really establish its worth. Though it continued to have the enthusiastic sponsorship of Jefferson and other prominant planters, the vineyard fell a victim to the exigencies of war. The indenture of the Tuscan laborers expired after a few years and Mazzei himself was contracted to go on a diplomatic mission to Europe. During his absence he rented the property to a man whose horses trampled the vines, destroying the vineyard in one week. Thus, Jefferson wrote sadly, "ended an experiment which, from every appearance, would in a year or two more have established the practicality of that branch of culture in America."[77]

Mazzei's trials with native vines were mirrored in the work of Andre Estave, who ran a public vineyard near Williamsburg in the early 1770s. The vineyard had been established by the General Assembly in 1769, and was supported by a grant of 450, the purchase of a sizable tract of land, and the services of three slaves and three apprentices. Estave, a native of France who had become a naturalized citizen of Virginia, was given

free reign to work the vineyard, the title of which was to revert to him if, at the end of six years, he could produce ten hogsheads of drinkable wine. He was firmly convinced that foreign vines would not thrive in America; as one acquaintance reported, "the Reason people have not Succeeded before he says is because they always tryd exotics instead of the native grape of the Country...."[78] In a letter to the Virginia Gazette, Estave reiterated many of the findings of his predecessors. Foreign vines, he stated, ripened too quickly and the wine thus fermented too much in the summer heat, the rains often burst grapes or rotted vines, and they were "exposed to too many injuries from Worms and Insects...."[79] Estave backed up his statements by planting only American varieties of grape in the public vineyard. He was convinced that the native vines, which were larger than wild French varieties, and yielded more grapes and richer juice, would improve with cultivation. "Nothing therefore is required," he wrote, "but the skill of the Cultivator in letting them acquire the proper Maturity, and their Management afterwards, to obtain a Wine of the best Quality."[80]

According to his own account Estave had some success with improving his vines. He planted late grapes, and, through careful selection and pruning, he bettered their size and quality. But, he too found that even the native grapes were vulnerable to weather and outside events. The late spring frost of 1774 destroyed his entire vineyard, and a year later dry weather damaged his new plants. Nonetheless, in 1776 he had 30,000 vines, and the promise of good results. But the Virginia Assembly, strapped for cash in the early years of the Revolution, chose to abandon the project.[81] In June 1777 they sold the land and slaves.

During his years at the vineyard Estave carried on a lively--and public--debate with another viticulturalist, Robert Bolling. A resident of Buckingham County, Bolling had begun his interest in grapes as a young man. The isolation of his estate, "Chellow", had caused him to search for a hobby, and it was to viticulture that he turned. He read voraciously in agricultural works printed in French, Italian, and German, becoming the most knowledgeable man in the colonies on the literature of viticulture. In the mid-1770s Bolling wrote, "A Sketch of Vineculture for Pennsylvania, Maryland, Virginia, and the Carolinas",

which detailed every aspect of viticulture, including selection of a vineyard, soil preparation, propagation, culture, and harvesting. It was never published, but apparently enjoyed a wide circulation.[82]

Bolling's own vineyard was small--about four acres--but his activities there convinced him that native grapes, no matter how carefully tended, would never produce a flavorful wine. He thus became a staunch advocate of imported vines. It was this that led him to the spirited debate with Estave on the pages of the Virginia Gazette. He maintained that the poor results with foreign vines were due chiefly to having the wrong kinds imported, and planting them in unsuitable areas--the low, rich soils of the tidewater, where Estave's vineyard lay, being the worst kind. As an alternative to native grapes, Bolling recommended the Lachryma grape, an Italian type which ripened after September 10. It was this variety which he thought would avoid both the hot August winds, and the rains which spoiled many later grapes. He cautioned Virginians to look further than the public vineyard for proof that the area could produce grapes, for that tract could show only whether Estave could raise them, and make a potable wine. "We may be disappointed in

both those objects," he declared, "without any reasonable Presumption against the Country or Climate."[83]

For Bolling, viticulture had a utility beyond commercial diversification. He believed it had possibilities for enhancing the social welfare of the colony, by providing an opportunity for "Orphans and spurious Children" to be bound as apprentice vintners.[84] Furthermore, because vines grew better in rocky, hilly lands which were ill-suited to tobacco or grain production, humbler families could make greater profits from their poor soil. In a burst of idealism he painted a picture of a utopian Virginia, lifted spiritually and materially by grape culture.

