

Did the British invent Champagne?

Although it's a nice thought, I don't think that the British can really claim to have invented a place in France, but there *is* evidence to suggest that they played a significant part in the development of a sparkling wine named after it. Intrigued?

The story starts, rather strangely, with the King, his navy and the need for oak. It took a large number of oak trees to find enough timber of the right size and shape (shape very important – all those ribs and curved bits and pieces) to build a large warship and King James I, or more especially one of his admirals, Sir Robert Mansel¹ (1573–1656), was worried that England was running out of them. The main problem was that charcoal burners, a pretty indiscriminate bunch of folk, were taking all the oaks before the King's shipbuilders and foresters could get to them. Charcoal was in big demand, especially where high temperatures were needed such as in metal working and – this is where we start getting on to wine – for glass production. On 23 May 1615 the King issued Royal Proclamation No 42 which banned the use of charcoal in both glassmaking and iron smelting, forcing the iron and glass-makers to start experimenting with other fuels, namely coal and oil shale. Mansel, who apparently was in league with the King when it came to selling oak to the Navy at double the usual price, then became interested in glass production himself and between 1618 and 1622, Mansell, in conjunction with fellow Welshman James Howell (1594-1666) sought out foreign glassmakers and experimented with two different fuels: oil shale at Kimmeridge, Dorset and coal in the Forest of Dean. In secret, Mansel and Howell perfected strong bottle glass and in 1623 Mansel was granted a hotly-contested Royal Patent giving him a monopoly over all coal-fired glassware.

Mansel, a man of many parts (Treasurer of the Navy, MP for King's Lynn, Carmarthen, Glamorgan and Lostwithiel, and industrialist), was instrumental in setting up glass-works in a number of places – London, the Isle of Purbeck, Milford Haven, the Trent Valley and Newcastle-on-Tyne) – which used coal instead of charcoal for heating the furnaces. This meant that the glass coming from these furnaces was significantly stronger due to the much higher combustion temperatures. Glassmakers also started adding iron and manganese ores to the raw materials which, although initially done for purely cosmetic purposes, also had the side effect of making the glass even stronger.

What all this meant was that our glass bottles were in all respects better than those of the French; they were far stronger and more able to withstand the considerable forces generated by the secondary fermentation. One has to remember that in those days all wine was shipped to Britain in wooden casks and the actual bottling was carried out by vintners in the great wine-trade centres such as London, Bristol and Leith – a practice which lasted until relatively recently for many Clarets, Burgundies and Ports. Vintners, as well as innkeepers who also did much of the bottling for their own establishments, would routinely bottle 'young wines' (wines from the previous vintage) which would have sometimes still contained unfermented sugars (winters were colder then and natural yeasts stopped working when wineries got too cold) and – more importantly – some viable yeast cells. As the spring turned to summer and the vintner's and innkeeper's cellars warmed up, some of those bottles would have started re-fermenting and of course, given strong bottles and decent corks, the CO₂ produced would have added a little sparkle to the wine. Obviously some customers liked this and asked for more. It didn't take long for those involved to work out that if they added a little extra sugar to almost any wine, used strong bottles and tied the corks on with string, the sparkling effect could be achieved on demand!



James Crowden, author of *Ciderland* in a talk given at the Royal Society on 10 October 2008 entitled *Sparkling Cider and the Evolution of the Méthode Champenoise* said that sparkling cider was a well known product in the 1600s and between 1628 and 1632, Lord Scudamore (later to be appointed Charles 1st's ambassador to France) experimented with *bottles, corks cordage etc and a new lock for the sydar [sic] house door*. He was helped in his experiments by Sir Kenelm Digby (1603-1665) who was described as *a pirate and dilettante, Ornament of All England*. He was also a *keen experimenter with glass, oxygen and carbon dioxide* as well as *a swordsman and keen on duelling*. He – and his wife Venetia on her deathbed – were both painted by Van Dyke (picture on the left). Digby – whose father had been the first of the Gunpowder plotters to be executed – owned an estate in the Forest of Dean and was therefore well positioned to experiment with coal-fired glass production. He is also credited as the first person to use corks to seal bottles and preserve wine for longer periods than had hitherto been possible, as wines with dissolved carbon dioxide in them and sealed in strong bottles with leak-proof corks could last many months longer than wines kept at normal pressures. In 1662 he was credited with the invention of the modern wine bottle and his glass was known by the French as *verre Anglais*. Also in 1662, on 10 November, the Reverend

