LIVINGWINES

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Wine Talk: March 2014

The newsletter of Living Wines: Edition 43

This is a very exciting time of the year for us because it is the month when Alice and Olivier de Moor's wines arrive. These exceptional wines from Chablis and Chitry are made with passion and integrity and this certainly shows in the glass.

In fact, it is a real white wine month because we have also received a new shipment of the delicious white wines from Vincent Carême in Vouvray in the Loire Valley. His Chenin Blanc vines thrive in the tuffeau limestone above the cliffs of the Loire near Tours. Many of you bought the delicious, easy to drink Ancestrale sparkling wine which is a particular favourite of ours. His still wines are also excellent and made with real skill.

We have six special packs for you this month. We have been lucky enough to keep a small number of bottles of two of the de Moor wines aside to offer to our retail customers, but order quickly if you would like one. We also have a pack of wines made from Gamay. This grape is becoming very popular as more people come to realise just how versatile it is. We also have a six pack of wines made from Chenin Blanc.

We then have a white six pack and a red six pack comprised entirely of wines from Burgundy to demonstrate a range of wine styles that can come from this renowned region, but don't expect the whites all to be Chardonnay.

And finally we have put together a six pack of 'Intriguing' wines. These are wines that make us sit back and contemplate them. They might be intriguing because of the grape variety, the method of winemaking, the age of the vines or the complexity of the terroir. But they are intriguing! Enjoy!

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

http://www.livingwines.com.au/Catalogue/Buy_wines.htm

There is a link to our order form for these packs and any other wines at the end of this newsletter. But there's no need to use the order form. Just send us an email listing the wines and/or packs you would like to order if that suits you better. We'll confirm the price by return email before processing your order.

The wonderful wines of Alice and Olivier de Moor

Last month we wrote about the precise and delicious Champagnes produced by Roland Piollot. This month we move slightly south of Champagne to the twin regions of Chablis and Chitry which share similar soil with the southern parts of Champagne and also share similar cold winters and mild summers that are perfect for slow ripening.

Chablis and Chitry regions shown in blue

Chablis is famous for the crisp, clean, mineral, bracing Chardonnay-based white wines that are produced in this small area with wall-to-wall vines. Chablis wines can be produced in some 17 communes in the Yonne department, including those of Chablis and nearby Courgis (the town where our suppliers Alice and Olivier de Moor live).

All of Alice and Olivier's Chablis vineyards are in the Courgis commune including Bel Air, Clardys and Rosette. You can see how healthy the vineyards are in the photo below which was taken in Courgis. Note the grass growing all the way under the vines showing that no herbicides have been used to control weeds here.

Alice in their vineyards in Courgis

Alice and Olivier carefully manage their vineyards with painstaking work throughout the year as they strongly believe that healthy fruit is essential to make great wines.

They harvest all their grapes manually and then ferment them using only the natural yeast from the vineyard to provide more complexity in the wine. The reason that there is more complexity when natural ferments are used is that many more varieties of yeast contribute to the mix of polyphenols that are created during the fermentation process. Sometimes up to thirty different yeast varieties are detected instead of one dominant yeast which is a feature of commercial yeasts.

Alice tapping a sample from one of the old barrels used to mature the wine

The wines have a classic purity which is a function of the time taken to settle in the tanks and barrels and then the careful gravity-feeding of the wine into tanks prior to bottling.

The de Moor wines are incredibly popular in Japan where natural wines are revered and their wines are also hot items in famous wine bars in New York. We are fortunate to receive a small annual allocation of these wines and we offer them first to those who have been buying them each year.

This year we are fortunate to have received enough of the beautiful Aligoté and the flinty Chitry to offer a six pack to our retail customers. For details see the offer in Pack 1 below.

Stunning Carême Vouvray wines have arrived!

We love Vincent Carême's wines. His vineyards are in the heart of Vouvray just outside the Loire city of Tours. Here he tends his Chenin Blanc vines which grow on a thin layer of clay soil which sits on a deep base of tuffeau cliffs that guide the Loire River on its journey to the ocean.

These cliffs are also home to his cellars which burrow deep into the underground to provide ideal temperatures for long fermentation and slow maturation.

Barrels of Carême's Vouvray in the tuffeau caves

His vineyards are carefully tended using organic and biodynamic methods to ensure the health of the soil and the quality of the grapes.

The Le Clos vineyard with the Loire in the background

Careful pruning and vineyard management is a key factor in Vincent's work.

Vincent in the Le Clos vineyard

All of his grapes are picked by hand, carefully crushed and then matured in oak barrels which vary from standard size to large conical barrels as shown in the photo below.

Vincent extracting a taste for us from a large barrel

His sparkling wines and Vouvray Sec see no new wood but a small proportion of the single vineyard cuvées, Le Peu Morier and Le Clos, are aged in new barrels.

There are two of Vincent's Vouvray wines in our Chenin Blanc six pack this month.

Living Wines tasting at Temporada, Canberra

We will be doing our first industry and general public tasting in Canberra at the end of this month, thanks to a generous offer from Ben Willis to host a tasting at his new restaurant Temporada. The date is Thursday 27th March and the tasting will be from 2:30pm to 5:30pm on a drop-in basis. Temporada is at 15 Moore St, Canberra, ACT. Let us know by email to:

wine@livingwines.com.au

if you would like to attend. We will have a number of our natural wines (sparkling, white and red) for you to try. We will also be available to answer your questions about the winemakers and their winemaking techniques.

Sydney Burgundy Celebration

The inaugural Sydney Burgundy Celebration is a series of events held over three days including tastings, dinners and master classes; specifically dedicated to celebrating the most prestigious wines and winemakers from the Burgundy region of France.

