

WINE Talk: November 2025

The newsletter of Living Wines: Edition 139

Welcome to newsletter 139 for November, the eleventh WINE Talk Newsletter for 2025. We hope you continue to enjoy reading them. We certainly are continuing to enjoy writing them! It's almost certain there won't be a December one, so we are nearly at the end of the year!

We have been able to put together **5 packs** to offer in this newsletter, but some of these packs have only one or two available, so we expect them to sell out quickly.

The newsletter also has:

- A note about Christmas
- New Arrivals: Le Temps des Cerises
- Imminent and future arrivals
- December shipping
- 5 Wine Packs for this month
- Bits and Pieces
- How do grapes ripen: Part 1
- A story about the Bourgogne Passe-Tout-Grains appellation

For a full list of wines currently in stock and their prices see:

<https://livingwines.com.au/shop/>

There's an easy way to order our wines. Just send us an email listing the wines and/or packs you would like to order or even just a budget and your style and region preferences. We confirm a plan by return email before processing your order.

If you're not personally known to us or haven't already, please also provide your date of birth so we stay legal (a requirement of Tasmanian legislation). You must of course be over 18 years of age to order.



We are almost certain this will be our last newsletter for 2025 so first we would like to thank you for allowing us to add our emails to your inboxes for yet another year. We really appreciate it that you choose to continue to receive our emails whether you are customers of ours or not. While our newsletter's intent is to help us with our wine sales, we always try to include at least some content that may be of interest to anyone interested in vineyards and wine, whether you buy from us or not.

Having said that we would like to say a special thank you to everyone who has ordered during 2025 (or tried to order – we know it's hard with the packs, which often sell within a minute of us sending the newsletter!). Without you Living Wines would not exist. We wish everyone who reads our emails a very happy holiday season. If you happen to drink any of the wines you have bought from us during this festive season then a special 'Santé' from us as you take your first sips. We hope they don't disappoint!

New Arrivals - Le Temps des Cerises

Things have changed quite a bit since we last had Languedoc vigneron Axel Prüfer's wines. In late 2022 in what he described to us as "an optimistic moment" he almost doubled the size of his estate by adding 7 hectares on the cause (gravelly plateau) where he already has vines from the same man he bought his first vineyard from. The plan is to remove some of the vines and use the land to grow seeds for his cover crops but he kept some of the additional vines and has,

since then, been converting them to organic viticulture. It means he has a whole new palate to play with including Alicante (which has red juice!), Cabernet Sauvignon, Merlot, and Syrah.



A whirlwind tour of all the new vineyards with Axel in July 2024.

Some things have gone ... and this is partly while he was tempted by the purchase. The vines in the Grenache vineyard from which he made Les Lendemains Qui Chantent have become infected with *flavescence dorée*, a disease wreaking havoc in France, and have to be replaced so the land will not produce grapes again for some years. Fou du Roi, as it was, can no longer be made because he no longer has access to the Carignan which made up 1/3 of the wine. (The label might return in another guise (still with three equal parts but different varieties) once all the new vines are certified organic.)

Avanti Popolo is an old name for a new wine and the recipient of a brilliant theory (Axel is quiet, gentle and a big thinker). It contains all the grapes from the new vineyards which are in conversion to organic and, beginning with the 2022 vintage, he faded out the colours of the label to indicate that it was in conversion. Each year, as it gets closer to becoming organic, he returns a little more colour. We're releasing 2023 now but will have a slightly darker label 2024 to release later.

Axel makes all his wines with no added sulphites and generally, especially with La Capitulation, there is always some dissolved CO₂ in the bottles. You need to love the prickle in a natural wine (and with La Capitulation almost a fizz) to love these wines! All of them, even the reds, benefit from some sort of chill to begin with then there is the pleasure of watching the wine evolve as the bottle warms a little.

We are releasing these wines in a couple of tranches. These are the first wines. Unfortunately most are sold out to people who requested early notice except for those we reserved for newsletter packs.

Le Temps des Cerises Avanti Popolo 2023

Merlot, Alicante, Cabernet Sauvignon, Grenache, Cinsault, Syrah

Since Axel Prüfer added 7 hectares to his estate late in 2022, Avanti Popolo is now from his new vineyards. They are currently in conversion to organic and each year he adds a little more colour back into the label to signify progress in the vineyard. Once the vineyard is fully organic the label will revert to the original colour.

It means it is quite a different blend of grapes from previous wines we have had with this name. This wine includes Merlot, Cabernet Sauvignon, Syrah, Alicante, and Grenache Noir. Most had a short maceration but the Alicante, which has red juice, was directly-pressed. The maceration was in fibreglass and the aging in 40 hectolitre wooden tanks. Perhaps partly because of the Alicante it's a vibrant red cherry red and is juicy and tastes of ripe cherries and raspberries with just a hint of soft herbs. Sold out except in pack 5.