> ...the Scheme is calculated in a singular Manner for the Benefit of the poorer People: The Value of their Plantations will rise almost to that of the richest; large Tracts, at present desolate, will be filled with happy Families.... A small Tract will suffice a large Family; every Person in it will be usefully employed in the easiest and most agreeable of all Kinds of Culture; Provision for several Children will be rendered easier than it is now for a single one; in Process of Time Slaves may be prohibited from working Vineyards; the Business will become honourable; the Poor be secured in plentiful Subsistence; our Numbers, our Riches, our commercial Importance,

> and general Happiness, increased beyond Conception. I will add, that we shall become a more hardy and manly Race of People, when our Constitutions are no longer jaundiced, nor our Juices vitiated by abominable West India Distillations, rendered still more detestable by our own fraudalent Mixtures.(85)

(John Beale Bordley was among those who disagreed with Bolling. He believed it unjust to ask the modest farmer to put his effort into producing luxuries, vulnerable to market conditions, when subsistence was his chief business. He further denied that grapes could be grown on poor soil, and admonished the farmer to "look about for a plant of more value, at least in point of use."[86])

Robert Bolling continued to cultivate grapes until his death. He never achieved the success he hoped for, however. He, like his contemporaries, was plagued with a shortage of labor, unskilled workers, and the disruption caused by the American Revolution. Because of these factors, wrote his son, plus the unpredictability of the weather, "all his fond anticipations...were suddenly frustrated; all his hopes and prospects blasted...."[87]

Cultivation of Grapes

Grape cultivation was not easy. Even the hardiest strains required some pampering, and continual attention from a knowledgeble viticulturalist. At least one expert did not mince words when admonishing farmers to be prepared to care for their vineyards.

> ...it must be tended by a careful and steady hand. It will not bear to be slighted, or neglected. If you do not manure the ground and keep it in good heart, your Vine will bear no fruit; if you neglect to cultivate the Soil, and keep it clean, your fruit will be knotty, and starved, and will not come to maturity; if you suffer the stakes or props to fall, and your Vine to sprawl on the ground, the fruit will not ripen, but remain austere, and you will not make good Wine. Wine is too rich a juice to be made from a barren soil, or by lazy idle slovens. Such men should never undertake a Vineyard. They not only hurt themselves, and bring the thing with discredit, but hinder others, who are fit for the undertaking, from making the attempt.(88)

Because vines were tempermental, they were, in a sense, ill-suited to the style of the Chesapeake planter, who preferred plants and animals which virtually cared for themselves, leaving him free to tend his demanding tobacco crop.

For the serious viticulturalist the first important step was to select a site for a vineyard. The preferred situation faced south or southeast, and could generally be characterized as "high and dry." Though wild grapes flourished in the river bottoms of the region, farmers were cautioned against starting a vineyard in such areas; grapes would mature but not ripen there, and could be greatly improved by exposure to the sun. Locations with spongy soil or natural springs were not appropriate.[89] Soil conditions also had to be taken consideration. The Chesapeake area's "hot dry sand ruined by tobacco" was, for the most part, unacceptable; what was wanted was a light mixture of mould and sand. Gravelly or stony ground was appropriate providing it had good drainage. One author believed that some of the worn tobacco lands could be made suitable for grape culture by spreading mud from creeks or rivers over them. He advised using slaves to haul and spread the mud in the spring, then allowing it to lay on the ground for several seasons before mixing it with the soil.[90] All authors stressed the importance of an open, airy site.

Most farmers chose to enclose their vineyards as a protection against animal and human poachers. Andre

Estave, for example, made a special plea to the Virginia General Assembly for money to buy wood to fence his vineyard.[91] Some further embellished their property by terracing, a process which retarded erosion, and provided good drainage on hillsides. It also allowed for the vines to get maximum exposure to the sun.[92]

With the site selected, the planter's next problem was to acquire seeds, roots, or slips of the grapes he desired. Native varieties seemed easy to come by; the aspiring viticulturalist had only to stroll into the woods and take cuttings or seeds from the most productive vine. Caution was needed in this, however, for many species of North American grape required both male and female plants to produce fruit, and it was possible to determine the gender only during spring flowering. Both male and female plants had to be acquired, with a concentration of the fruit-bearing female. The same problem applied to using seeds for propagation, for it was uncertain whether the vine grown from seed would be male or female. Seed grown plants also carried the further complication of hybridization. All of the native varieties cross-bred freely, and thus produced seeds that were not true to

type. One expert felt that this was such a handicap that seeds ought to be disregarded completely except for experimental purposes. "If we raise our vines from seeds we are never sure to have the same kind," wrote C.S. Rafinesque, " a variety will often spring up: besides half of those raised are sterile or male vines with us...." He also maintained that seedling grapes took up to fifteen years to bear, whereas cuttings would produce fruit in three or four years.[93] Robert Bolling disagreed with this advice, saying that he had "known vines, raised from seeds to grow to the length of three feet the first year," and that with proper pruning they would bear fruit in the third or fourth year.[94]

One reason that grapes were frequently propagated from seed was the ease of transport. Roots or slips of vines sent from abroad or between colonies ran the same risks that all introduced plant materials did: damage from excessive damp or drought, destruction by vermin, or loss by careless shippers. Seeds also were subject to these variables, but to a lesser degree. Thus John Lawson requested a friend to send "ye grape seed" to America, and John Custis carefully planted the grape pips sent to him from Peter Collinson.[95] Planters who

chose to risk the shipment of slips often acquired their vines through their tobacco factors; Washington, for example, requested in 1768 that he be sent "a few setts of cuttings of the Maderia Grape (that kind I mean of which the Wine is made)...."[96] Charles Carroll also used his factor to acquire vines, but, like so many others who ordered plants from abroad, found that they "arrived too far Gone to Strike out Fresh Root."[97] William Byrd also faced some disappointment when he received his shipment. In 1727 he wrote