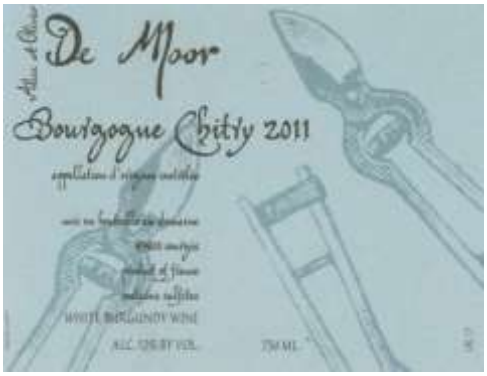
The event is inspired by La Paulée de Meursault and La Paulée de New York and San Francisco produced by Daniel Johnnes, an annual homage to the wines of Burgundy.

Living Wines is one of the sponsors for this event which will be held from the 25th to the 27th March at various venues in the Sydney CBD.

For more details: http://burgundycelebration.com/

Pack 1: Alice and Olivier de Moor 6 pack

Note: There is very limited supply of this pack as the wines are very rare. These will be treated on a first come first served basis.



This special pack includes some of the rare recent arrivals from Chablis and Chitry winemakers Alice and Olivier de Moor. We have set aside a small number of bottles of the Aligoté and the Chitry so that our retail customers can get access to these wonderful white wines.

Alice and Olivier de Moor Bourgogne Aligoté 2012 (3 bottles) – Aligoté is the second white grape of Burgundy and wine made from this grape is popular locally but not seen much outside of France. In the right hands it can be a wonderful wine – and this one certainly is. This wine is made from grapes picked from twenty year old vines that grow near the village of Chitry-le-Fort. It is pressed quickly and then fermented in both old barrels and steel tanks. The wine is not fined or filtered or cold stabilised. We've long been fans of this grape and this wine has been receiving accolades on both sides of the Atlantic.

Alice and Olivier de Moor Bourgogne Chitry 2012 (3 bottles) – Chitry is a white wine appellation that lies adjacent to the Chablis appellation and shares with it the wonderful limestone terroir. We like the wines made around Chitry because the area has not been completely given over to vineyards as in neighbouring Chablis. There are still forests and farms with vineyards dotted in between. Those in the know snap up this wine as it has similar characteristics to a Chablis but at a lower price. It is a pure Chardonnay and is classified as a Burgundy Village wine (the village being Chitry).

Chambers Street Wines in New York had this to say about the Chitry:

> *2012 is a sensational, but sadly small vintage for the De Moors, as yields were down and quantities available for the US are even smaller than usual. The Bourgogne Chitry is simply great in 2012 - superb balance, dense, mineral and very long.*

The RRP for this selection of 6 bottles of wine is $237 but the pack price is $201.45 including freight.

Pack 2: Gorgeous Gamays 6 pack

We have long been fans of Gamay. It produces very different wines depending on the winemaking technique and the soil in which the vines grow. In areas such as Moulin à Vent and Fleurie in Beaujolais the grape leads to wines that have lots of power, structure and depth. In the Loire Valley the wines tend to be lighter and more juicy. We have chosen a range of Gamay wines for you to enjoy.

Domaine de la Garrelière Vin de France Gamay Sans Tra La La 2011 – This wine is made from 100% Gamay and is fermented naturally without the 'help' of commercial yeasts. It is fresh, lively, full of flavour and, above all, delicious. Good for drinking anytime, anywhere. The joyous label captures the essence of this wine.

Domaine St Nicolas Fiefs Vendéens Gammes en May 2011 – This wine is a light, refreshing and delicious pure Gamay red wine. It is great for summer drinking served slightly chilled. It has less filtering than other Domaine Saint Nicolas wines, which gives it a meaty texture that belies its apparent light juiciness.

Domaine la Paonnerie Coteaux d'Ancenis "Simplement Gamay" 2012 – This wine is made from 100% Gamay Noir a jus Blanc. The wine is fermented with natural yeasts and is neither filtered or fined. This is a light, lively red wine that goes beautifully with food such as lamb chops or roast chicken or a robust cheese. No sulphur!

Terres Dorees Beaujolais l'Ancien 2012 – This is the quintessential Jean-Paul Brun wine! It is a noble Beaujolais with great structure (from the old vines used to make this wine), elegance and enormous appeal, but at a price that is very accessible.

Michel Guignier Beaujolais Villages La Bonne Pioche 2012 – This is a beautiful, lively expression of the Gamay grape which is picked from vines over 45 years old and then pressed in an old basket press. The fact that absolutely no sulphur has been added to this wine makes it compelling drinking. It is a joy to drink wines made by a master such as Michel where wood, sulphites and extraction aren't part of the story!

Hervé Villemade Cheverny Domaine Rouge 2011 – This wine is a blend of 50% Pinot Noir and 50% Gamay. It is a lively, wine with a bit of funk that goes well with charcuterie and stands up well to strong flavours like chilli and black vinegar.

The RRP for this selection of 6 bottles of wine is $197 but the pack price is $167.45 including freight.

Pack 3: Chenin Blanc 6 pack

Chenin Blanc is an amazing grape that produces extraordinary wines across a wide spectrum of wine styles. Some of our producers are highly regarded for their work with this grape so we have put together a sample of some of the best.

Domaine Mosse Magic of Juju – This Chenin Blanc has been made by René Mosse using grapes grown organically by two of his friends. The vineyards are a mix of clay, gravel and shale. The wine was fermented in fûts and then aged for 12 months. There is a tiny bit of residual sugar in this charming Chenin and a lovely hint of oxidative qualities.

Domaine Mosse Savennieres Blanc 2010 – The Savennieres appellation occupies a small area (only 150 hectares) just south of the city of Angers. Some of the great wines of France are produced here. This is a dry wine style made from Chenin Blanc. The wine contains 4.5 grams per litre of residual sugar.