Le Temps des Cerises La Capitulation Ne Paie Pas 2023

Cinsault

This light red wine is made each year from the first pass through Axel's Cinsault vines. It also has the shorted maceration (5 days) over the skins of Grenache Noir. The cuvée began life as a Brutal but he changed the name when he realised it was going to be made each year (the Brutal project is all about exceptions not typical wines). The ABV is 10.2% and there is a noticeable amount of dissolved CO₂. The effect is almost sparkling - more than the prickle in the other wines - it is fair to say it is a wine for true believers and would be quite confusing for anyone who prefers conventionally-made wines. The flavours are savoury enough to channel pomegranate, with just a hint of bitterness (good bitterness!) Sold out except in pack 5.

Le Temps des Cerises Jalava 2023

Cinsault

Jalava is the red cuvée made from the final pass through the Cinsault vines, about 20 days after La Capitulation and from the stoniest part of the vineyard. It then has a longer maceration (approximately 2 weeks). It's dark enough to call it a red wine and, even though Cinsault is thin-skinned and does not have a lot of tannin, it has quite a lot of structure at the back of the pallet. The flavours are savoury and restrained. It would be beautiful with grilled lamb. ABV 10.8%. Sold out except in pack 5.

Le Temps des Cerises à Oïli Oïli Oilà 2024

Cinsault

à Oïli Oïli Oilà 2024 is also from the same vineyard as La Capitulation and Jalava but from the 2024 vintage. It's typically, including in 2024, the middle pick and from the middle of the vineyard. It's picked about 10 days after la Capitulation and 10 days before Jalava and had 10 days of maceration. The pomegranate flavours are more pronounced than in La Capitulation and there is also more morello cherry. It's a fraction darker in colour, although still pink rather than red, with a silky texture. It's not a rosé but it is not a red wine. Food is not essential to fully enjoy this wine but a park would be good. 10.3% ABV. Sold out except in pack 5.

Le Temps des Cerises La Peur du Rouge 2024

Mainly Chardonnay 1% (Viognier)



Axel's La Peur du Rouge vineyard

Predominantly from a beautiful stone-walled vineyard (see photo) and a vineyard full of tiny star-shaped fossils called Etoile, La Peur du Rouge now also has a little Chardonnay and an undetectable (we think) row of Viognier from the new vines purchased in 2022. As usual it has a period of carbonic maceration before bottling and the resulting wine is quite golden from the colour picked up from the skins. There were four passes through the vines so as to capture acidity (and 12,2% ABV), each macerated and pressed separately (after between 5 and 10 days of maceration). Axel does like to experiment and the last. It is intensive work and the yield is very low - 31 hectolitres of wine from 3 hectares of vines or not much more than 10 hectolitres per hectare. \$64 and still available!

Imminent and Future Arrivals

We are expecting to release these wines during January:

- Le Bouc à Trois Pattes along with a few more cuvées of Axel's wines
- Michel Gahier (Jura)
- Marie-Courtin (Champagne)
- La Soeur Cadette (Burgundy)

None of these will be allocated so if you would like early warning of their arrival let us know. Later in the new year we will have wines from Fanny Sabre, Domaine Derain, l'Octavin, and Domaine Milan.

We've also finalised two important Jura orders – one with Renaud Bruyère and Adeline Houillon and the other with Tony Bornard. These won't be arriving until after summer and we imagine we'll be selling them both by allocation/offer only. We should warn that this release of Bruyère-Houillon, our first since the middle of 2024, will be slightly smaller than the 2024 one, so we are not guaranteeing an allocation of any wines except for regular customers of our Bruyère-Houillon wines who also buy other wines from us regularly. But now is a good time to start making requests if you would like an offer from either of these releases. There is no rush – it will be a while – but if you want to make you are on our list for the next release just send us a quick email with a request. We should also have more Calvados and cider from Julien Fremont available around April. We don't allocate this but can provide early advice to anyone who does not want to miss out.

December Shipping

When everyone else is winding up for a busy December we are winding down. We are almost at the point where it's not advisable to ship any more wines interstate.

For customers we have to use a general courier with it's starting to get too warm and for our customers who we are able to ship to using Anonymous Wines the days are running out.

We are hoping to send them a pallet this Wednesday and we may be able to send one more but if we do that the only people we'd say are likely to get their wines on that pallet delivered would be Melbourne and Sydney customers.

We will be back up and running straight after Christmas and are anticipating sending several pallets during January. For customers not served by Anonymous Wines it might be a bit of a wait though, depending how hot it is in January.