> They were kept so long, on board, the ship, that they were all sprouted, in the Box, however, I observed your directions, & they are almost all growing, at this time, and in a flourishing condition. But the strings, with which the several bundles, were tyed together, were rotten, so that it was impossible, to distinguish the several sorts.(98)

Occasionally plants were acquired in other ways. Horticultural enthusiasts regularly exchanged seeds and cuttings--Washington wrote to John Marsden Pintard in 1785, for example, asking him to relay "a few slips of the Vines of your best eating grape...."[99] Robert Bolling made a public request for samples of late-ripening varieties to be sent to him.[100] Theodorick

Bland, in a bold mood, planted some raisins received from Europe, with surprisingly good results.[101] And, by the early 1770s, a few nurseries carried grape vines. William Prince and Company was one which offered an unidentified variety at six shillings apiece.[102]

If plants were grown from seed, it was necessary for them to be left in a nursery for at least one year before cutting slips to plant. The cuttings were to be chosen from the most "teeming" part of the vine--defined by one horticulturalist as an area that was short-jointed and particularly flourishing the last season. Slips were to be cut near the wood, especially if taken from older vines. September was considered the best time for cutting, and at least one author recommended planting the slips immediately.[103] Edward Antill, a Pennsylvanian who made an in-depth study of viticulture around the time of the Revolution, thought that the slips should be kept over the winter for spring planting. He recommended preserving them by setting them out in a trench five or six inches deep, bunched together, with the butt ends down. Earth was then pressed firmly around them, sticks were set up to

support the scions, and straw or hay layed over the ground. Labelling was an important part of this operation.[104] In March the plants wewre readied to be set out in the vineyard, which was to be well plowed and harrowed. ("You will find," wrote Antill, "that, the lighter and more open and loose the soil of a Vineyard is kept, the more the Vines will flourish, and the more fruitful they will prove.")[105] The cuttings were trimed to twelve inches, soaked in "rich dung water", then put into a hole deep enough to cover the butt, and leave only one "eye" or joint above ground. Each plant was to be set eight feet each way from neighboring vines.[106]

Another author agreed with Antill that the scions benefitted from soaking in water, but believed the plants did better if planted immediately after cutting in the fall. He thought that deep trenches should be dug, then partially filled with rocks to encourage drainage. The vines were to be spaced evenly and the trenches filled with rich mould and trod down firmly.[107] Still another expert thought that the cuttings should be set out in a ditch one and one half feet deep, each ditch three or four feet apart. After trimming the cuttings, and rubbing any new growth, or

"suckers", from the roots, they were planted out and covered with six inches of dirt, so that three eyes were left above ground. The trench was not to be completely filled until the following year.[108]

Clearly there was no single acceptable method for planting vines. Washington planted grape cuttings in four different months of the year, but unfortunately did not record the success or failure of his experiments.[109] Robert Bolling set his vines at five foot intervals in rows spaced seven feet apart--distances unlike any recommended in contemporary manuals.[110] Perhaps the best first-hand account of planting grape vines comes from Thomas Jefferson, who in April 1774 recorded the following in his Garden Book.

> A trench 4.f. deep and 4.f. wide was dug. at the bottom were put small green bushes, and on them a thin of the surface. the cuttings which were from 3 1/2 to 6.f. long, and which had been hitherto buried in the earth, were then produced, about 18.I. of their butts were dipt into a thick paste made of cowdung and water and then planted in the bottom, the Raisins 3.f. apart the rest about 2.f. having a stick stuck by each to which it was bound with bear grass in order to support it while the earth should be drawn in. the earth was then thrown in, the mould first, and after-wards the

> other earth in the same order in which it was dug, leaving the bottom clay for the last. the earth was thrown in very loose & care was taken to avoid trampling in it. the trench was not quite filled, but left somewhat hollowing to receive & retain the water, & the superfluous earth was left on each side without the trench. then the supporting sticks were drawn out and would have served for the other rows had the plantation been to be continued. in such a case, the rows are to be 4 f. apart, so that in fact the whole surface is taken up to the depth of 4.f. the best way of doing it is to dig every other trench, and leave the earth which is thrown out exposed for a twelve month. then the vines may be planted at any time from the middle of November to the first week in April. afterwards dig the other alternate trenches, and leave the earth of these also exposed for a twelvemonth. when the latter trenches are planted, leave the superfluous earth in ridges between the rows of vines till by the subsidence of the earth it becomes necessary to pull it into the trenches. if any of your grapes turn out illy, cut off the vine & ingraft another on the stock. an acre in vines where they are 2 1/2 f apart in the row will admit 4316 in all.(111)