Domaine de la Garrelière Touraine Le Chenin 2011 – This lovely wine from the Touraine appellation is made from 100% Chenin Blanc. On the Plouzeau estate, the clay and limestone soils seem to coax even more flavour from the 20 year old vines of Chenin to produce elegant wines with great flavour.

Domaine Saint Nicolas Fiefs Vendéens Le Haut des Clous Blanc 2008 – This is the prestige white from this domaine and is made from 100% Chenin Blanc sourced from the Haut des Clous vineyard which was planted on clay and schist. It was aged for 18 months with up to 20% of the wine exposed to new oak.

Domaine Vincent Carême Vouvray Sec 2012 – The Sec is a dry white wine that displays notes of pear and wild peaches. From interesting flint soils in both Vouvray and Noizay it has a generous palate and displays rich fruitiness and citrus overtones. It is a wine for drinking now.

Domaine Vincent Carême Vouvray Le Peu Morier 2011 – Le Peu Morier is a still, dry white wine made from old Chenin Blanc vines that thrive in a terroir rich in flint and situated on some of the prize slopes of the famous Vouvray appellation. The wine is matured in oak barrels for 1 year and is then transferred to tanks for 12 months to ensure that all of the lees are deposited before bottling. It displays very mineral overtones and notes of citrus and white fruits. It is a very complex wine.

The RRP for this selection of 6 bottles of wine is $246 but the pack price is $209.10 including freight.

Pack 4: Burgundy White 6 pack

This pack represents a selection of white wines from Burgundy. The selection shows the incredible variety of wine styles from the many appellations in this region.

Fanny Sabre Bourgogne Blanc 2011 – The Fanny Sabre Bourgogne Blanc is always a favourite. It is made from 100% Chardonnay sourced from her vineyards around the city of Beaune. It is an elegant, flavour-packed wine which has seen no new oak. It lingers on the palate and matches beautifully with a range of foods.

Domaine de la Cadette Bourgogne Vezelay Les Saulniers 2012 – Les Saulniers is a white cuvée made entirely from Chardonnay. The Les Saulniers vineyard is a beautiful parcel of land situated on an old road once used by salt smugglers, who extracted contraband salt from the water at the nearby "Fontaines Salées". It has a liveliness and freshness that is very appealing for such an elegant wine.

La Soeur Cadette Vin de France Melon de Bourgogne Blanc 2012 – This wine is made from one of the surviving plots of this grape in Burgundy. Only about fifteen hectares remains and most of it is in the Vézelay area where this wine was made. It is a crisp, clear, vibrant wine displaying a wonderful minerality derived from the limestone rich soils here. This is a perfect wine with seafood.

Fanny Sabre Bourgogne Aligoté – Fanny Sabre shows a fine touch with her Aligote. Aligote is the wine that the locals drink in Burgundy. It is gradually emerging as an interesting wine in its own right rather than playing second fiddle to Chardonnay as more talented winemakers such as Fanny show what can be achieved with this grape especially when it is grown in great terroir – her vines are in Pommard. This is a beautiful wine with great complexity and depth. At a recent tasting everyone was blown away by it and kept returning to it to work out what was making it so appealing.**Alice and Olivier de Moor Bourgogne Chitry 2011** – Chitry is a white wine appellation that lies adjacent to the Chablis appellation and shares with it the limestone terroir. It has similar characteristics to Chablis but is much cheaper. It is pure Chardonnay and is a Burgundy Village wine (the village being Chitry).

Sextant Bourgogne Blanc 2011 – Julian Altaber is a young winemaker who is receiving a lot of attention these days. He's worked for many years for Dominique Derain, and has recently started making his own wines. The taste of this Chardonnay lingers on the tongue, there is taught minerality, lovely tight acidity and the length is very pleasing.

The RRP for this selection of 6 bottles of wine is $243 but the pack price is $206.55 including freight.

Pack 5: Burgundy Red 6 pack

This month we have assembled a great selection of interesting red wines from Burgundy that have recently arrived in our warehouse.

Domaine Montanet-Thoden Bourgogne Cuvée Garance Rouge 2012 – This is a very good example of a red wine from Vézelay. The end result is influenced by the fossilised limestone soils giving the wines a lively minerality. The grapes for this wine are hand-picked from the small plots of vines, destemmed, and fermented with native yeasts. The vintage in northern Burgundy was miniscule in 2012. We had almost 500 bottles of this wine in 2011 and four dozen in 2012!

Catherine & Dominique Derain St-Aubin Le Ban Rouge 2010 – The 2010 reflects the vintage which was not as hot as 2009 but which encouraged slow but steady growth in the vineyard leading to wines with good structure and length. This is a lovely wine with an appealing cherry and strawberry fruit flavour, a core of acidity, great freshness, an underlying spiciness and perfect balance. Great drinking now.

Fanny Sabre Monthelie Rouge 2011 –If you drive south out of Beaune through the famous wine villages of Pommard and Volnay you arrive at Meursault on the left side and Monthelie on the right. This wine is an intriguing one for us. It displays some of the strength of close-by Volnay and some of the structure of Pommard, but it is an energetic, lively yet elegant wine displaying characteristics found only in Monthelie.

Domaine de la Cadette Bourgogne Champs Cadet 2012 –The Champs Cadet vineyard is one of Cadette's most remote and difficult with lots of stones littering the surface. This is a lovely wine, 100% pinot noir, with a velvet texture provided by maturation in old oak barrels, but also with the trademark freshness that makes these natural wines so appealing. We only received 3 dozen bottles of this vintage.