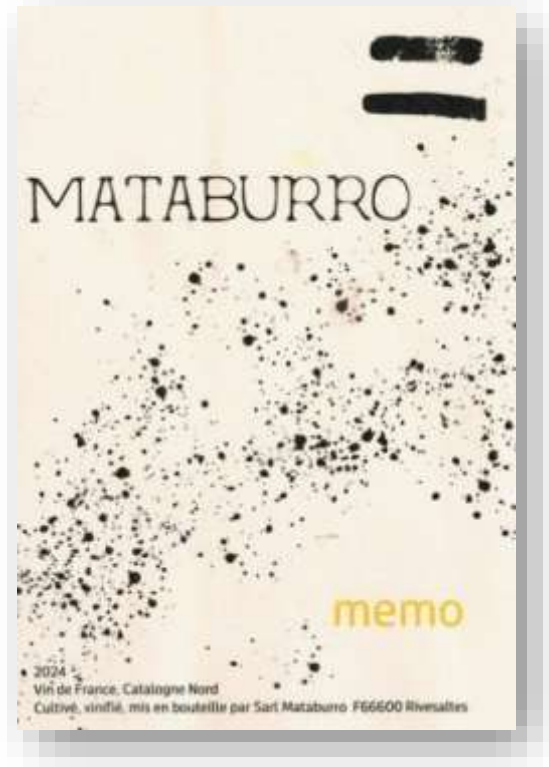
Our only other option is Express Post, which is very expensive, but can be effective if there is something you urgently need but even then, we would only do it if the weather forecast is not too scary. For example, we would not recommend shipping our new Le Temps des Cerises wines by any method other than with Anonymous Wines until probably April though – one hot day sitting in a post office might be enough for the wines to be impacted.

For Tasmanian customers it's fine. We can keep delivering right up to Christmas and, at the moment, the weather is definitely not an issue.

If you have any questions about shipping, please contact us. It's never a problem to keep wine for you if you need us to and ship it when the weather cools down.

Pack 1 – Magnum Pack

(10% Discount - 2 Packs Only)



It's rare when we advertise packs of magnums and even rarer when we are organised enough to do it just before the time of year when most people are celebrating and magnums are a perfect solution. These three are all delicious to drink now.

Mataburro Memo 2024 is a macerated white wine is made from approximately 70 year old vines growing on clay and rolled pebbles of limestone in Espira-de-l'Agly. The vines were planted by owner Laurent Roger's grandfather but they purchased the vineyard from a subsequent owner a few years ago. It is a maceration of Macabeu.

This year they made two passes through the vineyard, five days apart and macerated each pick in separate tanks. The early pick was macerated for four days and the second one for 5 days. After pressing the wine was aged in fibreglass. At the start of the palate it is all flowers and fruit but it finishes speaking of the soil, with a steely mineral statement. It's 10.5% ABV.

Mosse Gros Bisou is a light red estate wine. It is 30% Grolleau Noir, 30% Grolleau Gris, 15% Cabernet Franc, 15% Côt and 15% Chenin Blanc. Each variety was vinified separately with short whole-bunch macerations between 7 and 10 days. After pressing it was aged in a mix of foudres and barrels before assembling prior to bottling in April 2025. The wine is light, fruity and tangy. The Mosse tasting notes are "Raspberry colour. An expressive nose of cherry and cranberry, and white pepper." The Mosses recommend a perfect serving temperature is about 12 degrees but if it's a choice between room temperature and refrigerated choose refrigerated every time! This wine is not filtered. It's also 10.5% ABV.

Mosse Magic of Juju is a négoce wine which changes its composition a little each year. Sourced from certified organic vineyards, the 2023 vintage is a blend of 40% each of Chenin Blanc and Colombard and 20% Sauvignon Blanc, all from vines that are on average of 30 years old .

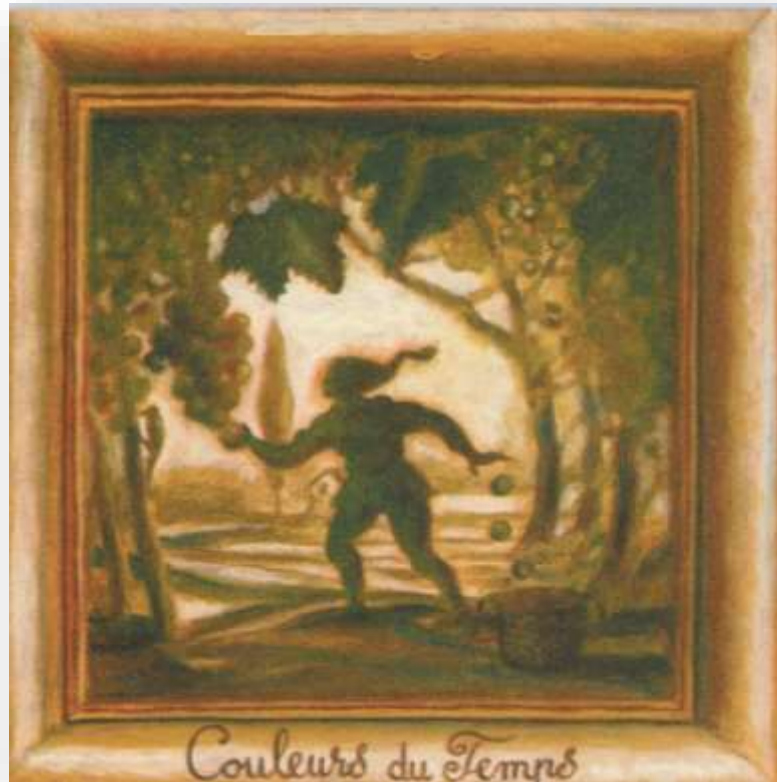
For each variety, the grapes were slowly pressed in a pneumatic press. The Chenin Blanc was aged for 6 months in barrels on fine lees. The Sauvignon Blanc and Colombard were both aged in stainless steel tanks. The wine was blended a few weeks before bottling without filtration in April 2024. We love the Mosses' translated description "Dry and extremely fresh white, with notes of white fruits and herbs, a taut and appetizing finish, supported by a smooth bitterness." We would also add that it is incredibly energetic with just a hint of residual CO2.

