



1

In the beginning....

Sparkling, bubbly, fizzy wine has been around almost as long as wine itself...

...And probably originated in the same way:

By fortuitous accident!

2

What is WINE?

- Wine is the product of grape juice (+ skins, pips, solids) that has undergone the chemical process of **FERMENTATION**:
- **SUGAR** in the grapes comes into contact with **YEAST** which transforms the sugar into **ALCOHOL**.
- Other significant by-products of this transformation:
 - **Carbon dioxide** is created
 - **Sediment** forms, as yeast cells 'die' and sink to the bottom.

3

What Is Sparkling Wine?

- Sparkling wine is a wine which has undergone an additional fermentation process that makes it bubbly.
- Initially, this happened spontaneously and accidentally:
 - After autumn grape harvest and the beginning of fermentation, temperatures would often drop drastically, especially in northerly winegrowing areas, causing the fermentation to stop.
 - Assuming the process was finished, producers transferred the wine into barrels, bottles, amphore or other closed containers, and put it in their cellars or sent it off to market.
 - In the spring, when temperatures warmed, the yeast 'woke up' and resumed consuming the remaining sugar in the wine.

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- This is exactly the same process, with the same principal effects, that took place during the initial fermentation, with one major difference....
- Unlike the initial fermentation process, this secondary fermentation takes place in a **closed vessel** which prevents the CO₂ from escaping, and, under pressure, causes it to be diffused throughout the liquid.
- The particles of **CO₂** diffused throughout wine in a closed container under pressure is what creates bubbles once the container is opened and the liquid is exposed to air.
- The size, amount, intensity and character of the bubbles are determined by many factors including the amount of pressure in the bottle, the viscosity of the base wine, the **amount of time *sur lie***, and the amount of time in bottle.

5

The Beauty of Bubbles....



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Part I: PROTOTYPES



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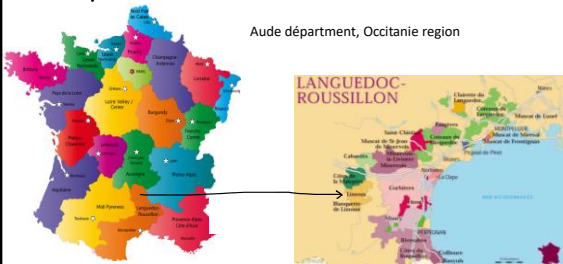
Accident (flaw) vs. Intention (desirable)

- Ancient Greeks and Romans noticed that wine sometimes turned bubbly. They viewed it as a flaw and believed it was connected with the lunar cycle.
- After the fall of the Roman Empire (circa 476 AD), winemaking practices were maintained and advanced in monasteries.
- Middle Ages: Clerics thought wines that spontaneously started to bubble had been possessed by the devil.
- The earliest traceable example of a wine *intentionally* made to undergo a second fermentation in a closed container causing it to have the *desirable* effect of being bubbly is...

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Blanquette de Limoux Méthode Ancestrale AOC

Aude département, Occitanie region



9

Fortified Benedictine Abbey of Saint Hilaire



- Saint Hilaire Abbey founded in 8th century and abandoned in 1738.
- **1531**: earliest existing notes written by monks about the process of making sparkling wine in a bottle sealed with cork.
- **This represents the first written indication of an intentionally made sparkling wine.**
- Sediment given off during the second fermentation remains in the bottle.

This practice is now generally known as **Méthode Ancestrale**.

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AOC Limoux

- Obtained appellation in 1938
- 3 sub-appellations for sparkling wine:
 1. AOC Limoux Blanquette de Limoux
 - Minimum 90% Mauzac with maximum 10% chardonnay and/or chenin
 - Made using traditional method: assemblage, tirage, minimum 9 months sur lie, liqueur d'expédition
 2. AOC Crémant de Limoux
 - Chardonnay and/or chenin blanc, Min 60% to max 90%, plus 40% pinot noir and Mauzac max 20%
 - Traditional method: Assemblage, tirage, min 9 months sur lie, degorging, addition of liqueur d'expédition.
 3. AOC Limoux Méthode Ancestrale
 - **100% Mauzac**
 - **Following harvest, must ferment until reaches 5-6% ABV**
 - **Bottled under cork in March during waning moon.**
 - **In early spring, as temperatures rise, the yeast in the bottled wine “wakes up” and interacts with the remaining sugar, creating a spontaneous second fermentation in the bottle.**