Sextant Bourgogne Rouge 2012 – This wine belies its humble Bourgogne Rouge tag. It is a silky Pinot with some elegance and structure. It was made in Julien's new cellar in Saint Aubin not too far from that of his mentor Dominique Derain. We like it a lot!

Terres Dorees (Jean-Paul Brun) Bourgogne Rouge 2012 – This is a Bourgogne appellation wine instead of the more usual Beaujolais from Jean Paul Brun, therefore it is a Pinot Noir rather than Gamay. This is a beautiful drinking wine. It is not often that you will find a quality red Burgundy at this price.

The RRP for this selection of 6 bottles of wine is $296 but the pack price is $251.60 including freight.

Pack 6: Intriguing wines 6 pack

Some of our wines can't be classified easily. They are just intriguing. They have a certain *je ne sais quoi*. So we went searching to find a selection of wines that are deliciously different and share very little except for being special.

Michel Gahier Arbois Les Follasses B 2011 – This white wine displays the word Chardonnay on the label in bold, red letters, but in the Arbois appellation there is a mutant variety of Chardonnay called Melon Le Rouge Queue and this is what Michel has used in this wine. It is a stunning wine that is drinking beautifully at the moment. It goes perfectly with Asian foods.

Bainbridge and Cathcart Vin de France Rouge aux Levres 2012 – This wine is intriguing because it is made from a rare grape variety and coming from extremely old vines between 85 and 100 years old. The Grolleau Noir grapes have undergone whole-bunch semi-carbonic maceration (see separate article) to produce a lively, lip-smacking, gulpable wine.

Le Temps des Cerises Vin de Table Un Pas de Côté 2011 – Un Pas de Côté is a dark purple wine that has a beautiful, soft tannin structure with complexity coming from the blend of grapes used. While it used to be a pure Grenache in previous vintages, this year it is 40% Merlot, 40% Grenache and 20% of a blend of Cinsault, Aramon and Carignan (Aramon is a grape that is native to the region). The vines grow on granitic quartz soils and the minerality is pronounced.

Domaine Mosse Vin de France Moisson Rouge –The grape variety used for this petillant-naturel (pet-nat) is a variant of the Gamay grape called Gamay de Bouze, a special type of grape known as a tienturier grape of which there are only a few varieties in the world. These grapes have red juice whereas most red grapes have white juice and the colour comes from the skin during the time the skins are left in contact with the juice. Gamay de Bouze is therefore able to produce deeply-coloured red wines without any skin contact thus providing the mouth feel of a rose but with the colour of a red wine. It's as dark as an Australian sparkling Shiraz and finishes with broody, herbal notes.

Domaine Belluard Vin de Savoie Blanc Gringet Les Alpes 2011 – This beautiful white wine is made from 100% Gringet, a traditional, indigenous grape of the Savoie region. We have chosen this wine because it is a hidden gem in our range. We

strongly believe that Dominique's wines will rank alongside the great white wines of Burgundy once they are 'discovered'.

Here is part of what veteran US wine importer Joe Salamone wrote recently about this wine:

> *In Belluard's hands, Gringet becomes something truly profound, something that speaks clearly of its mountain origins. His 2011 Les Alpes encompasses a huge range of flavors from moss and sweet herbs to ripe citrus (esp. Meyer lemon) to white flowers and bitter-tinged mountain water minerality.*
>
> *It's full of taut energy with an incisive cut. But what's more striking is how the wines possess an oily texture. If you think of a combination of Chenin and Muscadet transported to 450 meters of alpine altitude, you can get some sense.*
>
> *Belluard is certainly the type of winemaker who spares no expense when it comes to making great wine. He completed his conversion to biodynamics in 2005. After trying wooden barrels and steel tanks and being disappointed with the results, he switched (at a considerable cost) to concrete eggs. He felt that the controlled aeration they allowed yielded the best results.*
>
> *Belluard says that Les Alpes ages well for 3-5 years. Judging by where the 2010 Les Alpes is currently, that may be conservative. These are undoubtedly wines that you'll be hearing more about. They're too compelling and too original for this not to be the case.*

Le Petit Gimios Vin de France Rouge Fruit 2012 – There are at least sixteen different grape varieties planted in this vineyard. But they are randomly planted. There might be a Carignan vine and then two Cinsault vines, followed by an Aramon and then a couple of Grenache. And the vineyard also contains Oeillade, Terret Rose, Terret Noir, Terret Blanc, Syrah, Muscat and Alicante. The grapes are co-fermented to produce this amazing wine with layers that seems to go on forever. With no added sulphites, the wine has a unique mouth feel and texture, leaving absolutely no doubt that it's a natural wine.

The RRP for this selection of 6 bottles of wine is $242 but the pack price is $205.70 including freight.

Grape variety: Merlot

Merlot is the child of an unknown grape and a well-known grape. The well-known parent is Cabernet Franc which is widely planted in the Loire Valley and to a lesser extent in Bordeaux. The less well known parent is Madeleine Noire des Charentes which is also thought to be one of the parents of Malbec (also known as Côt in France).

Merlot became known late in the 18th century (just before the French Revolution) when it became widely planted in Bordeaux to take advantage of its juiciness, its soft tannins and its early ripening (unlike the other favoured grape in this area, Cabernet Sauvignon which struggles to ripen in the cool, damp environment). It has since become one of the main grapes of Bordeaux, displacing Malbec which was the dominant grape in the early 19th Century.

And Merlot has runs on the board given that the famous, long-lasting Chateau Pétrus red wine is nearly 100% Merlot.

Merlot has also been widely planted in the Languedoc area of southern France where it ripens very early and often becomes overripe. However when it is planted in the mountains at the back of the Languedoc is seems to have found its spiritual home.