These are the wines:

- **Mataburro Memo 2024 Magnum**
- **Mosse Bisou 2024 Magnum**
- **Mosse Magic of Juju 2023 Magnum**

The RRP for this selection of 3 bottles is \$350 but the pack price is only \$315.00. Check with us for the subsidised freight charge to your location.

Pack 2: Repeat Festive Pack
(23% Discount - 6 Packs Available)



Unusually we had some spare pack 8s after last month's newsletter. We liked it a lot, especially as Christmas draws near, so we decided to share it again. It's also incredible value because we have substantially discounted the 3 most expensive wines. The result is a 23% discount.

We purpose-designed it for anyone's drinking needs for Christmas or a similar multi-course celebratory meal plus added a beautiful bottle of red wine vinegar to enhance whatever is happening in the kitchen. La Guinelle's Banyuls rouge vinegar is the simplest way we know to lift a salad dressing into special territory and is especially good with tomatoes, which are beginning to reappear in northern states.

For the wines there is one of Dominique Belluard's rare Gringet sparkling wines, which rivals Champagne and should prove an interesting talking point for any relatives who think they have drunk everything. More classically, there are two beautiful Burgundies – a Chardonnay (with a touch of Pinot Blanc – also good for the Burgundy know it alls) and Pinot Noir from the same Beaune vineyard and a glorious, sweet Chenin Blanc for dessert.

We've included a Mosse Bangarang because a wedge wine (that refreshing, chilled glou-glou wine you squeeze between the planned, serious food-orientated wines between courses) is an essential part of every well-planned drinker's tool box.

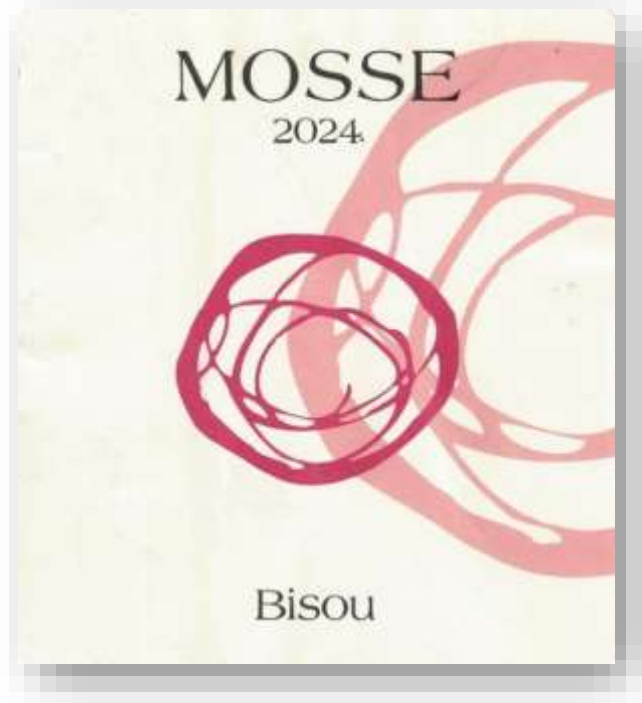
These are the wines:

- Belluard Vin de Savoie Ayse Mont Blanc Brut Nature 2019
- Domaine de la Garrelière AOC Touraine Couleur du Temps 2018
- La Guinelle Vinaigre de Banyuls Rouge 50cl
- Domaine Mosse Bangarang 2024
- Fanny Sabre Beaune Blanc Clos des Renardes 2023
- Fanny Sabre Beaune Rouge Clos des Renardes 2023

The RRP for this selection of 6 bottles is \$600 but the pack price is only **\$461.70**. Check with us for the subsidised freight charge to your location.

Pack 3: Pink Mosse Pack

(15% Discount - 2 Packs Only)



This pack is also a repeat from last month. We made sure we had quite a few of the festive packs (see above) and were not really expecting to sell them all – in fact at the back of our minds we were half-expecting to repeat the pack this month. But we did think we would sell the three pink Mosse packs. Last year a similar pink pack sold out very quickly and the mixed 6 pack was much slower to sell. This year we sold all the mixed packs we had reserved very quickly and had to make up more. It's definitely a continuing educational exercise trying to work out what people want!

Refusing to believe that at least someone doesn't need pinkish and lighter reds and pink vermouth we've kept the allocation for the 2 spare pink packs from last month and offered it again. This is the only way to buy Moussamoussettes now, which is otherwise sold out, and we are almost sold out of Bisou.

