The True Chameleon: An Introduction to Muscat

Bryce Wiatrak, 4 Mar 2021.

Wine lovers often marvel at the tremendous versatility of Chardonnay. Ever the chameleon, Chardonnay gives us such disparate entities as Montrachet and Champagne; steely Chablis and buttery California examples; hordes of supermarket bottlings and a handful of botrytized Ruster Ausbruchs. What other grape offers so many wildly diverse expressions? I'll name one: Muscat.

True, Muscat is not one single variety, but a name given to hundreds of grapes. Yet even if you just consider what is arguably the most noble Muscat, Muscat Blanc à Petits Grains, you'll find a multitude of styles, including an array of sparkling wines, ranging from bone dry to a level of sweetest achieved by few other bubbles; alluring dry whites from *grand cru* terroirs and other pedigreed sites; dessert wines that might be harvested late, vinified from raisins, fortified, or some combination of the three; and even a few stray botrytized and ice wines. No other variety can claim such varied traditions, from appellations across the globe and in every imaginable climate.

When considering wine's great international varieties, Muscat is rarely quick to come to mind. That should change—for through studying Muscat alone, few wine styles and few corners of the world are left untouched.

All in the Family

According to *Wine Grapes*, more than 200 discrete grape varieties are called Muscat, in one language or another. This group is dispersed across the globe, encompassing cultivars of

every hue, fermented into virtually every conceivable style. Some are related to one another and comprise a core family of Muscat varieties, but others are genetically distinct—perhaps simply sharing a particularly pungent “musky” aroma. While the first documentation of Muscat did not occur until the 13th century CE (found in *De proprietatibus rerum*, an important early encyclopedia of sorts by the English scholar and Franciscan Bartholomaeus Anglicus), Muscat grapes are believed to count among the most ancient, likely lending themselves to the prized sweet wines of Greek antiquity.

The most distinguished Muscat, and likely the oldest, is Muscat à Petits Grains. Responsible for the majority of the world’s most treasured Muscat wines, Muscat à Petits Grains sits atop the family tree, more recently discovered to be a parent, along with the obscure Axina de Tres Bias, of Muscat of Alexandria. According to Kym Anderson and Signe Nelgen, affiliated with the University of Adelaide and Geisenheim, respectively, Muscat à Petits Grains ranks as the 26th most planted wine grape, with nearly 34,000 hectares globally in 2016—up from 30,000 in 2000. Most recognized (and planted) as the white-berried Muscat Blanc à Petits Grains, this grape and Muscat Blanc Rouge à Petits Grains—as well as the pink-skinned Muscat à Petits Grains Roses—are technically color mutations of a single grape variety, just like Pinot Blanc, Gris, and Noir. But even the red Muscat Rouge à Petits Grains, most notably observed as Brown Muscat in Rutherglen, isn’t the same red generally associated with wine. Fully extracted, it would still resemble a deep rosé.

Within the last decade, Muscat of Alexandria eclipsed its parent Muscat à Petits Grains in global vineyard area, in 2016 claiming 25th place with almost 35,000 hectares—an over 5,000-hectare expansion since 2000. Muscat of Alexandria is often described as more rustic than Muscat à Petits Grains. It is also less versatile, found mostly in more southerly latitudes and only showing at its best in dried-grape or fortified styles. Hundreds of other grapes compose the collective Muscat group—several of which are discussed below—and countless more stem from the Muscat pedigree.

Beyond the glass, Muscats count among the few notable wine grapes that are also commonly eaten. Many Muscats look more like a table crop on the vine, with big, juicy grapes. Although *petits grains* translates to “small berries,” in most regions, Muscat Blanc à Petits Grains is only small berried within the realm of Muscats, still quite large by other standards. Wine professionals will often refer to Muscat’s distinctive “grapey” flavor, a descriptor applied to few other *vinifera* varieties. While this character may derive from several sources—certain Muscat wines, like Moscato d’Asti, are effectively barely fermented must—Muscat perhaps

presents this way as people are familiar with these grapes as food, unlike, say, Sauvignon Blanc or Syrah.