Among the controversies over vine culture was the question of whether or not to stake the plants. In Europe grape vines were frequently trimmed in their early years of growth to produce a strong stump, or "foot", which supported the fruitful tendrils. Both

from tradition, and disinclination to bother much with vines, the early American farmer seems to also have followed this practice. John Lawson noted that his own experiments with growing vines in this manner were unsuccessful, that the "Vine trimm'd to a Stump, as before spoken of, has born a poor Crop for one Year or two; and by its spieling, after cutting, emaciated, and in three or four years; died."[112] Yet another author boasted that grapes flourished without external support in the Chesapeake region.[113] Those that favored staking often recommended training the vines on nearby trees, so that they could grow as they did in the wild. In Virginia, John Bonoeil wrote, "the Inhabitants...might spare the said Vines, and plant them by such Trees or boughs...and tye the Vines upon them, to prop them up, as is said, for they would bring forth much fruit the very first yeare, which would be as much time gayned, and labour spared."[114] Landon Carter tried planting peach trees in his vineyards to support the grapes, but found that they drained important nourishment from the vines he therefore had them removed.[115] Edward Antill, a staunch suporter of the need for stakes, gave precise instructions for

their use. Stakes were to be six feet long, and cut from well-seasoned pieces of red locust, mullberry, or chestnut. Both ends were to be dipped in tar before setting in the ground to discourage vermin and rotting. So important did he believe them to be that he thought they should be put in the ground before planting began. The vines were to be tied to them with soft cloths.[116]

After planting the vines were left to grow for the summer. In September they were cut back, with a careful hand, to one good bud each. Most authors also recommended that the soil around the trunk be moved, and any suckers springing up be rubbed off. They were then mulched with straw or hay for the winter.[117] The second spring the best shoots were to be chosen--the number recommended by horticulturalists varied from two to eight--and all others rubbed off. Antill suggested that another stake be added to support the vine at this time. Weeding, watering, and loosening the soil were the only cultivation required in the second year. In the autumn, as soon as the leaves withered, they were to be pruned again--"drastically" as before--so that only one bud appeared on each branch. The "day" or

lateral roots were also to be cut back at this time to prevent the vine from producing fruit too young. They were then mulched for the winter. To retard damage by frost, Antill advised covering the branches as well as the roots with straw.[118]

The third spring was a crucial time for vines. Some viticulturalists believed that they should be allowed to bear fruit that year, but most recommended allowing the wood to develop for a final season. The trailing vines were to grow only to around five feet, then the ends were nipped back. Weeding, watering, and stirring the soil remained crucial. To prevent erosion one author suggested laying broad flat stones at the base of the vines. Pruning took place later the third year--sometimes as late as February--and all of the branches but four were eliminated. Two or three buds were to be left on each branch. Suckers were rubbed off and the branches trained up on the stakes. Since mature wood was now being cut, Antill suggested searing the wound left from pruning with a hot iron to prevent bleeding.[119]

The mature vines also required a precise pattern of cultivation; as Edward Antill wrote, "The management

of the Vine in the bearing state calls for a close and particular attention."[120] In addition to pruning each fall, the vines required cultivation or "dressing" three times a year. Several writers suggested March, May, and August for this work, though William Faris, who had grapes in his Annapolis garden, dressed his vines for the first time in April.[121] The earliest dressing consisted of rubbing off all of the shoots sent up from the roots, and nipping off irregular growth from the top of the plants; the soil was tilled six to nine inches deep around the roots, removing weeds and turning them under. Any additional suckers were also removed at this time. In August or September the vines were pruned and the soil again tilled.[122] In addition, the vineyard had to be tilled and manured every three years. Antill stated that this could be done rotationally, a third at a time, by farmers who lacked fertilizer enough to nourish the entire vineyard at once. The best manures were fowl dung, soap ashes, charcoal, or creek mud, if they were free from grass seed.[123]

After the third season the planter could begin to harvest grapes. Several tricks could be used to ripen the fruit more perfectly. Among those suggested by

John Lawson were twisting the bunches continually to ripen them evenly, and plucking off leaves to allow greater exposure to the sun.[124] The grapes were to be gathered on a fair day, as quickly as possible when fully ripe. A sharp knife or hook was used to cut the bunches, and it was a job requiring some skill. Wrote John Bonoeil: "you must cut the branches very even, and very neare to the old wood, to the end that the Vine growing may cover the cut."[125] Antill also stressed the importance of proper harvesting. To insure a sober, prudent labor force, he wrote, he "would advise the gathering of them to be directed by some grave, discreet person...."[126]

In English gardens grapes were generally grown against walls to maximize their exposure to warmth and sunlight. This treatment was generally not used in America, save in the very formal gardens of some wealthy planters. There is, in fact, evidence that espalied vines did poorly in the Chesapeake region. In 1729 William Byrd wrote that "our Summers are long enough, to ripen any of the Kinds, in the vineyard, without the help of walls, which would rather bake, than ripen them.[127] Those few who did choose to grow

grapes in this manner found that the cultivation differed little from that of vineyard fruits, save in pruning. In the first year the cultivation was identical. The second year a long stake was driven into the ground next to the vine, and all but two promising shoots were cut away. Those shoots were trained as vertically as possible, and nipped back when they reached a length of five feet. All other suckers and shoots were rubbed off. In the fall the branches were cut back, leaving four buds on each.