Bangarang, Bisou and Moussamoussettes are all from the 2024 vintage and arrived recently. The Apertivo Rosé vermouth, which arrived earlier this year, has base of Cabernet Franc from the 2022 vintage fortified with eau de vie macerated with Sichuan pepper, cocoa nibs, star anise, buckwheat, cinchona bark, citrus fruits, and wormwood leaves.

Bangarang is a still wine and a blend of Pineau d'Aunis, Grolleau Noir, and Cabernet Franc. It's best described as a rosé.

Bisou is also a still wine a blend of estate Grolleau Noir, Grolleau Gris, Cabernet Franc, Côt, and Chenin Blanc. It's a light red – also ideally served chilled.

Moussamoussettes is a much-loved rosé pet-nat made from Grolleau Noir, Cabernet Franc, and Pineau d'Aunis.

The pack is a celebration of all things pink at the right time of the year.

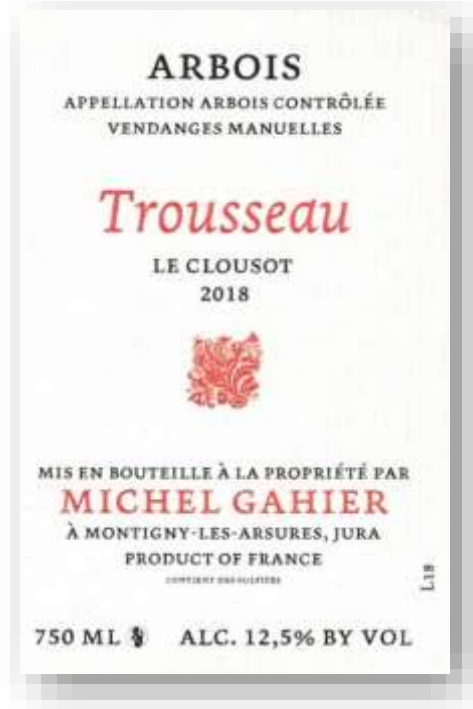
The pack has the following wines:

- **Mosse Moussamoussettes 2024**
- **Mosse Bangarang 2024 (2 bottles)**
- **Mosse Bisou 2024 (2 bottles)**
- **Mosse Aperitivo Rose Vermouth 2022**

The RRP for this selection of **6** bottles is \$352 but the pack price is only **\$299.20**. Check with us for the subsidised freight charge to your location.

Pack 4: Jura Red Pack

(No Discount – No Freight Discount – 1 Pack Only)



This pack has a bottle from three of our Jura growers, each which has had substantial aging by us.

The Bornard wine, one from when Philippe still owned the domaine, is the Trousseau the estate makes for keeping. It was aged in old wood prior to bottling and in this case, kept in the cellar for some years after bottling prior to its release (we received it early in 2018). We've often drunk very old Bornard Trousseaus with Tony Bornard and they have never disappointed. You could drink it now or put it away for another 10 years.

Michel Gahier's Le Clousot is also Trousseau, from his youngest vines, and should be drinking beautifully. Alice's Dorabella is an ethereal Poulsard, which we are sure (because rather than in spite of its lack of sulphites) will have kept all its energy but also have rewarded the long rest in our warehouse. We received the Gahier and l'Octavin wines in 2021.

There are no discounts for this 3-pack and no subsidised freight unless there are other wines you want to add to the order to make it a 6 pack.

These are the wines:

- **l'Octavin Dorabella 2019**
- **Michel Gahier Arbois Trousseau Le Clousot 2018**
- **Philippe Bornard Arbois Pupillin Trousseau Le Garde-Corps 2013**

The RRP for this selection of **3** bottles is \$227 and the pack price is also **\$227.00**. Check with us for the subsidised freight charge to your location.

Pack 5: Temps des Cerises New Arrivals Pack

(15% Discount - 2 Packs Only)



It's been a long time since we have had any of Axel Prüfer's much-loved wines and he's made quite a few changes since we did. We've written about his purchase of new vineyards and the loss of his beautiful Grenache vineyard in the New Arrivals section. All the wines are described there too and the pack has something of everything. There are four red wines, with quite different levels of redness and purpose, and two bottles of La Peur du Rouge, his whiteish wine made with Chardonnay and now also a miniscule amount of Viognier. He macerates the grapes briefly which makes its hue more golden than white.

These wines are made without any additions, including no added sulphites, and some have noticeable amounts of dissolved CO2 varying in mouthfeel between a prickle and near-fizz!

Those of you will "eagle eyes" will notice on the side of Axel's label above the motto "100% uva e basta" – this is the motto of an Italian friend who pronounces that his wines contain "grapes and that's all" or "just grapes".

These are the 6 wines:

- **Le Temps des Cerises Avanti Popolo 2023**
- **Le Temps des Cerises La Capitulation Ne Paie Pas 2023**
- **Le Temps des Cerises Jalava 2023**
- **Le Temps des Cerises à Oïli Oïli Oilà 2024**
- **Le Temps des Cerises La Peur du Rouge 2024 (2 bottles)**

The RRP for this selection of 6 bottles is \$341 but the pack price is only **\$289.85**. Check with us for the subsidised freight charge to your location.