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BLANQUETTE DE LIMOUX

- “Blanquette” = *little white* = local synonym for Mauzac
- Semi-aromatic, late budding & late ripening
- Grows principally in southwest France areas of Limoux, Gaillac, and Bordeaux
- One of the 7 approved varieties for Bordeaux blanc
- **Traditionally harvested late; prise de mousse with waning moon of March and ascending “pink moon” of April.**
- Semi-sweet, low ABV 6-7%
- Fresh floral aroma, delicate mousse
- Lees in bottle give soft creamy palate

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BLANQUETTE DE LIMOUX MÉTHODE ANCESTRALE AOC
Côte Mas



- Non-vintage
- 100% Mauzac
- 7.5% ABV
- "A compellingly subtle fusion of honey, acacia and stewed apple notes with beautiful freshness. ...A gently sparkling option for impromptu afternoon breaks."
- Limoux AOC
- "Warm, toasty and slightly sweet, with initial aromas of grilled pineapple, baked apple and lightly caramelized corn. The palate is as rich and decadent as the bouquet, but kept in check by ample acidity that lends vibrancy through the close."
- Luren Buzzeo, Wine Enthusiast

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Question:

- Why did the monks *choose* to make this wine?
 - Does not seem that it happened by accident
 - Does not seem that it spontaneously happened by nature, because it doesn't get that cold in southwestern France...

Answer (Speculative):

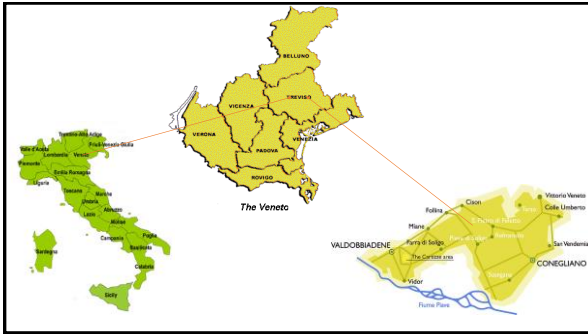
- Possible connection with the lunar calendar, some pagan Occitan ritual under the protective guise of the Catholic church, or a Cather passion for the symbolic resurrection and assentation of spring?
- Maybe the religious community wanted a low alcohol, semi-sweet bubbly wine for daily consumption?
- Maybe they just liked the bubbles?

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Valdobbiadene (TV) Veneto, Italy 45.9 N




15



16


Conegliano Valdobbiadene Prosecco

- NE to SW chain of hills; foothills of the Dolomites to the north, and Alps behind that.
- Before ancient Romans arrived, area was inhabited by Celtic-Italic tribes called Veneti who planted grapevines in the steep, craggy hills.
- Typically got quite cold following grape harvest, and fermentation had a tendency to stop prematurely.
- In the spring, when temperatures warmed, fermentation resumed, creating bubbles in the closed containers of wine, along with a cloudy sediment.



While this was not *intentional*, it was *embraced* by the inhabitants and became a standard feature of their winemaking.

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VALDOBBIADENE PROSECCO "COL FONDO"

DOCG Ca' dei Zago

- Original, traditional style of prosecco made in the area long before diffusion of autoclave.
- Second fermentation takes place in bottle without disgorgement.
- Made primarily from Glera grape (formerly known as "Prosecco") with other local grape varieties — Verdiso, Perera, Bianchetta Trevigiana, and Glera Lungo.
- Typically made in frizzante style, crown cap closure..
- Rustic yet elegant; floral, leesy, moderately effervescent, fresh, earthy, genuine, appealing, food friendly, very drinkable.
- Sediment makes wine a bit cloudy and gives creamy texture.

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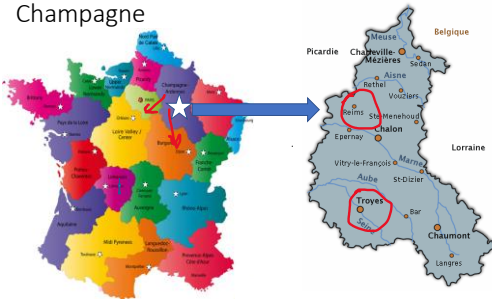
Part II: REFINEMENT



Jean-Francois de Troy, The Oysters Lunch, 1734

19

Champagne



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A bit of history...