Putting the Musk in Muscat

Muscat is believed to take its name from the musk deer, a genus (*Moschus*) comprising seven small deer species found in southern Asia, particularly in the forests of the Himalayan Mountains. Historically, male musk deer were hunted in order to harvest their musk glands, which were highly valued in the perfume trade. While musk glands owe their distinctive aroma to the ketone muscone, Muscat grape varieties derive an analogous scent from a series of monoterpenes.

Terpenoids describes a group of compounds that include an isoprene structure—a five-carbon unit. Their roles vary widely in the plant kingdom, contributing to hormones, flavor, and pigmentation (carotenoids, for example, help give white grapes their yellow hue). Terpenes are also found in oak, notably in American oak, as well as cannabis, where terpene composition is a primary differentiator between strains.

Three monoterpenes, terpenes with a single isoprene structure, are important to Muscat: cis-rose oxide, geraniol, and linalool. They smell, more or less, as their names suggest—cis-rose oxide like rose, geraniol like geranium, and linalool like, well, laundry detergent. All grapes possess some number of terpenes. Rotundone, for example, the peppery compound found in Syrah and Grüner Veltliner, is a sesquiterpene. Muscat, however, shows especially high concentrations of these specific monoterpenes. A study performed at a vineyard in Gaotai County, in China's Gansu Province, observed monoterpene levels in Muscat Blanc à Petits Grains and Gewürztraminer, another famously floral variety. Cis-rose oxide concentrations fluctuated in each variety depending on harvest (Gewürztraminer was higher in 2010, Muscat in 2011). Linalool, however, was found in 2011 Muscat at nearly nine times the threshold for sensory perception; Gewüztraminer was at half.

Importantly, monoterpenes are only tasted in their free forms. In grape must, monoterpenes are attached to sugars (or glycosylated), and those bonds are severed with fermentation. Accordingly, monoterpene expression will also differ by vinification practices.

Sparkling Wines

Luca Currado, winemaker at acclaimed Barolo producer Vietti, knows that for many people, Moscato d'Asti is a starter wine. In Piedmont, that is quite literally the case. "The first thing when [babies] come out of the hospital, the father puts the pacifier in the Moscato," explains Currado. Moscato d'Asti is one of the best-known expressions of Muscat, particularly prevalent in the United States, with 69% of its approximate 32 million bottles consumed by Americans. (Italy, by contrast, drinks 13%.) Yet despite its popularity, Moscato d'Asti is rarely thought of as a serious wine. Currado likes to pour his Moscato at the end of Barolo-centric dinners. "I like to see their eyes when they taste," he says of his ability to win over an often-skeptical crowd.

Moscato d'Asti should not be confused for Asti Spumante, though the two wines share much in common. They are both made with Muscat Blanc à Petits Grain (here called Moscato Bianco or Moscato Canelli), they are both (for the most part) produced using the Charmat method, and neither is typically dry. Yet while the two wines are technically bottled under the same appellation, Asti DOCG, Asti Spumante is generally made by larger producers at high volume—to which Currado attributes Moscato d'Asti's reputational challenges. Moscato d'Asti, too, has many mass-production, cloying examples, but it is also vinified by a host of Barolo and Barbaresco's most revered winegrowers.

What makes for a great Moscato d'Asti? According to Currado, the grapes need to be truly ripe—a point of differentiation from many of the world's great sparkling wines. "When you harvest, the grape should be yellow, should be golden," he says. "If it's green . . . you don't get these flavors, the fantastic nose." This is easier said than done, as in many Muscat à Petits Grains regions, the late-ripening variety faces challenges with mildew and rot. Leaving the grapes longer on the vine also contributes to the production of a sweeter wine. Moscato d'Asti is sweeter than most any other sparkling wine—Vietti's approaches 140 grams per liter of residual sugar—exceeding the sugar levels of even the typical Port or Sauternes. That sweetness is matched with very low alcohol. Only 4.5% ABV is mandated, though Currado believes the better (and riper) wines sit closer to 6%. Finally, Currado argues that a slow fermentation, in his case roughly 60 days, is critical to making fine Moscato. The resulting wines give only a soft fizzy—or *frizzante*—mousse, as compared to the fully effervescent Asti Spumante, with pressure low enough to allow for a normal cork closure.