Bits and Pieces

2025 France harvest

In the October newsletter we mentioned some things about the 2025 harvest in France which was partly better than previous years except particularly for the southern areas such as Roussillon and the Languedoc being subjected to fires quite close to the harvest date.

Since then, some post-harvest news has become available which shows that the 2025 French wine harvest was smaller than the five-year average, impacted by a severe summer heatwave and drought.

While total output is slightly higher than the very low 2024 harvest, the quality is generally good, with some regions like Burgundy, Jura, and Champagne seeing increased volume and others, such as Bordeaux and Languedoc, experiencing significant declines. The harvest was also remarkably early this year due to the extreme temperatures.

Once again, this shows that it is impossible to provide results that are true for the entire area of France. It is a big country that varies widely in climate and vine types.

Some other brief comments from the news services were:

- **Extreme heat and drought:** The August heatwave accelerated grape ripening, causing some to shrivel and leading to smaller yields.
- **Early harvest:** The heat prompted the earliest start to the harvest in many regions' history.
- **Regional differences:** There was a significant disparity between regions, with some faring much better than others.
- **Burgundy and Jura:** Expected to have a much-improved volume compared to 2024, with production increases of 45% and 200% respectively.
- **Champagne:** Production is expected to rise 14% year-on-year, though it is still below the five-year average.
- **Bordeaux, Alsace, Languedoc-Roussillon, and Provence:** Production in these regions was lower than 2024 volumes, significantly impacted by drought and heat.

Another natural wine bar in France

We received good feedback on our little story about the Chagny La Cave du Centre bar run by prominent writer on natural wines Aaron Ayscough. This made us think about places we have visited recently which we also loved.

One of the most prominent was a new wine bar cum restaurant in the central city of Clermont-Ferrand run by the highly talented English chef who has worked in France for decades. His name is Harry Lester and he was the person who established the remote get-away called Auberge de Chassignolles that has become one of our favourite places to escape to so that we can work quietly but also enjoy beautiful food and lovely natural wines from the Auvergne region and beyond from the well-stocked cellar.

But back to Harry's new bar in Clermont-Ferrand. It is quite central and called Le Comptoir Central des Bazaars. It is closed at weekends but is open for breakfast, lunch and light dinners from Monday to Friday.



Harry's bar

There is also the type of cellar you would expect from Harry with a long wall of row upon row of wine bottles for you to peruse.



The "Wine Wall"

Some of the wines are quite rare. For example, we were able to try the Vinyle which is made from Chardonnay by Jura winemaker Marie Boudon who has a tiny plot of just over 1 hectare near Arbois. It was stunning with a saline character and beautiful minerality extracted from the marl and limestone soils. We wish that more Chardonnay wines had this sort of delicacy and vibrancy.

We enjoyed both breakfast and two evening meals here and everything was stunning as were the wine recommendations. We were very happy here and will definitely return on future visits to France.

Address: 9 Rue Lecoq, 63000 Clermont-Ferrand

France: Facing the future by uprooting vineyards

There is some worry about the future of the wine industry in France as the general temperatures continue their inexorable rise year on year leading to the harvest dates beginning earlier and earlier. This makes it much more difficult to predict the harvest dates as previous years are no indicator of when the harvest will occur in the current year.

This has serious implications for predicting how many people they need to hire for the harvest and when they will be required. And remember that August is the month that almost everyone in France expects to take their holidays, yet the harvest dates are moving back into that month in many regions.

As a result, in the last year 8,000 hectares were uprooted in the Bordeaux region alone. On the other side of France 10,000 hectares were uprooted in the Languedoc-Roussillon region.

Wine tourism in France

When we were in France this year there was some discussion about the rise in revenue that some top end producers were experiencing from “wine tourism”. For some it is evidently 30% of their income.

This is money derived from visits to vineyards and sales of wine at those vineyards. The visits were from people driving themselves to their favourite vineyards and by organised tours where a number of people were taken to vineyards.

Unfortunately, as we have written about before, we can only recommend a visit to one of our producers, as there is only one that has a facility to welcome visitors without an appointment. This is Domaine Milan in the town of Saint Remy-de-Provence in southern France where they have a tasting room where you can taste some wines and buy the ones you like.

None of our other producers have such a facility because they are out in the vines every day looking after those vines whether it be through pruning or other activities.

Sometimes they go to “wine salons” where they display their wines and our advice is to look out for these salons if you are visiting France and visit one where you may be able to talk to some vigneron and taste (and buy) some wines.

How do grapes ripen? – Part 1

This is the beginning of a story about how grapes ripen and what occurs to the various “layers” of the grape while ripening is occurring and also what occurs to the chemicals inside the grape while the ripening process is occurring.