- Ancient Romans annex Provence in **121 BC**. Wage Gallic Wars **58-51 BC**.
- Align with the Remi tribe centered in *Durocortum* (Reims) and colonize Champagne.
- Romans dug deep pits out of porous earth to build fortresses and monuments. Planted vineyards.
- Wine of Champagne praised by Pliny the Elder 79 AD.
- Fall of the Roman Empire 476.
- Clovis, King of the Franks — first to unite all the Frankish tribes and expel Roman colonizers — converts to Catholicism in Reims, Christmas Day 508.
- His wife, Clotilde, is a Catholic from Burgundy.



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- **1115:** Bernard, monk at the Benedictine Abbey of Citeaux near Dijon, goes north to create Clairvaux Abbey near Bar-sur-Aube.
- Brings more sophisticated viticulture practices to Champagne.
- During Middle Ages the Champagne region develops into an important textile center with major trade fairs in Reims and Troyes.
- A new wealthy merchant class is born.



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- 1668: **Dom Pierre Pérignon** is appointed procurer of the Saint Pierre Abbey in Hautvillers.
- Makes major improvements to winemaking practices, laying the technical foundation of the **Champagne Method**.
- Spontaneous second fermentation was considered a fault. For most of his life, Pérignon worked very hard to *prevent* bubbles....
- Dukes of Burgundy compete with Counts of Champagne for political favor by promoting their regions' wine at royal court in Paris.



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• *While Dom Perignon is trying to eliminate bubbles, English consumers of wine from Champagne are clamoring for them.*

- 1662: Christopher Merrett presents a paper explaining how sugar added to wine can stimulate a second fermentation:
- 'Our wine-coopers of latter times [add] vast quantities of sugar and molasses to all sorts of wines, to make them drink **brisk and sparkling**'.
- The technique of coal-fired lead glass is developed, creating a thicker stronger glass that can withstand intense pressure.



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- Appreciation of the bubbly wine of Champagne bounces back across the channel.
- Following the death of Louis XIV, Philippe II, Duke of Orléans becomes Regent of France 1715-1723.
- Serves sparkling Champagne at nightly soirees in the Palais Royal.



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- 1728 King Louis XV passes a special law permitting the transport and commercialization of wine from Champagne in bottle rather than barrel.
- Sparkling Champagne becomes extremely popular and new companies spring up to satisfy rapidly growing demand.



Two big problems remain...



Louis XV et Mme. de Pompadour

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- Sediment leftover after the second fermentation made the wine cloudy and glogged together creating a ropey effect.
- 1816: **Barbe-Nicole Ponsardin** (“Veuve Clicquot”) and cellar master Antoine Müller, develop **riddling technique** (*remuage*) to remove sediment leaving wine clear.
- Excessively high pressure after second fermentation caused high percentage of bottles to explode, creating huge loss of product and danger for workers.
- 1831: **Jean-Baptiste François**, pharmacist in Châlons-en-Champagne, publishes a treatise containing “**Réduction François**”, a formula specifying how much sugar & yeast to add to make the wine sparkle without causing bottles to explode.

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What was/is Champagne?

- One of the very first wines to receive AOC in 1936.
- One of the first examples of an internationally marketed brand.
- Closely connected with the industrial revolution and the development of "modern" technology.
- One of the earliest examples of an extremely popular manufactured beverage created to satisfy demands of various markets, according to producer style and brand-identity.
- Made from wines (often chaptalized) of Champagne region.
- Base wine usually a blend: 3 main varieties, 4 additional permitted.
- *Liqueur de tirage* (sugar + yeast) to induce 2nd fermentation.
- **Second fermentation in the bottle.**
- **Extended aging**
- **Disgorgement to remove sediment.**
- *Liqueur d'expédition* (dosage) added to top off and sweeten.

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Most Champagne was Sweet...

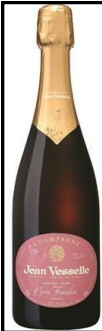
- Sweetness level adjusted according to preferred level of each client.
- 150 g/L was the norm. 200-300 g/L was not uncommon in certain markets (e.g. Russia).
- Louise Pommery is thought to have created the first "dry" champagne around 1874 (approximately 30 g/L).
- When shipped to her English clients, they said it was "*brutish*" and sent it right back.