Moscato d'Asti harvest

Like those who make other Charmat method sparkling wines, such as Lambrusco or Prosecco, Moscato d'Asti producers believe their wines should be consumed as fresh as possible. They will often chill their Moscato must at harvest, fermenting multiple batches over the course of the year as the market demands them. And although Moscato d'Asti and Asti Spumante are the most famous sparkling Muscat wines, they're not the only ones of note—not even in Italy. Until the late 19th century, Moscadello (for which the precise Muscat variety remains nebulous), rather than Brunello, was Montalcino's most celebrated wine. Historically, Moscadello di Montalcino was a sweet sparkling wine, but today Il Poggione is the only remaining winery to produce Moscadello in this fashion.

In the Veneto, the volcanic soils of the Euganean Hills yield their own distinctive sparkling Moscato. The Colli Euganei Fior d'Arancio DOCG relies on the variety Moscato Giallo, which translates to "yellow Muscat." Confusingly, Gelber Muskateller, in German, and Sárgamuskotály, in Hungarian, also both translate to "yellow Muscat," but in Germany, Austria, and Hungary, these names are synonymous with Muscat Blanc à Petits Grains. In Italy, Moscato Giallo refers to an entirely separate grape variety. To make matters more complicated, what is grown in Colli Euganei Fior d'Arancio DOCG is also distinct from Muscat Fleur d'Oranger—another Muscat variety that sees some acreage in California.

Elisa Dilavanzo, winemaker at Maeli, has made it her mission to put Moscato Giallo on the map. "Even though Moscato is one of the oldest grapes in the world, I think that the knowledge about this wine is not very deep," she says. "And I think that Moscato, for the majority of

people, is just a sparkling sweet wine.” At Maeli, Dilavanzo offers five separate expressions of Moscato Giallo, one of which is a sweet sparkling wine labeled under the DOCG. Its taste, however, is quite unique from Moscato d’Asti—drier by comparison, more savory and feral, and also fully *spumante*. “When you taste the wine, the first perception you can feel on the palate is sweet. Then, after a few seconds, you can feel the minerality,” describes Dilavanzo.

In addition to this sweet sparkling wine, Dilavanzo makes from Moscato Giallo a dry white, a sweet *passito* wine, an ancestral method sparkling wine, and a traditional method sparkling wine. As with Glera in Prosecco, many attest that Muscat is best made using the Charmat method, which better preserves the variety’s signature floral aromas. Such producers might also suggest that the varietal character clashes with the yeasty autolytic flavors released through the traditional method. Nevertheless, traditional method Muscats, while few, hold traditions across Europe. Clairette de Die AOC in the Rhône Valley requires a minimum 75% Muscat à Petits Grains. Some Austrian and German Sekt producers will use Gelber Muskateller, and even a small amount of traditional method wine is made in Asti. Maeli’s traditional method wine, called Dilà, tastes nothing like Chardonnay- or Pinot-based sparklers. Instead, this eccentric wine melds Moscato Giallo’s fresh lily and white rose aromas and its salty finish with the leesy, doughy notes achieved during secondary fermentation.

Vietti Moscato d’Asti 2020

Luca Currado, one of Barolo’s preeminent winemakers, brings the same artisan approach to his Moscato d’Asti as he does his Nebbiolo wines. Exuberantly aromatic, the 2020 Moscato d’Asti smells of fresh lilies, rosewater macarons, and confectioner’s sugar. The low alcohol and soft mousse make the wine imminently drinkable—its sweetness balanced by a persistent acidity and lending to a complexity that could easily go unnoticed behind its ease of enjoyment.