We originally thought that we could write this in one newsletter but on exploring the topic we realised just how much information is needed to fully explain the processes involved. Therefore this is just an introduction to the topic, explaining the parts of the grape, and then we will fill in the more complicated details in the subsequent two newsletters.

A grape is comprised of four main parts: the skin, pulp, seeds, and stem. The skin (exocarp) is the outer layer containing colour and antioxidants, while the pulp (mesocarp) is the juicy, fleshy interior rich in water, sugars like glucose and fructose, and acids. The seeds (endocarp) are inside the pulp and contain tannins and oils, and the stem (pedicel) attaches the berry to the bunch.

The paragraph above provides a brief overview of the components of a grape but does not provide any information about the main topic for this story, namely how do they become ripe and how is ripeness measured.

First, we will provide an overview of the fruit kingdom. Fruits are usually divided into two types depending primarily on how they ripen and what chemicals cause the ripening to occur. These two major types are called climacteric fruits and non-climacteric fruits.

These terms divide the fruit world and are useful for gaining an understanding of how certain fruits “behave” while ripening. Some examples of each of these two types are useful to help understand the differences.

Examples of climacteric fruits are:

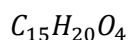
- Apples
- Avocados
- Bananas
- Peaches
- Pears
- Tomatoes

Examples of non-climacteric fruits are:

- Strawberries
- Grapes
- Sweet peppers
- Oranges
- Pineapples

There is a significant range of research into the differences between climacteric and non-climacteric fruits.

One of the major differences is that the main contributing factor in the ripening of climacteric fruits appears to be ethylene being generated within the fruits, whereas the main contributing factor in non-climacteric fruits is mainly acids such as abscisic acid which is a plant hormone with the formula:



In a major academic paper on the subject of ripening in fruits, Gupta and others downplay the role of ethylene in the ripening of non-climacteric fruits such as grapes.

Although ethylene accumulation is minimal during non-climacteric fruit ripening, ABA¹ levels reach a high; hence, ABA plays an essential role in the ripening and senescence² process in non-climacteric fruits.³

But despite abscisic acid playing the main role, each of these types also involves some ripening involving ethylene.

As mentioned, there are a number of layers to a grape each of which has a role in the ripening and the protection of the fruit. We will further each of the main layers here and then explain their main characteristics briefly. In Part 2 in the next newsletter, we will dive deeper and explain the chemical reactions that occur.

These layers are, from the outside to the inside:

- The skin of the grape (also called the **exocarp**) which, in turn, has three layers:
 - The outermost layer called the cuticle is composed of fatty acids called cutins and is covered by hydrophobic waxes which prevent water from escaping from the grape. This also serves an important role for natural wine making which is to “capture” air born yeasts that then play an important role in fermenting the juices derived from the grapes.
 - Underneath the cuticle layer is a layer called the epidermis which provides much of the strength of the skin.
 - The third layer of the skin is called the hypodermis which is composed of cells which provide most of the phenolics for the wine primarily through physical and chemical binding within its cellular structure, specifically by accumulating them in vacuoles and cell walls. These cells contain specialized compounds that bind to phenolics, such as tannins, while other phenolic compounds like anthocyanins and terpenoids⁴ are also stored there as the grape matures.

¹ ABA is shorthand in chemistry circles for ABscisic Acid.

² Fruit senescence is the final stage of a fruit's life, where it transitions from ripening to aging and decay, leading to the breakdown of its tissues.

³ Gupta, K et al (2022) Abscisic Acid: Role in Fruit Development and Ripening. *Frontiers in Plant Science*. 13:817500.

⁴ Terpenoids are important due to their role as aroma “precursors” which are converted into specific aroma compounds as the grape matures.

- These cells tend to accumulate phenolic compounds in relatively high concentrations as the grape berry matures. Among their other effects, these compounds strongly influence aroma, flavour, and colour attributes.
- The pulp of the grape (also called the **mesocarp**). Its main features are:
 - It contains the majority of the grape's volume and is the primary source of sugars and acids.
 - It is comprised mainly of water, with sugars like glucose and fructose, and acids such as malic and tartaric acid, which help balance sweetness. The pulp is typically colourless, and its volume is a major factor in the potential wine yield.
 - It is composed of larger, rounder cells that contain large vacuoles where sugars and acids are stored. As the sugars enter the berry, sucrose that is transported into the cells from the vine canopy is broken down into glucose and fructose, which are the primary sugars found in mature grape berries. When these vacuoles are broken during crushing the juice escapes carrying the sugars with it.
- The final “layer” contains the pips or seeds of the grape which, importantly, contain the genetic material of the grape.
 - This layer is called the **endocarp** and contains bitter tannins and oils, which need to be handled carefully to ensure that the level of bitterness does not get out of hand. The seeds are contained within “locules” in the endocarp.
 - As the seeds grow during fruit maturation, they produce growth regulators that strongly influence fruit size. Thus, the size of a particular grape berry is determined in part by the number of fertilized seeds that develop within it.

And just a small, final comment before we close this first part of the article. There is some interesting behaviour in the grape vine as a whole during the time from the first buds appearing through to the flourishing of the ripe grapes.