- Doux: 50+ g/L
- Demi-Sec: 32-50 g/L
- Sec: 17-32 g/L
- Extra-Sec: 12-17 g/L
- Brut: 0-12 g/L
- Extra-Brut: 0-6 g/L
- Brut Nature: 0-3 g/L

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Champagne Demi-Sec Rosé Saignée Bouzy Grand Cru "Cuvée Friandise" NV Jean Vesselle



- 100% Pinot Noir from Bouzy Grand Cru
- 32 g/L
- Rosé Saignée
- Tasting notes: Med+ color. Beautiful aroma: ripe cherry, wild strawberry, rose petals. Baked cherry clafotis. Nice acidity balances sweetness. Mod long with a stoney finish.

30

Champagne was one of the very first industries in which a significant number of women were able to play important and decisive roles as owners, CEOs, decision makers, trendsetters....

31

The Gay Nineties: **La Belle Époque**



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Part III: DIFFUSION



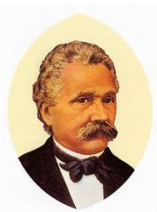
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Crazy for bubbles....

- By the middle of the 19th century, Champagne had become an international craze—as well as a big business—and many people wanted to get in on it.
- People came to Champagne from all over France and Europe. Many of them stayed. Some even created Houses of their own.
- Others spent time working and learning in Champagne, then went home, taking their knowledge and passion with them.
- This expanded the culture of sparkling wine and the production techniques that were developed and perfected in Champagne.
- With the development of technology during the industrial revolution, additional techniques and refinements were made.

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Carlo Gancia



- 1848: 19 year-old Carlo Gancia goes to Reims to learn how to make Champagne.
- Returns to Italy 2 years later and starts a winery with brother Eduardo.
- 1865: After 15 years of experimentation, Gancia releases first metodo classico sparkling wine called Spumante Italiano or Asti Champagne made from moscato grapes.



35

MAISON FONDÉE EN 1854
GANCIA FRÈRES & C^{IE}
 Propriétaires de Vignobles
 SPUMANTE
 VINS D'ASTI & CHAMPAGNE ITALIEN
CANELLI
 FRESCHI (DOLCE)
 Appuntamento per il

A tall, slender, light blue bottle of sparkling wine with a white label at the bottom.

ASTI CHAMPAGNE
 F. Gancia & C^{ie}
 CANELLI

Gancia Asti DOCG Dolce

- 100% Moscato bianco
- Metodo Classico: 24 months sur lie.
- 7% ABV

36

Josep Raventós Fatjó



- Raventós traces its winemaking activity in the Sant Sadurní d'Anoia and Can Cordinú areas in the Penedés region of Catalonia, Spain, back to 1497.
- In the late 1800s, Josep Raventós Fatjó goes to Champagne, where he spends time exploring the area, tasting the wine, and observing production techniques.
- **1872:** Raventós returns home to create a sparkling wine using the production method of champagne and the native grape varieties of his region.
- New sparkling wine is named after the underground cellars where the maturation sur lie takes place.
- Cava goes on to become *the* sparkling wine of Spain.

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Conca del Riu Anoia, Blanc de Blanc Raventós i Blanc



- Name of sparkling wine "Cava" first officially mentioned in 1959.
- Regulatory Board of Sparkling Wines created in 1972.
- First official Cava DO appellation in 1986.
- White grapes: Macabeu (Macabeo), Xarel.lo and Parellada.
- Red grapes (for rosada): Garnacha tinta, Trepát, Monastrell.
- Josep Maria Raventós i Blanc, instrumental in creating the Cava DO appellation, creates his own estate winery in 1986.

38

József Törley



- Meets Theophilus Roederer (cousin of Louis) at the Trade Academy in Graz, Austria and invites him to visit Reims.
- Apprentices at Louis Roederer and other Champagne houses, then opens his own champagne production facility in Reims.
- On a trip back to Hungary, Törley discovers that areas around Budapest contain ideal soils for Champagne grapes.
- Transfers entire operation to Budafok, Hungary in 1882.