Espaliers were set up the third year, the bottom rung three feet from the ground or just below the lower most bud. As the shoots formed on the buds they were trained on the rails above. Their ends were, again, nipped at five feet. In the fall any lateral branches were cut away and the four branches from the original buds cut down to two. All new growth was then confined within the frame, and restricted to the four main branches. Cultivation of the soil was similar to that for vineyards.[128]

Just as vineyards required workers with specialized knowledge, so they required some specialized equipment. Chief among these was a knife

for harvesting and pruning, usually an exceedingly sharp, hooked instrument, "in such a forme," as one author described it "as the shoemakers knife."[129] In addition, Antill recommended that the viticulturalist have baskets for gathering the grapes, a mash vat with a false bottom full of holes, and a receiving vat for crushing the grapes, a dipper, large funnel, pails, and a screw press with a wicker frame and hair bag. He advised that knives be kept sharp and other implements scrupulously clean. Harrows, spades, and hoes were standard items required in planting and cultivation.[130]

Despite careful cultivation all grape vines were very vulnerable to extremes of weather and the ravages of insects and other pests. Climate was one of the most serious problems faced by early American viticulturalists. Vines regularly suffered from late frosts; William Byrd complained of this in 1736, and the notorious frost of May 4, 1774, killed nearly every vine in Virginia.[131] Wet weather also spoiled many grape harvests, as Landon Carter found. On July 2, 1766 he wrote, that "This is the 3rd year my grapes have been all destroyed by foggs or wet weather, after they had been well set for a great vintage."[132] Too little rain caused equal damage--John Custis, for

example, stated that grapes did not flourish in the hot dry country.[133] Early experiments in part exacerbated the problems with weather by planting European varieties which lacked enough hardiness for the extremes of the Chesapeake climate, but native grapes also were vulnerable to unseasonable weather. Some, including William Byrd, thought the solution to this was to plant vineyards in the seclusion of mountain valleys where they would be afforded some protection. John Mitchell agreed; indeed he vigorously denounced the tidewater areas of Maryland and Virginia for vine-growing. "A vine is there drowned with rains, and killed by damps, as we have often found," he stated; "which renders the juice thin and watery, and the wine small and aigre...."[134] Except for carefully selecting a site, farmers had few defenses against the weather. About the best they could do was to make smudges of dry dung when there was a threat of frost.[135]

Animals also caused destruction to the vines. Dogs, foxes, wasps, and birds were all attracted to the ripe fruit, as were human beings. There were few remedies for their looting save a vigilant watch on the vineyard. Antill prescribed pulling down the bird nests from nearby areas, and shooing them away from the

ripe fruit. Wasps could be lured away by phials of sugar water placed on other parts of the farm. Against human destruction Antill had sterner measures in mind. Boys who would not stay behind a good high fence could best be deterred, he wrote, by "the Vignerons appearing now and then with a gun in his hand walking about the Vineyard in an evening, particularly when there are idle people without...."[136] Vineyards had also to be guarded from cows and other stock, which liked to eat the tasty young shoots of the grape vines.

Insect pests were not so easily deterred. The most destructive of these was the phyloxerra, or root louse, called in colonial times the pismire or "vine freeter". This small insect attacked the root of the plant, which then withered and died. American species had formed a resistance to the tiny vermin, but the vinifera strains succumbed quickly to their ravages. Although the root louse was not positively identified until well into the nineteenth century, colonial viticulturalists were aware of it and tried to retard its progress by application of cow dung or ass grease to the roots.[137] Not until planters learned to graft European vines onto native root stock were the vinifera vines able to tolerate American conditions.[138]

Young vines also suffered from destruction by cut worms, and caterpillars sometimes settled on the leaves, destroying them with their voracious appetites. Daubing the roots with tar and lard was the remedy for the former, while caterpillars were repelled by the blood of a male goat, or the fat of an ass or bear. If this did not work, they were removed one by one and crushed.[139]

In addition, fungus was a problem for grape growers. A "blight", thought to be the result of too much rain, caused the leaves to spot and eventually drop off. There was no cure for this but to cut off the damaged parts, and hope the disease did not spread. The "yellows", which resulted in the leaves dying and falling off, was believed to be caused by over-bearing, or by bad fertilizer, but was most likely another fungus. Colonial farmers fought this by pruning and manuring their plants.[140]

Uses of the Vineyard Produce

One reason promoters of the American colonies highlighted the opportunities for viticulture was that grapes had so many uses. One early writer listed nearly two dozen culinary uses for the grape, including

grape butter, vinegar, raisins, grape sugar, and cordials. In addition, he noted that the vines themselves yielded important by-products. The bark could be used for making rope, baskets, or straps, and old wood was valued for carpentry. Even the leaves could be used for fertilizier or fodder, and in some countries they were picked fresh for cooking.[141]

Table grapes do not seem to have been the focus of American viticultural efforts. Still, they occasionally showed up in gardens: William Faris grew them in Annapolis; Charles Carroll ordered both black and white species; George Washington tried raising Malaga, and Portugese varieties.[142] In 1796 Amelia Simmons, an early expert on American cooking, wrote that dessert grapes were grown in every state. "The Madeira, Lisbon and Malaga Grapes are cultivated in gardens in this country, and are a rich treat or desert." Simmons clearly knew more about cooking than cultivating, however, for she continued, "Trifling attention only is necessary for their ample growth."[143] She did not list any recipes for fresh grapes in her book, though a number of cakes and cookies contained raisins. A later writer indicated, however, that grapes were indeed an important culinary item. "In