The ability of this variety to produce soft, easy-drinking wines has seen it planted widely in the New World where it produces fruit-forward wines that are usually not to our liking. For example, many Chilean wines include Merlot (often blended with Carmenere). For a more interesting style of Merlot in the New World it is worth having a look at the wines produced by Leonetti in Washington.

The Vitis Web site shows that the area planted to Merlot in France has risen from approximately 17,000 hectares in 1958 70 over 117,000 hectares in 2006 to become the world's largest producer of this grape variety, surpassing Italy with around 25,000 hectares and the United states with just over 4,000.

It is now the second most widely planted grape variety in the world.

The leaves of the Merlot grape vine are quite distinctive as shown below:

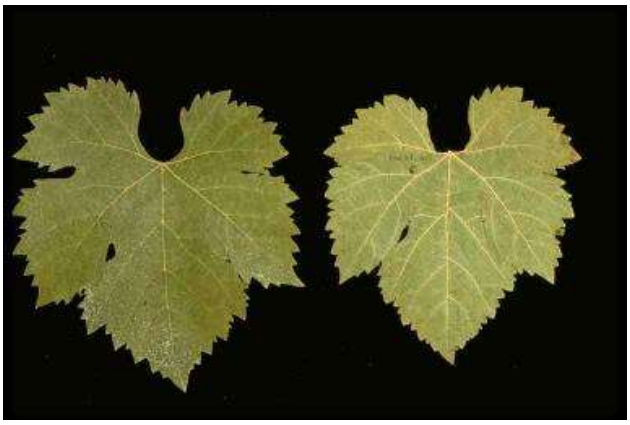


Photo courtesy of Vitis International Variety Catalogue

The bunches have large, deep-blue grapes that are not tightly packed as is shown clearly in the photo below:

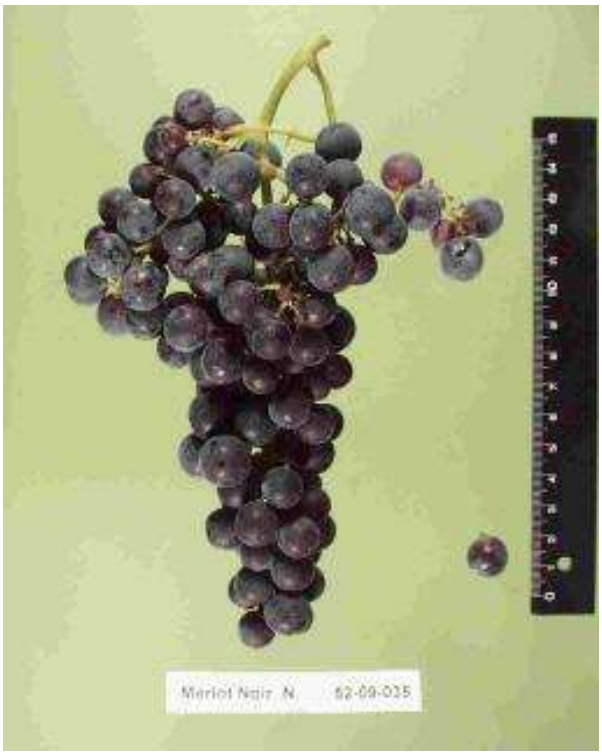


Photo courtesy of Vitis International Variety Catalogue

We are writing about Merlot because two of our suppliers make wines using this grape. The first is Axel Prüfer whose vineyards are in the mountains behind Beziers. He has a number of vineyards and makes each wine from all the grapes in that particular vineyard. His Un pas de Côté is made from a mix of grapes but the main one is Merlot which comprises 40% of the blend. Other grapes in that vineyard and hence in the wine are Grenache, Cinsault, Aramon and Carignan.

The Merlot gives this wine a delightful softness combined with a layer of spiciness from the Carignan. It is a very drinkable wine that marries very well with a wide range of foods. It is one of the wines in this month's Pack Number 6.

Another of our winemakers, Henri Milan from Provence, planted Merlot in his idyllic vineyards that crouch below the beautiful Chaîne des Alpilles close to the picture postcard village of Saint Remy de Provence. His aim is to produce a local version of the famous Pétrus!

This wine, called Le Jardin, is made from 100% Merlot grapes and is matured in 90% old oak barrels and 10% new oak. Production is small with only 2500 bottles made each year. The vines for this wine are quite young, only 10 years old, but already Henri Milan recommends it can be aged for 5 to 10 years. The 2011 vintage of this wine has been aged half in new barrels and half in old and we expect to see that proportion to continue to change as he chases the elusive Petrus.

Appellation: Chitry

Bourgogne Chitry is a wine appellation in the Burgundy region of France. It is a small and somewhat obscure appellation lying at the very top of the Burgundy region. Red, white and rose wines are permitted with the reds made from Pinot Noir and the whites from Chardonnay.

The small appellation (just over 60 hectares with only sixteen winemakers) benefits from Kimmeridgian limestone soils that are very similar to those of nearby Sancerre. Due to the difficulty of growing Pinot Noir in such a cool area the wines are very light in colour, yet very delicious.

The commune of Chitry is just a short drive south-west from Chablis. You drive through the tiny town of Courgis, where Olivier and Alice De Moor live, before reaching Chitry about half way between Courgis and the town of Saint-Bris-le Vineux which is famous for being allowed to produce Burgundian white wines made from Sauvignon Blanc.

Chitry is the only commune in which wines of the Burgogne Chitry appellation can be produced.

Unlike nearby Vézelay, Chitry white wines can be made from either Chardonnay or Pinot Blanc and up to 30% of Pinot Gris can be added. Red wines are made from Pinot Noir which can have up to 15% of Chardonnay, Pinot Blanc or Pinot Gris blended in.