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"My diligence and persistence allowed me to succeed in creating a much better sparkling wine than the currently known products of Champagne." – József Törley

- Excavates 25 miles of underground cellars and tunnels for ageing .
- Business thrives. In 1905 production tops 1 million bottles exported throughout the world, including France, making it one of the most successful and popular brands of sparkling wine outside Champagne.
- Törley dies in 1907.
- Winery hit by bomb during WW II.
- After the war, Hungary becomes communist and the company is nationalized.

40

Piero Coppo



- 1892: Given the huge international success of Champagne, Piero Coppo establishes a winery in Canelli (Asti), an area with a long history of producing bubbly wines.
- Moscato bianco is native; chardonnay introduced in first decades of the 19th century.
- Utilizes the practice of conducting the second fermentation in bottle with disgorgement.

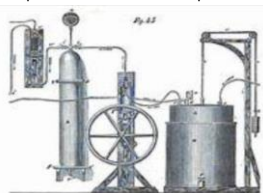


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Federico Martinotti



- **1895: Federico Martinotti**, director of the Experimental Station of Enology in Asti (1872) develops and patents the technique of conducting the second fermentation in large pressurized temperature-controlled receptacles.



42

Metodo Martinotti vs Méthode Champenoise

- In 1910, Eugene **Charvat** adopts an existing technology called the **autoclave** as the receptacle for Martinot’s invention.
- The impetus for Martinotti’s invention was **not to make a simpler, more commercial, less expensive product**, but rather **to make a more consistent, more stable sparkling wine** that could be transported outside the immediate area of production.
- *This was the same motives behind the development of the Méthode Champenoise.*
- **The basic chemical process of undergoing second fermentation in a closed container -- trapping CO2 inside the liquid and creating a sediment of dead yeast cells on which the wine matures for an extended period of time -- is exactly the same.**
- Size of the container makes a difference; so does **amount of time** on lees.

43

Giulio Ferrari



- At the beginning of the twentieth century, Giulio Ferrari (b. 1879) takes a trip to Champagne, falls in love with the wine & winemaking process, and becomes obsessed with the dream of making a “classic method” wine in his home area of Trentino.
- Brings cuttings of chardonnay and pinot nero to plant in the foothills of the Alps.



In 1952, Ferrari, childless, decides to sell his successful business to Bruno Lunelli, owner of a wine shop in Trento.

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Trento DOC “Giulio Ferrari Riserva del Fondatore” Ferrari

- 100% chardonnay (Blanc de blancs)
- Selected, hand-picked grapes, from south-facing 12 ha Maso Pianizzo vineyard, approximately 600 meters asl, surrounding Trento.
- 10 years *sur lie*.
- Vintage 2008
- First produced in 1972



Official Trento DOC appellation created 1993
 First Traditional Method appellation after Champagne (1936)

45

Guido Berlucchi and Franco Ziliani

“What if we were to make a sparkling wine as the French do?”

Franco Ziliani, 1955

First classic method sparkling wine released 1961.



46

Franciacorta DOCG

- 1570: Gerolamo Conforti, a doctor in Brescia (Lombardia), publishes a text entitled “Libellus de Vino Mordaci” (Treatise on Sparkling Wine) praising the beneficial and pleasurable aspects of “biting” wine.
- Pinot di Franciacorta DOC: primarily pinot bianco with possibility of adding pinot noir and/or pinot gris.
- Pinot Bianco was initially the major player and remains so, up to max 50%.
- Erbatat, a local native grape recently permitted in the blend, max 10%.
- Min 18 months *sur lie*.
- Satèn: dominated by chardonnay.
- Franciacorta DOC established 1967 for both still and sparkling wines.
- 1995: Franciacorta DOCG as an only sparkling metodo classico appellation.

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1950-1990: The Banalization of Bubbles



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General Trends

- Sparkling wines of all types reaching a new level of popularity among all consumer sectors, including young adults.
- No longer viewed as an exclusively special occasion wine.
- No longer viewed as an exclusively “feminine” wine.
- No longer viewed exclusively as a toasting or official celebration wine; more people have sparkling wine with food.
- General trend towards drier styles of sparkling wine.
- More people are thinking of sparkling wine as a *wine*, i.e. an expression of a place, time, grape variety, people who made it...
...as opposed to merely *bubbles and brand*.