John Beale (1608-1683) presented a paper at the recently founded Royal Society on cider and mentioned using *a walnut of sugar when*

¹ The name Mansel is sometimes spelt Mansell and even Maunsell.

bottling. This idea had been contained in a book by Ralph Austen (1612-1676) who was the Parliamentarian Proctor of Oxford University and ran a cider works there between 1653 and 1657. Austen's book, *The Treatise on Fruit Trees and Spiritual Use of an Orchard* told how cider might be kept *perfect for a good many years* by keeping the bottles *well stopt with corks, and hard wax melted thereon and boun down with a Packthread* [sic]. In the second edition, published in 1657, an extra quote was inserted into the margin which stated that cider makers should *put into each bottle a lump or two of hard sugar, or sugar bruised*.

Much of this came to light when Tom Stevenson, the well known expert on Champagne and sparkling wines, wrote in his book *Christie's World Encyclopaedia of Champagne and Sparkling Wine* (Absolute Press 2000) that he had discovered what he believed to be the first mention of a technique to make wine (that is wine made from grapes and not cider) sparkling *on purpose*. A paper, written by a Dr Christopher Merrett² (sometimes spelt Merret) was presented to the newly formed Royal Society on 17 December 1662 and stated that: *our wine coopers of recent times use vast quantities of sugar and molasses to all sorts of wine to make them brisk and sparkling*³. In July 1663 two other cider-makers, Sir Paul Neil and Captain Silas Taylor also presented papers to the Royal Society. Neil mentioning using *a nutmeg of sugar* and Taylor described bottling cider and keeping it in cool water which makes it *drink quick and lively, it comes into the glass not pale or troubled, but bright yellow, with a speedy vanishing nittiness*⁴ (as the vintners call it) which evaporates with a sparkling and whizzing noise. All this was some 6 years before Dom Pérignon (widely touted as the 'inventor' of Champagne) arrived at the Abbey of Hautvillars and some 30 years before the French themselves even claim that Champagne was made by the process of secondary fermentation!

In *Vinetum Britannicum, or a Treatise on Cider* by John Worlidge, published in 1676, there is extensive mention of bottles, corks and sugar and the first description of storing bottles horizontally with their necks down in a wooden rack – perhaps the precursor of today's *pupitre*? In *Vinetum Angliæ*, written by "D.S." and published in 1690 and sold by "G. Conyers, at the Gold Ring in Little Britain (Price One Shilling)", mention is made of adding *little lumps of Loaf-sugar* to cider so that *it may the better feed and keep*. "D.S." then continues when describing Perry making, by saying *work it as the Cyder, and put in a few lumps of Loaf Sugar for it to feed on; and being well fined, and drawn off, it will drink brisk, and exceeding pleasant*.

It would appear therefore, that cider makers and vintners in England were well versed and instructed in the art of making sparkling wines some while before Champagne was first described as effervescent – *le vin du diable* – by Madame de Sévigné, a well-known diarist and letter writer, in 1689.

Development of Champagne

The idea that Champagne (and for that matter all other bottle-fermented sparkling wines) were ever anything other than the product we know and love today is hard to believe, but a look back through some old wine books shows otherwise.