Unlike nearby Chablis which is a virtual monoculture of vines, Chitry more closely resembles a farming community with lots of forests (see the photo below) and other crops dotting the countryside.

Vineyards and forests in Chitry

This is where Alice and Olivier de Moor maintain some of their vineyards (the others are in the communes of Saint Bris and Courgis) and it is where their delicious Chitry comes from. Despite the poor growing season in early 2012, September was quite warm and the grapes ripened beautifully so their Chitry 2012 is especially good for this vintage.

Wine Talk Special Article: Carbonic Maceration

When we visit winemakers in the Languedoc, the Loire Valley, in Beaujolais and in the Jura it is often the case that they are producing wines using the technique known as Carbonic Maceration or a variant of that technique.

Well, just what is carbonic maceration, who started using the technique and why has it become so popular? That is the topic of this short article which we were spurred to write after attending a workshop at the 2014 Rootstock natural wine event in Sydney and reading an article on the subject in the latest issue of Alice Feiring's must-read e-newsletter, *The Feiring Line*.

So, in this article we will tackle issues such as:

- Who first thought of carbonic maceration as a technique and why?
- The difference between normal alcoholic fermentation and the fermentation that occurs under carbonic maceration;
- The difference between malic acid conversion during carbonic maceration and normal malolactic fermentation;
- Can carbonic maceration occur in a variety of atmospheres not just carbon dioxide;
- The difference between the phenolic structure and composition of wines made with carbonic maceration and those with normal alcoholic fermentation;
- The effect of temperature on carbonic maceration progression;
- The level of extraction of compounds from grape skins that occurs during carbonic maceration;
- The difference between carbonic maceration and semi-carbonic maceration which is the most widely practised form of carbonic maceration.

Background to Carbonic Maceration?

The history of carbonic maceration can be traced back to a paper published by the brilliant French scientist Louis Pasteur in 1872 where he commented that the storage of whole grape bunches in an anaerobic atmosphere (one devoid of oxygen) retained more of their flavour than when they are exposed to air.

He did this by noting the flavour of wines contained in an oxygen-rich environment prior to crushing which he found produced wines of different flavours to those contained in a carbon-dioxide rich environment.

He urged more study on the creation of an anaerobic atmosphere for the grapes through the use of carbon dioxide to produce wines which he said had special properties.

The work of Pasteur in this area was soon forgotten and Pasteur himself never returned to it, so it was left to another Frenchman to take up the running in the 1930s.

Michel Flanzy experimented with preserving eating grapes in a carbon dioxide rich environment in Narbonne in 1934. Even though the experiment wasn't very successful in its aims, the subsequent vinification of the grapes produced an interestingly-flavoured wine.

This experiment is confirmed in a book by Bryce Rankine[1] who reports:

> *In 1934 a French research team experimented to develop a new method for conserving fresh grapes during transport and storage between the vineyard and the consumer. Whole grape bunches were stored under carbon dioxide at about 0°C. After two months they were examined and found to be alcoholic, gassy and unfit for sale, but the flavour was found to be quite palatable. The grapes ended up by being crushed and made into wine, resulting in a pleasantly unusual wine.*

Flanzy presented his results in a paper published in 1935[2] to mixed reactions from winemakers. He went on to publish over twenty other papers between then and 1967 on topics mainly relating to the effects of fermentation on wine. Gradually, more and more winemakers and researchers started to take notice of the technique.

Another strong promoter of carbonic maceration was one of the pioneers of the natural wine movement, Jules Chauvet. He particularly studied the factos that lead to vibrant colonies of native yeasts and the relationship between carbonic maceration, the Gamay grape and granitic soils.

In a delightful essay translated by David Lillie of Chambers Street Wines in New York, Burgundy winemaker Philippe Pacalet sys of Chauvet:

> *Chauvet showed in his studies on indigenous yeasts, that these had as their origin soils of great variety, as much in their organic and mineral composition as in their microclimates and topographies. The same techniques of cultivation which favor the perennial life of the vine in its terroir (plowing, organic farming, natural composting) preserve these yeast flora, qualitatively and quantitatively, to assure a transformation of the grape into wine conforming to its place of origin and vintage. Chauvet understood the negative impact of the utilization of pesticides in the vineyard and of sulfur dioxide in the cuverie on the yeast floras present on the grape skins. These products inhibit the action of the native yeasts, prohibiting them from delivering the sensory information unique to the terroir.*

He also, in the essay, gave some background to Chauvet's thinking about carbonic maceration:

> *His work on carbonic maceration demonstrated the utilization of whole grapes while covering the vat with carbon dioxide, which one is able to conduct according to the viticultural region and wines. Carbonic maceration was shown to be appropriate for the varieties Gamay and Grenache and semi-carbonic, that is to say with pumping over, for other varieties like Pinot Noir, Syrah, Mourvedre, Carignan, etc. Its' effects on the extraction of*

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1 Rankine, B. (2004), Making Good Wine, Macmillan.
2 Flanzy, M. 1935. Nouvelle méthode de vinification. Compt. Rend. Acad. Agr. France 21: 935-938.

fruit, thermic regulation of the alcoholic fermentation by the stems, and anaerobic processes within the grape that contribute to the alcoholic and malolactic fermentations, etc., were also explored by Chauvet.

There is no doubt that Chauvet's deep thinking and research about carbonic maceration and his friend Jacques Néauport's tireless promotion of the process helped spread the word throughout France and beyond.

Alice Feiring in her excellent newsletter The Feiring Line[3] says of Chauvet that he was convinced that in the granitic soils of northern Burgundy it was possible to make wines using carbonic maceration and also to have these wines reflect the terroir from which they were made.

What is Carbonic Maceration?