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Champagne, Full-Circle and Beyond:

The Dynamic Re-Birth of the Benchmark of Sparkling Wines



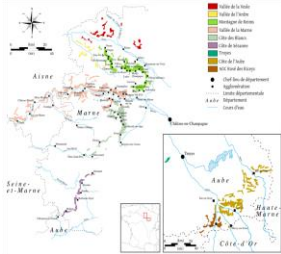
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- The Grower Revolution
- Incredible synergy between small grower-producers and large Maison
- Échelles des Crus officially abolished in 2007
- Emphasis on Terroir
- From Doux to Brut Nature
- “Lost” grape varieties
- Rise of the Aube
- Coteaux Champenois

52

A re-evaluation and revision of the official Champagne Production Area is currently in progress.

- Based strictly on quality/suitability of terroir.
- Mixed impartial group of experts.
- About 4,000 ha within the current boundaries will likely be added (winegrowing areas that were unrightfully excluded from earlier classifications).
- Some areas will be removed.



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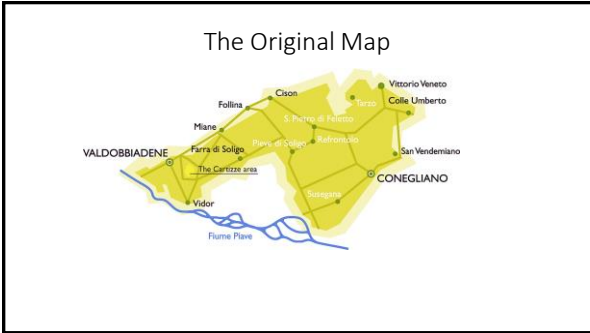
New Kid On The Block
The Amazing Rise of Prosecco



54

- From the verge of extinction in the aftermath of WW II, Prosecco makes an incredible comeback.
- Big boost at Harry's Bar (Venice) post-war as a Bellini. Symbol of "La Dolce Vita"
- Bellini comes to USA late 1970s and explodes in the '80s-'90s
- Adopted by Millennials as their go-to every-day bubbly and rides the cocktail craze.
- First official Prosecco appellation in 1969.
- Term "Prosecco" used to indicate a wine, the place where it was produced, and the principal grape(s) used to make it.
- As popularity grows, so do imitations....
- Major changes in 2010:
 - Name of principal grape variety changed from Prosecco to GLERA
 - Two new additional Prosecco appellations created

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The New Prosecco Map

- In 2017, sales of Prosecco (vast majority of it Prosecco DOC) overtake sales of Champagne.
- Prosecco DOC will add a rosé Prosecco category beginning 2020.
- Prosecco CV DOCG is eliminating the frizzante category.
- Consumers know Prosecco but do not distinguish one from the other.

While Champagne is finding its true identity, Prosecco appears to be losing it.

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Back to the Future...



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CAVA ON THE ROCKS

- From the town of Sant Sadurn d'Anoia in the province of Catalonia, where Josép Raventós first began making traditional method sparkling wine in 1872, the production region of Cava has expanded to 6 additional areas of Spain.
- International grapes, Chardonnay and Pinot Noir, were added to the list of permitted varieties.
- A number of Cava producers, including many of the oldest and most prestigious, felt that the integrity of the appellation had been compromised, and decided to stop using the name.

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- 2012: Pepe **Raventós**, 8th generation-descendant of the original creator of Spanish sparkling wine, announces the winery will remove itself from the Cava DO and set about creating new appellation called **Conca Del Riu Anoia**.
- 2014: a new sub-division within the Penedès DOP (originally created in 1960) designated for the production of classic method sparkling wines called **Clàssic Penedès** with strict quality criteria: 100% organic, grown and produced within small area of Penedès (Catalonia), minimum 15 months sur lie.
- 2015: Six traditional and prestigious Cava producers of Penedès — Gramona, Llopart, Nadal, Recaredo, Sabaté i Coca, Torelló, Huguet-Can Freixes, Júlia Bernat, and Mas Candí — form a group called **Corpinnat***, adhering to strict quality practices, and begin discussions with the DO regulators. Four more wineries join the group. In **2019**, unable to reach an accord, the 9 wineries officially withdraw from the Cava DO appellation.