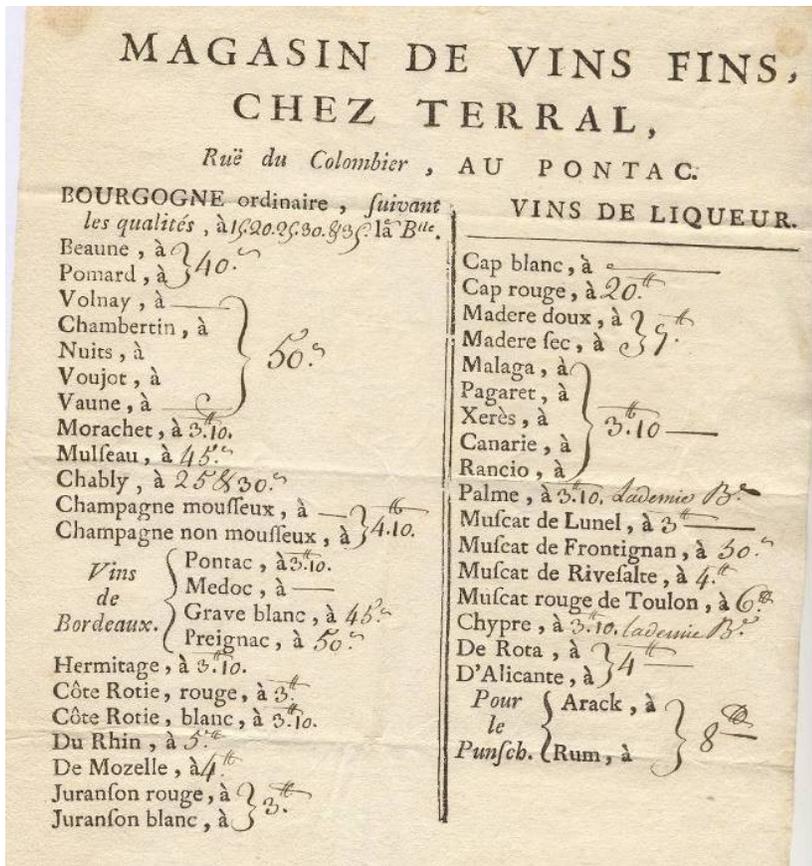
Sir Edward Barry, a Fellow of both the Royal College of Physicians and of the Royal Society, writing in 1775, over 100 years after Merrett, wrote: *for some years the French and English have been particularly fond of the sparkling, frothy Champagns* [sic]. *The former have almost entirely quitted that depraved taste; nor does it now much prevail here*. Barry goes on to warn against drinking wines that have: *active gas, so powerfully injurious to the nervous system* and says that those: *that have indulged themselves too freely, in the use of these Wines, are particularly affected with a tremor in the nerves and spasmodic rheumatic pains*. Hardly the sort of ringing endorsement that the Champenois and their PR departments would like to see talked about today! Barry also quoted his friend Charles Hamilton, owner of the vineyard at Painshill Place, who said about his winemaking techniques: *the only art I ever used was putting three pounds of white sugar-candy to some of the hogsheads ... in order to conform to a rage that prevailed to drink none but very sweet Champaign*.

The French did not really start using bottles for wine until the mid-1700s and it took them a long while to perfect a bottle to take the pressures of Champagne. Cyrus Redding writes, in *A History and Description of Modern Wines*, published in 1833, about the problems associated with the bottles used in Champagne. He says that they: *are jingled together in pairs, one against the other, and those that break are carried in account against the maker*. This however, was by no means a foolproof test of a bottle's integrity and despite inspections for air bubbles and obvious cracks, many of the bottles broke while undergoing secondary fermentation and maturation. Redding writes at some length about the precautions the workers have to go to in order to protect themselves against flying glass and states that it is normal for between 4 per cent and 10 per cent of bottles to break in store, although: *sometimes, however, it amounts to thirty and forty percent*. During the spring and summer (when bottles were likely to explode) visitors to Champagne cellars were issued with metal masks!

² Dr. Merret came from the Gloucestershire village of Winchcombe where there is a street called Vineyard Street and one wonders if his interest in wine was in any way stimulated by this. The street is presumably named after a monastic vineyard maintained by the monks at Winchcombe Abbey, founded in 798 by Cenwulf, King of the Mercians, which survived until it was 'surrendered' on 23 December, 1539.

³ Brisk meant slightly effervescent.

⁴ The Oxford Dictionary describes 'nittiness' as being: *full of small air bubbles (referring to wine)*.



Wine list from 1760s, showing both 'mousseux' and 'non mousseux' Champagne

Although Redding devotes a whole chapter to Champagne – some 24 pages – going into great detail about hectareages of vines, the amount of wine made in the region, the varieties used, the exact processes involved with the initial fermentation, the way the wines were bottled, had their corks inserted and wired on, etc. – he is genuinely perplexed by the way in which the sparkle is created! He says that it is a result of the: *carbonic acid gas produced in the process of fermentation* and that this is due to the: *saccharine [becoming] decomposed*. This shows that he was aware of the basic principle, but the idea that this could be controlled and provoked at will by the addition of extra sugar and yeast at bottling (one of the cornerstones of the modern *Méthode Champenoise*) seems to have escaped him.