Maeli Moscato Giallo Colli Euganei Fior d’Arancio 2017

When tasting this wine alongside the Vietti, it’s easy to spot the differences between Muscat Blanc à Petits Grains and Moscato Giallo. Here, the wine is saltier and more herbaceous—with a rosemary and lavender flavor—and not quite as sweet. The mousse is frothy, and the wine tastes of white pepper, Turkish delight, and orange blossoms, as the appellation name implies. While the traditional method Dilà is wholly different in its dryness and leesy, autolytic character, in both you’ll find the varietal character of Moscato Giallo—a grape wilder than Petits Grains.

Dry Wines

Muscat varieties respond well to complicated winemaking processes, and, perhaps surprisingly, some of the least-encountered Muscat wines are those made still and dry. The finest examples are, again, harvested from Muscat à Petits Grains, and hail from more northerly latitudes. Alsace, where Muscat is considered a noble variety permitted for *grand cru* sites, is the most classic appellation for dry Muscat wines, but even there it only accounts for about 2% of the hectarage. “In our region, Muscat is the aperitif wine,” explains MW Olivier Humbrecht, winemaker at the historic Domaine Zind-Humbrecht. “It’s the wine that you drink with your starter . . . if you don’t want bubbles.” Refreshing as Muscat may be—and distinct from the weightier Riesling, Pinot Gris, and Gewürztraminer wines of Alsace—Humbrecht finds dry Muscat to be a difficult sell, especially as many will immediately associate the variety with sweet Moscato or French and Spanish fortified wines. “Once people taste it the first time, then they enjoy the wine and will taste it again. But to make them go through that initial glass, that is very difficult,” he explains.

In Alsace, as well as in Austria and Germany, two principal Muscat varieties are planted: Muscat à Petits Grains (Muscat d’Alsace or Gelber Muskateller) and Muscat Ottonel (Muskat Ottonel). “Historically in the region, people planted the Muscat d’Alsace in the top vineyards,” says Humbrecht, “and in more simple vineyards, where grapes would not ripen as well, you would choose Muscat Ottonel.” Muscat Ottonel is an earlier-ripening grape variety, making it more consistent in challenging, cooler vintages. It’s also more pungent—often overwhelming so—and less acidic. (Zind-Humbrecht’s Muscat à Petits Grains-dominant wines, by contrast, will rival Riesling in pH, hovering around 2.9 to 3.0.) While Ottonel gained ground in Alsace in the 1960s and ’70s, climate change and improvements in viticulture have allowed Muscat à Petits Grains to become increasingly reliable, even in flatter, colder sites.

Gelber Muskateller at Weingut Emmerich Knoll (Photo credit: Christopher Tanghe)

So why are there so few great dry Muscats? For one, the grape experiences the same challenges with ripeness in Alsace, Austria, and Germany as it does in Piedmont. “Sometimes Muskateller is a very ordinary grape,” says Emmerich Knoll, renowned Wachau winemaker. “The riper it gets, I think, the less this happens. At the same time, the risk of botrytis and losing the crop is very high. So for most people, I think there is no intention of going for a ripe Muskateller.” As a result, many Muscats can seem lacking in character. Humbrecht echoes this sentiment, noting, “Unripe Muscat d’Alsace is like an unripe Sauvignon Blanc. . . . It will kill any vineyard influence or notion of terroir.”

It’s also a variety that shows sensitivity to soil. Alsace is a geologically diverse region, and Humbrecht finds that only a small handful of Alsace *grand cru* are well suited to Muscat. For him, the east-facing Goldert Grand Cru is ideal—so much so that last year he ripped out his Gewürztraminer there so that 100% of Zind-Humbrecht’s Goldert holdings are planted to Muscat. He points to Goldert’s oolitic limestone as critical to Muscat’s success. Deep with rich clay content, the limestone’s high holding capacity fulfills Muscat’s need for water and lends itself to a biting acidity. Humbrecht also appreciates what Goldert achieves for flavor. Whereas Alsace’s granitic sites might make for powerful Rieslings, “Muscat is already so aromatic that if you plant in that kind of soil type, you end up with a fruit bomb,” he says. “The limestone tends

to kind of control that excessive aromatic intensity—give the leaner, tighter, more focused aromatic profile."