America, we use for pies and tarts almost all the kinds except the better sort and even the smallest Chicken and Pidgeon Grapes," observed C.S. Rafinesque, "they improve and enlarge by cooking. Grape Butter is made like Apple Butter, by boiling the must or juice of the Grapes to the consistency of honey...."[144]

Raisins were an important by-product of viticulture, and one which several people thought had commercial possibilities. Robert Bolling recommended that "fine early grapes" be used for them".[145] Edward Antill thought that Malaga or Red Frontinac grapes were the best varieties for raisins. To dry them correctly he instructed the viticulturalist to build a platform of staves and split reeds or willows, two feet off of the ground. The surface of this was to be covered with straw. The grapes (preferably gathered in the wane of the moon) were picked over so that no rotten or immature fruits were left in the bunches. They were then dipped in a strong solution of lye and placed on the platform so that no bunch touched an other. Each day they were turned, and they were covered at night or in wet weather. After they were completely dry they were placed in clay jars, and stopped tightly with a mixture of clay and horse dung.[146]

The interest most colonists had in viticulture, however, was overwhelmingly related to wine production. Even the most dedicated used a simple process for winemaking, which was similar to that used for cider or mobby. In the several sets of directions available the process differs little. (See Appendix). Grapes were to be gathered on a clear, dry day, then picked over to eliminate rotten or immature berries. Bunches, twigs and all, were placed in a large vat with one or more holes, which were fitted with filters made of bundles of grape twigs. The grapes were then crushed with the (preferably clean) feet, and the juice allowed to drain into a holding vat below. Once this operation was completed the juice was covered with a cloth, and left to ferment one to six days, the length depending on the weather, variety of grape, and taste of the winemaker. Some experts thought greèner grapes should be added at this stage to make it "strong and noble," others recommended the addition of flavorings such as myrtle berries, oranges, or grape blossoms, to perfume and flavor the wine. After this fermentation the wine was placed in casks with the bung hole left open so that the lees would work their way out as the final fermentation took place. After three or four days,

when fermentation was complete, the wine was drawn off to still another cask and tightly sealed. Some authors suggested adding old wine or brandy to red wine at this stage to improve its flavor.[147]

In 1777 Landon Carter, after several years of experimentation, made wine which pleased him greatly. His account of its production shows the variations on the standard formula which a dedicated agriculturalist might make.

> By getting my grapes about at my Fork quarter, Mangorike, and School house creek I have made better than 50 gallons of a pleasant wine as yet. I erected the screws of my hot press into a wine press, Picked off all the berries, bruised them first and then squeezed out their juices. I was three days gathering the grapes. I put them into Mobby tubs, taking care every now and then to put sticks across to prevent their bruising so that they ripened a great deal. Note: every bushel of berries yielded better than 5 gallons of Juice. After pressing one turn I took about half the Juice and about half a bushel of the hulls without seed, and about as much of the clean naked bunches, and boiled them for a time in order to fix a reddish Colour which would not seperate by keeping. As I was served by some wine I once before made, after this I turned in better than one pint of good honey for every 5 gallons of Juice for it to feed upon, and Prevented any acidity; and to give it strength, I

> added 6 quarts of fine brandy. I then set it in a cool place to ferment about 4 days; not caring to trust it longer, I allayed the fermentation by a spoonful of clear oil, and bunged it close, to fine down, trying it every now and then, to see how it seperated its argola tartar. At last I defricated about 3/4 of a wine glass through a paper cup; and I find its Colour seemingly fixed and tastes good and lively. As soon as it fines in the cask, I shall bottle, tye down the Corks, and wax them; and then lay the bottles leaning buryed 4 inches in dry sand, According to Miller's dictionary and hope to get a pleasant liquor. I do know when my daughter Beverley was marryed I produced some, admired by everybody, Particularly old Mr. Hamilton, a noted good Judge; and a Tucker from Norfolk. But it lost i[t]s Colour some months after, as was observed above, for want of boiling some hulls and bunches, tying down the Corks, and indeed waxing them. (148)

The colonists were inexperienced winemakers and their concoctions were frequently less than perfect. Experts gave advice on the correction of many faulty beverages, among them acid, musty, or "ropy" wine. For a vintage with too many lees, winemakers were advised to reduce it by two-thirds of its original volume, then to every thirty gallons add the whites of six eggs, which would attract the sediment and bring it to the top. Wine spoiled by the summer heat could be

corrected by adding barley and pan salt, or adding almonds or fennel seed. Musty wine was supposedly remedied by the addition of salty cow's milk; acid wine could be cured by placing a lump of lard, tied up in a linen cloth, inside the cask.[149]

Wine was not only a beverage--that "cheereer of Gods and men" as William Byrd called it--but a valued medicinal agent.[150] By itself it was used to relax--or stimulate--the patient. It was also a vehicle for making medicines palatable, and for dissolving powdered herbs. Landon Carter, who was something of an amateur apothecary, grew grapes in part of offset the heavy expense of buying wine for medicines. "I never had so much sickness in my family as this year," he wrote in 1764, "and the expense in such times is very great in Wine to gruels, Wine to drinks, and Wine to Vomits and bitters."[151] Among the remedies he used was Chamomile dissolved in wine to calm an hysterical female, and opium in wine to cure a slave of disease that resembled smallpox.[152] Members of the Maryland Assembly prescribed "two bottles of wine of this Country grape" for a person suffering from ulcerations.[153] In 1760 the Virginia Almanack carried "A Receipt to make

Physick as pleasant as a Dish of Chocolate" which called for a copious amount of wine, and a few years later they recommended the following remedy for coughs and asthma.