Was it that the French themselves did not appreciate this? I suspect so. Redding states with some authority that: *the effervescence of the Champagne wine, considered in all its bearings, is*

most uncertain and changeable, even in the hands of those best acquainted, through experience, with its management. He continues and says that there are many factors that: *all have a varied and often inexplicable influence on the phenomena of effervescence*. One wonders who it was that first fully appreciated that an addition of 18 grams of sugar per bottle to a bone dry wine, plus some active yeast, gave the required degree of CO₂ pressure (5–6 bars), together with an increase of around 1.25 per cent alcohol? Certainly not Dom Pérignon!

Redding was not alone in his ignorance of the facts about the secondary fermentation. David Booth, who wrote a highly respected book called *The Art of Winemaking in all its Branches* published a year later in 1834, was equally in ignorance of why some wines sparkle and others do not. Indeed he states quite categorically that: *the theory of fermentation, as laid down by Chaptal, is of little value to practical men!* (In 1807 Chaptal had proposed that sugar was the necessary ingredient for fermentation to take place. In fact it wasn't until Louis Pasteur started on the problem in the 1860s and proposed that it was yeasts that were the real culprits, that fermentation was properly explained.)

This ignorance about the relationship between sugar, yeast and the sparkle in Champagnes continued to perplex wine writers. W. H. Roberts, writing in the 5th edition of his *British Wine-Maker and Domestic Brewer* in 1849 quotes a Dr Shannan (his name was actually Shannon) who says that: *for about twenty years last past, the gust [taste] of the French has been determined for a frothy wine* and goes on to wonder about how the *froth* gets into the wine. He writes: *some believe that it proceeds from the force of the drugs that they [the French] put in it, which makes it froth so strongly*. Later he dismisses this possibility and puts it down entirely to inexplicable natural circumstances which are all to do with the time of bottling. He states with some certainty that: *one may always be sure to have the wine perfectly frothy when it is bottled from the 10th to the 15th of the month of March* (in the year after the harvest).

Thudichum and Dupré's *Complete manual of viticulture and Oenology* of 1872 has a long section in it about the winemaking techniques used in Champagne, describing the bottling in some detail, but covering the question of how the sparkle gets into the bottle in a few lines. They state that: *as the Rhenish wines after their fermentation and ageing no longer contain any sugar, it is necessary to add an amount of sugar so that the whole of the sugar in the wine to be fermented is 2%. This presence of 2% of sugar, the manufacturer of Champagne mostly secures by mixing young wines only*.

Even though the authors of this book go into some detail about the exact amount of sugar required to provide the required amount of *mousse* (so called, they say, because when it foams from the bottle it resembles a little patch of moss) and advise the use of a *Schintz's Manometer* to test when fermenting bottles of champagne are nearing their breaking point due to excess pressures, it is clear that the system of Champagne manufacture was, until relatively recently, very haphazard and relied upon chance to a great degree.

The system seems to have been that the young wines i.e. those from the previous year, were allowed to ferment as slowly as possible

so that some of them would stop fermenting and some of the original natural sugar, together with whatever was added at harvest time, remained in the wine when the weather turned cold. By March, when the weather might be expected to start warming up, these sweeter partially fermented wines were blended with dry wines, whether from the previous or even older vintages, so that at bottling, some residual sugar was retained in order for the secondary fermentation to take place. This ensured that the wines sparkled, although not as consistently, or probably as much, as they do today.

So, whether or not it was *our wine coopers* or not who first discovered that sugar was required in wine in order for the sparkle to appear, who knows? It does seem however, that only 100 years ago, the precise mechanism of this phenomenon was not fully understood or appreciated and was put down as much to magic as to science. It's a nice thought though, that perhaps the English had something to do with the development one of France's most famous wines and that the modern production of English and Welsh sparkling wines is actually a tradition that goes back at least as far as Dr Merrett's 1662 paper.



The author paying homage to Dom Perignon

(Photograph courtesy of Giles Fallowfield)