*L'Associació d'Elaboradors i Viticultors Corpinnat (AVEC)

60



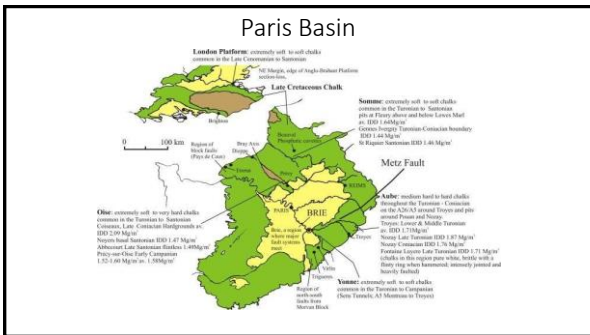
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BRITISH BUBBLY

- As avid consumers of wine, Britain has historically had a significant impact on the creation and development of certain wines, one of which was clearly Champagne. [Others include Port, Madeira, Bordeaux.]
- One of the main reasons behind this was the fact that climatic conditions did not permit Britain to grow grapes and produce wine on its own territory on a commercial level. [Efforts to grow wine grapes, however, date back to ancient Roman colonizers.]
- This has changed — and is continuing to change — due to global warming:

There are now close to 500 wineries commercially producing wine. And a notable portion of it is sparkling.

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Blurring the Boundaries

"The Judgement of Paris" #2

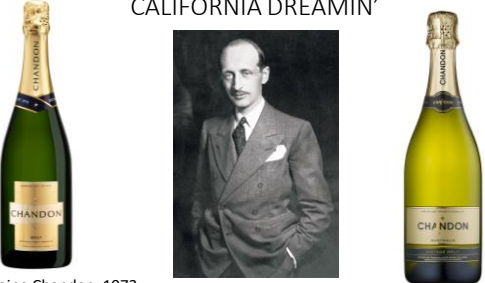
- In 2016, a blind tasting takes place featuring Champagne and British sparkling wine.
- 13 of the 14 panel members thought Nyetimber Blanc de Blancs 2009 was Champagne.
- "In all my years writing about wine, I never would have believed that top French palates would take English sparkling wine for Champagne."

- Matthew Jukes, journalist



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CALIFORNIA DREAMIN'



Domaine Chandon, 1973
Napa Valley

Count Robert-Jean de Vogüé
1896-1976

65



Roederer Estate, 1983
Jean-Claude Rouzaud
Anderson Valley

Mumm Napa, 1987
Guy Devaux

Domaine Carneros, 1987
Claude Tattinger
& Eileen Crane

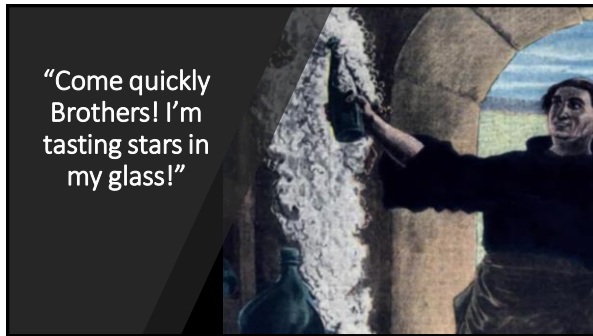
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CAP CLASSIQUE
South Africa

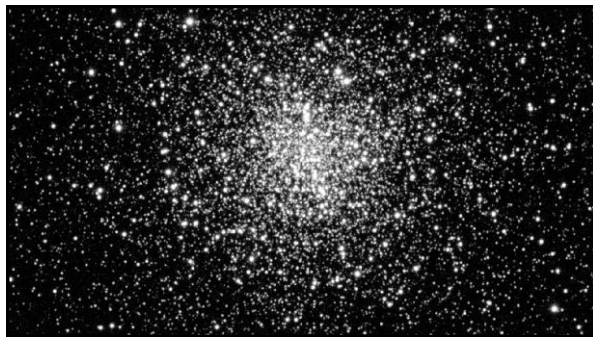


- 1992: Cap Classique Producers Association (CCPA) established as a premium traditional method wine category of South Africa.
- The winemaking process is known as **Méthode Cap Classique** (MCC)
- The classic art of winemaking is thought to have been introduced in the Cape by the French Huguenots. The first commercially produced bottle-fermented sparkling wine at the Cape was Simonsig Kaapse Vonkel (Cape Sparkle) in Stellenbosch.
- There are currently about 80 members in the CCPA.

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