It is commonly agreed that there are a number of steps involved in the process that has come to be called carbonic maceration:

Step1: Storing whole bunches of grapes in a carbon dioxide rich environment

Carbonic maceration occurs where whole bunches of grapes are carefully placed into a tank with a tight fitting lid and an anaerobic atmosphere[4] is created by pumping in carbon dioxide. The carbon dioxide replaces oxygen in the tank and provides a sterile environment to prevent the growth of harmful bacteria such as acetobacter which can cause volatile acidity problems.

In a perfect world, no grapes would burst due to the weight of the bunches above and the fruit would be so perfect that no juice would leak out. Therefore the yeast on the berries would have no sugars available to convert to carbon dioxide and ethanol. This is why carbon dioxide must be added to the tank.

Of course one clear implication of this approach is that each bunch must be carefully hand harvested in the vineyard to ensure that no damage is done to the grapes.

It also has implications for the type of tank used. The higher the tank the more pressure there will be on the lower bunches and the more likelihood of the grape skins bursting. For this reason some winemakers prefer to carry out carbonic maceration in horizontal tanks where the height is lower and hence there is less pressure on the lower layers. The type of tank (concrete, stainless steel, fibreglass, old oak) is not a critical factor.

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[3] Alice Feiring, The Feiring Line. February 2014. Page 7.

[4] An anaerobic atmosphere is one with little or no oxygen. Normally air contains 20.9% oxygen but the anaerobic atmosphere for carbonic maceration needs to be less than 0.5% oxygen.

We will see later that there is a variant many winemakers use called semi-carbonic maceration where alcoholic fermentation at the bottom of the tank automatically creates the carbon dioxide atmosphere.

Step 2: Intercellular fermentation versus alcoholic fermentation

In this carbon dioxide rich environment, sugars are converted to alcohol (ethanol in this case) through the action of enzymes[5] **within** the berries. The process is referred to as intercellular fermentation or the slightly more scary anaerobic metabolism. This process continues until the berry breaks down.

The amount of time that the berries remain alive and intercellular fermentation continues depends directly on the temperature in the tank. Some papers report that grapes held at a temperature of 15°C take more than two weeks to break down whereas at 35°C this occurs within 8 days. As you will see later in this article even lower temperatures can lead to extended periods before the grape cells break down.

The action of the enzymes also produces significant amounts of glycerol and reduces the amount of malic acid in the grapes by up to 50%, unlike normal fermentation. Rankine[6] reports that the malic acid is metabolised to other acids including oxaloacetic, pyruvic and succinic acids, as well as to alcohol. We have written before about succinic acid in other articles exploring its role in helping us discern minerality in wines.

Amerine and Joslyn[7] (1970) reported in their massive tome on winemaking that "three types of reactions occur when grapes are placed under carbon dioxide or nitrogen for several days:

> *(1) alcoholic fermentation, (2) reduction in malic acid, and (3) internal movement of constituents into solution, particularly of nitrogenous compounds, polyphenols, and aroma materials. There is also some hydrolysis of pectins with liberation of methanol and an increase in free amino acids."*

However they showed little enthusiasm for this method of fermentation.

Carbonic maceration is very different to the processes that occur during normal fermentation where sugars are first converted to ethanol and carbon dioxide by the ambient yeasts and then malic acid is transformed into lactic acid. This process is not carried out by yeast but by the *Lactobacillus* bacteria. In carbonic maceration the

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[5] Enzymes are proteins formed by joining together up to hundreds of amino acids that are small molecules containing an amino group (NH_2) and a carboxyl group (COOH). Different proteins can be formed in this way and they fold up ready to carry out specific tasks. They act as catalysts for chemical reactions within cells and between cells and can speed up the breaking up of molecules into smaller molecules or combining molecules into larger molecules.

[6] 6 Rankine, B. (2004), Making Good Wine, Macmillan.

[7] Amerine, M. and Joslyn, M. 1970 Table Wines: The Technology of their Production. University of California Press.

acids produced are not the soft lactic acids (think of the buttery flavours in some Chardonnay wines) but rather more savoury, salty flavours.

It is commonly the case that the amount of sugar in the grapes reduces by about 20% and the amount of ethanol produced is around 1.5% to 2%. For a long time it was thought that the ethanol produced within the grape eventually inhibited the enzyme activity. For example, this definition of carbonic maceration by Yair Margalit[8] is a case in point.

> *"This is a special kind of fermentation which utilizes the ability of enzymes present naturally in grapes, to transform some small amount of sugar into ethanol. The process is eventually stopped by the accumulating alcohol which poisons the berry cells at about 2% ethanol."*

However experiments conducted at the Montpelier University[9] showed that the low levels of alcohol produced through carbonic maceration were not the result of ethanol inhibiting the enzyme activity within the grape.

Some experiments that have also been carried out in a nitrogen atmosphere rather than a carbon dioxide atmosphere show that the amount of alcohol produced can be increased by approximately three times than with carbon dioxide.

Other reactions also occur within the berries causing the skin lining to break down and substances within the skin to leak out.

According to Beelman and McArdle (1974)[10], carbonic maceration was found to produce wines with a high pH[11], less total acidity, less malic acid, less tartaric acid and fewer tannins in addition to a different sensory quality.

The lower tannins result from the complex environment in which the carbonic maceration takes place. The main contributor of tannins are the grape skins themselves. When grapes are crushed using mechanical crushers a lot of the skin tannins are extracted into the must or juice. However with carbonic maceration the tannins slowly make their way from the skin into the internal pulp of the grape along with polyphenols such as anthocyanins which actually colour the pulp.

With this slow intake of tannins the harsher tannins (which have larger molecules) don't transfer.

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[8] Margalit, Y (1997) Concepts in Wine Chemistry. Wine Appreciation Guild.