> Take of Madeira, or good Mountain Wine, two Quarts, Gun Olibanum in Tears powdered, Balsams of Giliad and Tolic, of each two Ounces; let them stand near the Fire for three or four Days, then strain it off, and mix there with of Narbonne Honey four Ounces, Extract of Canadian Maidenhair eight Ounces; mix well together the Dose; two Teaspoonfuls to be taken once in four Hours, in Coltsfoot Tea, or fair Water sweetened with Capillare.(154)

Vinegar was yet another product of the grape. Thomas Jefferson, Landon Carter and St. Jean de Crevecoeur all made vinegar from grapes, but they left few details about the process. Jefferson noted in 1782 that seventeen bushels of winter grapes, stems excluded, made forty gallons of vinegar "of the first running."[155] He added water to increase his yield. Whatever process was used was apparently not always foolproof. Landon Carter thought the way was to expose the grape juice to sun in the summer and cold in the winter, though he admitted, "I have done so and never could turn it to Vinegar."[156] Crevecoeur had better

luck. He mentioned the abundance of wild grapes around his property, but said, "All the use I make of it, and perhaps it is all it is good for, (is to make) vinegar, which is exceedingly strong, indeed."[157]

All of these products were almost entirely used at home. Despite the constant rhetoric of those who wished to have viticulture rival the tobacco industry in the Chesapeake area, commercial vineyards did not really appear until the early nineteenth century. The influx of skilled German immigrants, and experiments with local grapes and hybrid varieties, then stimulated the industry.[158] Farmers markets sometimes offered grapes, and Peter Kalm noted in 1748 that the "country people gather them in great quantities and sell them in town."[159] But no listing of major exports of the colonial period included grapes, wine, vinegar, or any other product of the vine. Until hardy strains were developed, and agricultural diversification became crucial, viticulture remained merely a hobby for the privileged or interested few.[160]

APPENDIX I

The following Directions for making WINE, of Virginia Grapes, is here printed, to remind People of the Advantages they may make of them.(1)

Begin to gather Grapes, (the ripest first) from September to the last of October, and having clear'd them of Spider-Webs and dead leaves, put them into a large Molasses or Rum Hogshead; after having wash'd it well, and knock'd one Head out, fix it upon the other Head, on a Stand or Block, in the Cellar, if you have any, if not, in the warmest Part of the House, about 2 Feet from the Ground; as the Grapes sink put up more, for 3 or 4 Days, after which get into the Hogshead bare-legg'd, and tread them down, as you do when you hand-pack Tobacco, until the Juice works up about your Legs, which will be in less than Half an Hour; then get out, and turn the Bottom ones up, and tread them again a Quarter of an Hour; this will be sufficient to get out the good Juice; more pressing would burst the unripe Fruit, and give it an ill Taste: This done cover the Hogshead close with a thick Blanket, and if you have no Cellar, and the Weather proves cold, with Two.

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1. The Virginia Almanack For the Year of our Lord God 1753. Hunter. Williamsburg.

In this Manner you must let it take its first Ferment, for 4 or 5 Days it will work furiously; when the Ferment abates, which you will know by its making less Noise, make a Spoil-Hole within 6 Inches of the Bottom, and twice a Day draw some in a Glass. When it looks as clear as Rock-Water, draw if off into a clean, rather than new Cask, proportioning it to the Contents of the Hogshead or Wine *Vat; that is, if the Hogshead holds 20 Bushels of Grapes, Stems and all, the Cask must at least hold 20 Gallons, for they yeild a Gallon per Bushel. Your Juice or #Must, thus drawn from the Vat, proceed to the second Ferment.

You must reserve in Juggs or Bottles, one Gallon, or five Quarts of the Must, to every 20 Gallons you have to work; which you will use according to the following Directions.

Place your Cask, which must be chock full, with the Bung up, and open twice every Day, Morning and Night; feed your Cask with the reserved Must; two Spoonfuls at a Time will suffice, clearing the Bung

*Vat or satt, a frame for the Vessel in which you tread the Grapes, and in which the Must takes its first Ferment.

#Must is a Name for the Juice of the Vine, before it is fermented, afterwards it is called Wine.

after you feed it, with your Finger or a Spoon, of the Grape-Stones, and other Filth which the Ferment will throw up; you must continue feeding it thus, until Christmas, when you may bung it up; and it will be fit for Use, or to be rack'd into clean Casks or Bottles, by February.