Scientists who have been studying the behaviour of grape vines have noticed a fascinating (well, we think so) behaviour as the grapes mature on the vine.

In order to understand the next paragraph, it is important to know that many plants, including grape vines, have two “arteries” that carry nutrients throughout the vine. These are called the xylem and the phloem and act just like our veins do in transporting blood around our bodies.

In grapes, the xylem is the primary source of nutrients for the berries until the onset of veraison when the phloem takes over. The xylem transports nutrients mainly from the roots and include minerals and hormones from the soil. The phloem, on the other hand, transports nutrients primarily from the canopy of the vines which mainly consist of sugars (ie sucrose). It is a complex process, but this provides a simple overview.

In the next newsletter we will concentrate more on the chemicals which get transported into the grapes at different times and what those chemicals do for the wine that eventually is produced from those grapes.

The Bourgogne Passe-Tout-Grains Appellation

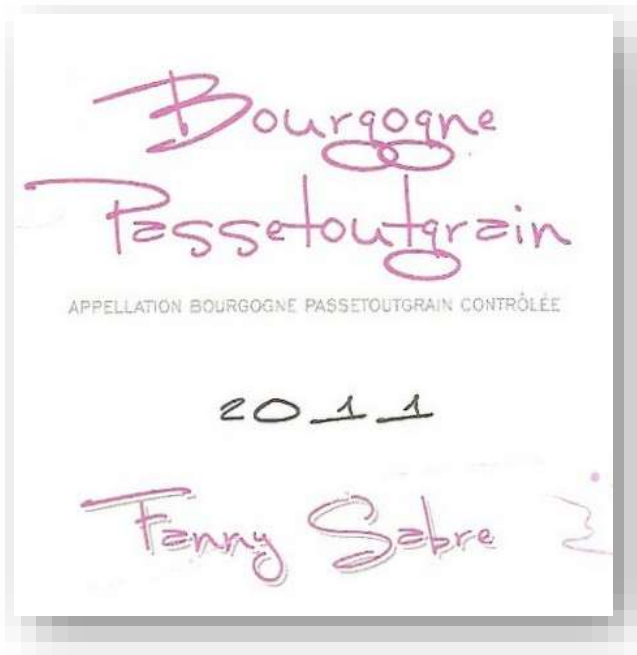
The Bourgogne Passe-Tout-Grains appellation is an old appellation having been created in 1937. It applies to wines created in the Burgundy region that conform to all of the rules embodied in the Bourgogne Passe-Tout-Grains **cahier des charges** document.

The rules did undergo a significant upgrade in July 2010 to take into account some changes in the grapes that are allowed to be used and the way in which they are used.

The Bourgogne Passe-Tout-Grains appellation rules are relatively simple and permit the production of red wines and rosé wines as can be seen in Section III which defines the rules for wine colour and wine type as can be seen below:

L'appellation d'origine contrôlée « Bourgogne Passe-tout-grains » est réservée aux vins tranquilles rouges ou rosés.

The locations in Burgundy where these wines can be made are very broad covering 4 départements, namely the Côte-d'Or, Rhône, Saône-et-Loire and the l'Yonne.



The grapes that can be used are divided into principal grapes and accessory grapes. The principal grapes are Pinot Noir and Gamay (remember only red wines and rosé wines are permitted). The accessory grapes are Chardonnay, Pinot Blanc and Pinot Gris which are mainly used for the rosé wines produced under this appellation.

As an aside, it is also necessary as many of the older vineyards have up to 10% or 15% of Pinot Blanc and/or Pinot Gris planted in among the Pinot Noir vines as in the past vigneron were far more conscious of the need for biodiversity in the

vineyards.

In chapter 5 of the rules which govern the grape types there is also a set of rules about the percentage of each grape type that can be used:

- Pinot Noir must be more than 30% of the mix;
- Gamay must be more than 15% of the mix;
- The accessory varieties (Chardonnay, Pinot Gris and Pinot Blanc) are limited to a maximum of 15% of the plants in each parcel;
- The vines must conform to a minimum density of 5000 per hectare;
- The vines must be less than or equal to 2.2 metres apart.

These are just some of the rules to give you an idea but there are rules covering many areas of the production even down to a set of rules about hygiene, storage and transport!

There are also sets of rules about how the wine should be made which must be documented by the winemaker and/or checked by the authorities on a visit to the site. These include the temperature of the wine as it matures (températures et durée d'élevage) and the size of the vessels in which the wine is maturing (capacité de cuverie).

WARNING

Under the *Liquor Licensing Act 1990* it is an offence:

for liquor to be delivered to a person under the age of 18 years.

Penalty: Fine not exceeding 20 penalty units

for a person under the age of 18 years to purchase liquor.

Penalty: Fine not exceeding 10 penalty units

Because of the above penalties we are required by the Tasmanian Government to collect your date of birth from you when ordering via the Internet. We apologise for this imposition. In the past we have been able to accept a declaration that you are over 18.