[9] I. Molina, M. Nicolas and J. Crouzet, 1986 Grape Alcohol Dehydrogenase: Isolation and Characterization. American Journal of Enology and Viticulture. Vol. 37 no. 3 169-173

[10] R. B. Beelman and F. J. Mcardle, (1974) Influence of Carbonic Maceration on Acid Reduction and Quality of a Pennsylvania Dry Red Table Wine. American Journal of Enolology and Viticulture. 25:219-221

[11] pH is a measure of the level of acidity of a solution. The high the value the less acidic the solution is. So, for example pure water has a pH of 7. Solutions with a pH less than 7 are acidic with 6 being weakly acidic and 1 being strongly acidic. For example, milk which has small amounts of lactic acid has a pH of about 6.4 and lemon juice has a pH of around 2.

Other research[12] has proved that there is an inverse relationship between the colour of a red wine and the percentage of whole bunches in the ferment. This means that as you increase the number of whole bunches the intensity of the colour decreases.

Many tasters talk about cinnamon aromas and cherry and strawberry aromas in carbonic maceration wines. Jackson[13] attributes this to the presence of ethyl cinnamate and benzaldehyde.

Tesniere and Flanzy[14] also report that the results obtained from carbonic maceration are dependent on the particular grape variety used. For example they report that with some varieties such as Muscat and Shiraz the varietal characteristics are enhanced. This even extends to varieties that are usually aromatically neutral such as Carignan.

Step 3: Pressing the clusters

When the intercellular fermentation has been completed the juice must be extracted from the whole grape clusters. In the case where free run juice has been created in the bottom of the tank through grapes being crushed from the weight of the grapes above, it is likely that this juice will have a significantly different level of sugars than the juice about to be produced, therefore many winemakers like to take this 'free-run' juice out of the tank first and vinify it separately.

Once the free-run juice is taken out the clusters can be pressed. Some winemakers use ingenious techniques to do this and to prevent over-extraction of the polyphenols. Toby Bainbridge who make delicious wines in Anjou, has worked with a tarpaulin maker from the area to produce an inner sleeve for his tanks. When he is ready to press the clusters he begins to slowly fill the sleeve with water causing pressure to be exerted on the grapes below. The resulting juice is then run off into another tank.

Step 4: Alcoholic and malolactic fermentation

Once the juice has been extracted it is a feature of carbonic maceration juice that it proceeds through alcoholic fermentation and malolactic fermentation quite quickly. Only a few days to a couple of weeks if everything proceeds well.

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[12] Miller and G. Howell 1989 The Effect of Various Carbonic Maceration Treatments on Must and Wine Composition of Marechal Foch. American Journal of Enology and Viticulture. Vol. 40 no. 3 170-174

[13] Jackson, R.S. (2008) Wine Science: Principles and Applications. Academic Press.

[14] C. Tesniere and C. Flanzy, Carbonic Maceration Wines: Characteristics and Winemaking Process. In Ronald S. Jackson, editor: Advances in Food and Nutrition Research, Vol. 63, Burlington: Academic Press, 2011, pp. 1-15.

The four-step process we have described here is the simplest. Many winemakers have introduced variations to the technique described here to produce longer-lasting wines.

What is semi-carbonic maceration?

We have so far discussed a pure form of carbonic maceration where the whole berries remain intact until the cell walls and the cells in the outer skin layer break down and the juice in the grapes starts to leak out. At this point there is a low level of alcohol in the juice formed through the intercellular enzyme reactions that have taken place within the grape.

This type of pure carbonic maceration is relatively rare because it is usually the case that when the whole bunches are loaded into the tank, those at the bottom of the tank are crushed by the weight of the bunches above and the juice escapes into the tank and alcoholic fermentation begins through the actions of the indigenous yeast on the skins of the grapes.

And, of course, the alcoholic fermentation gives off carbon dioxide when it produces ethanol from the sugars in the grape juice therefore helping to flood the tank with carbon dioxide without the winemaker having to pump it in.

So, the advantage of semi-carbonic maceration is that the carbon dioxide is generated naturally, however some of the other advantages such as the conversion of malic acid to other acids and the generation of glycerols are reduced.

A peek into a tank at Domaine de l'Octavin

In whatever variant, during the carbonic maceration process,which may take from 8 days to many months, the berries remain whole. When we visited Alice Bouvot and Charles Dagand at Domaine de l'Octavin in the village of Arbois in the Jura in April 2013, Alice took the lid off a tank of pinot noir that had been undergoing semi-carbonic maceration for almost six months. The grapes were still perfectly formed and when we ate some they had a mellow taste resulting from the alcohol that had been created within the berry and the reduced amount of the tart malic acid which had been converted to softer acids such as succinic acid.

Alice about to take the lid off the tank

Looking down into the tank at the whole bunches

After six months the grapes are still in good condition

These grapes eventually became ULM (Ultra Long Maceration), a cuvee we weren't able to buy last year because it was pressed and bottled too late for our first shipment and was all gone before the next one. Fortunately we got to drink a bottle at Vivant Cave in Paris earlier this year. If you ever find it don't miss the opportunity to drink it.

ULM at Vivant Cave

Another feature of the work that Alice and Charles do in their winery is that they also put some of their white wines such as their delicious Arbois Chardonnay Carbonique through carbonic maceration for approximately three months to produce a delicious, complex and compelling wine.

Conclusion

There is no doubt that many winemakers in France and beyond find carbonic maceration or semi-carbonic maceration an attractive technique for making interesting, lively wines. There is much debate about whether the use of this technique outside of Beaujolais and with grapes other than Gamay produces wines that reflect the terroir. In our experience the best wines are made by winemakers with a deep understanding of both the techniques they use and the terroir that they are trying to capture in the bottle.

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