N.B. Gather the Grapes after the Dew is off, and in all dry Seasons: Let not the Children come at the Must, it will scour them severely. A small Gang of Negroes, with a Couple that can climb, if Grapes are plenty, will gather twenty Bushels per Day. If you make Wine for Sale, or to go beyond Sea, one Quarter Part must be distill'd and the Brandy put into the Three Quarters remaining. One Bushel of Grapes, heap Measure, as you gather them from the Vine, will make at least a Gallon of Wine, if good, five Quarts.

These Directions are not designed for those who are skill'd in making Wine, but for the poor Planters.

Footnotes

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[3] John Ferdinand Dalziel Smyth, A Tour in the United States of America (New York: New York Times and Aron Press, 1968), p. 149.

[4] See Peter Kalm, Peter Kalm's Travels in North America, edited by Adolph B. Benson (New York: Dover Publications, 1966), I, p. 67; St. Jean de Crevecoeur, Sketches of Eighteenth Century America, edited by Henri L. Bourdin, Ralph H. Gabriel, and Stanley T. Williams (New York: Benjamin Blom, 1972), pp. 135-136; and Benjamin Latrobe, The Virginia Journals of Benjamin Henry Latrobe, edited by Edward C. Carter, III (New Haven: Yale University Press, 1977), p. 85.

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[6] Robert Beverely, History of Virginia in four parts (London: 1703), p. 116.

[7] Ibid., pp. 116-117.

[8] Lawson, New Voyage, p. 108.

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[10] John Mitchell, The Present State of Great Britain and North America....(London: 1767), p. 269n.

[11] E. C. Branchi, ed., "Memoirs of the Life and Voyage of Doctor Philip Mazzei", William and Mary Quarterly; Series 2, Vol. 9, p. 170.

12

William Byrd, William Byrd's Natural History of Virginia, translated and edited by Richard Croom Beatty and William J. Mulley (Richmond: The Dietz Press, 1940), pp. 32-33.

13

Rafinesque included the following in his list of Chesapeake area grapes: Vitis sulva, a small blueish grape found on rocky riverbanks and called the Red grape in Virginia; V. digitata, the "Chicken grape", with small, black berries; V. Lyemalis, called the Winter grape, a blue-black fruit which ripened after frost; V. latiflora, the fox grape, which abounded in woods and hedges, and produced a large grape with a pulpy flesh and foxy taste; V. labruscoides, another variety of fox grape, with a sweet, juicy, musky fruit, often called the Early grape; V. canina, an inedible variety, with large tough purple berries; V. luteola, a grape which appeared in several colors, large, tough and foxy; V. blanda, and excellent wine and table grape with a thin skin and musky taste - its name, the Bland grape, probably stemmed from the work of Theodorick Bland in cultivating this grape, rather than from its taste; V. demidiata, the Orive'sburg grape, a sweet grape with white, black, and purple varieties; V. montana, a small black berry growing in the western Mountains; V. columbina, the Pigeon grape, a sweet black grape devoured in great quantities by wild birds; V. cordifolia, the frost grape, another of the fox grapes, this one ripening after October; V. riparia, a grape growing on riverbanks, highly scented flowers and greenish or purplish fruit; V. vulpina, the Muscadine grape, including the Scuppernong, famed for its wine, which produced a large fruit with thick skin, full of sweet and musky juice; and V. virginiana, an oval grape of middle size. C.S. Rafinesque, American Manual of the Grape Vine (Philadelphia: privately printed, 1830), pp. 5-28.

14

See Arthur B. Massey, "Native Grapes", Bulletin of the Virginia Polytechnic Institute, Vol. 38, pp. 3-20.

15

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28 Louis de Saint Pierre, The Art of Planting and Cultivating the Vine....(London: 1772), pp. XXII-XXIII.

[29] Kalm, Travels, I, p. 67.

[30] Crevecouer, Sketches, pp. 134-135.

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Colonial American Food Legumes

Seed Saving Techniques of the National Colonial Farm

European Leaf Vegetables in Colonial America

The American Chestnut (a collection of articles appearing in the Almanack)

Amerinds of the National Colonial Farm Region: A Collection of Five Articles

A Companion Planting Dictionary

Herbs of the National Colonial Farm

Four Seasons on a Colonial Potomac Plantation (the National Colonial Farm "Picture Book")

that it was because labor was so scarce.[29] St. Jean de Crevecoeur, an enthusiast for self-sufficiency on the farm, admitted that he felt guilty about not making his own wine since his river bottom land annually produced enough grapes to supply his household with that article. But, he concluded, "labour is so dear, and I am so inexpert that I am discouraged from undertaking any new schemes."[30] John Beale Bordley, a pragmatic agriculturalist from Maryland, thought the chronic colonial labor shortage was in fact an excellent reason for avoiding luxury crops such as grapes, which distracted the farmer from producing essentials such as grain and livestock.[31] As tobacco became an increasingly dominant crop in the Chesapeake region, to the point that it was used as currency, and given preference by merchants in the colonial trade, planters, were correspondently reluctant to expend their energies on producing anything else. As a consequence, despite the natural abundance of the grapes, and their ease of propagation, they were utilizied only as a wild fruit; as Robert Beverely observed, "very few have them at all in their Gardens, much less endeavor to improve them by cutting or laying."[32] Another, more critical, visitor, also