Muscat further requires special attention when it first enters the cellar. Managing the grape's terpenic qualities can be challenging, and a misstep can result in a wine that is more soapy than floral. Key to many producers' formula is extended skin maceration. Müller-Catoir in the Pfalz, which makes some of Germany's best wines from the variety, leaves its Muskatellers on their skins for 24 hours. In Alsace, a new generation of natural wine-minded producers are experimenting with orange wine. "Of all the wines I've tried made like this, it's often the Muscat that makes the most interesting wines," says Humbrecht. While he doesn't go quite that route, he performs a gentle, 24-hour press cycle on his Muscat, using only whole clusters. "It's a dangerous game, because if you overdo it, you end up with something that is way too aromatic," he says. Beyond extracting more flavor, the extended skin contact also gives the Muscat wines a faint but valuable tannic spine. The best dry Muscat wines demonstrate the capacity to age for a decade or longer in bottle. "I like the spiciness of the grape, . . . its noble change from an aromatic, easygoing variety to a broader spectrum of aromas and tastes," observes Knoll of its evolution.

Domaine Zind-Humbrecht Muscat Alsace Grand Cru Goldert 2018

With a winegrowing history dating back to the early 17th century, Zind-Humbrecht remains one of Alsace's leading producers of Muscat wine. The domaine's top example, from Goldert Grand Cru, relies almost entirely on Muscat à Petits Grains, with only 10% Muscat Ottonel. However, a small amount of Muscat Rouge à Petits Grains, interplanted with the Blanc, makes its way into the wine—though Olivier Humbrecht attests that the distinction between the two in his wine is quite minimal. For all its intensity of flavor and aroma, the 2018 Goldert is almost ethereally light on its feet—smelling and tasting of white peach, yellow rose, brine, and spice shop. Exceptionally long and quite dry, the wine melds its floral perfume well to its other elements, never bitter or out of balance.

Weingut Emmerich Knoll Gelber Muskateller Federspiel Loibner 2017

Depending on vintage conditions, Emmerich Knoll will bottle Gelber Muskateller at varying levels of ripeness—Federspiel or Smaragd for dry wines, and, on rarer occasions, Beerenauslese or Trockenbeerenauslese when sweet and botrytized. The 2017 Federspiel shares a similar sprightliness to the Zind-Humbrecht—briny, peppery, lemon zesty, and smelling a like a bouquet of white roses. Its freshness makes clear why these dry Muskatellers

make such excellent aperitifs. The 2015 Beerenauslese, tasted alongside, shares that same luminosity, but melted into a more sumptuous amalgam of orange oil, rosewater, and dried apricot. Both are stunning examples of what Muscat Blanc à Petits Grains can achieve in its most marginal climates.

Late Harvest, Dried-Grape, & Botrytized Wines

As delicious as its great dry wines can be, Muscat deserves its reputation as an exemplary dessert wine variety. Along with grapes such as Riesling and Sémillon, winemakers around the world turn to Muscat à Petits Grains and Muscat of Alexandria to craft some of the most storied and longest-lived sweet wines. Muscat is subjected to every method of production for dessert wine, and while the fortified wines are better recognized today, Muscat's non-fortified dessert wines can be just as rewarding.

The list of non-fortified dessert Muscats includes a wine that in the 18th and 19th centuries faced few rivals: the sweet wine of Constantia. The Constantia vineyard was first planted outside of what is today Cape Town, South Africa, by Governor Simon van der Stel in 1685. By the mid-1700s, the wines reached Europe and attracted a fanbase that would come to include Charles Baudelaire and Charles Dickens. Napoleon Bonaparte ordered Constantia on his deathbed from his exile on St. Helena, and Jane Austen described Constantia's "healing powers on a disappointed heart" in *Sense and Sensibility*. The great sweet wines of Constantia fell to obscurity following phylloxera's arrival in the region in the 1880s. But in 1986, Klein Constantia, which comprises a portion of the historic original estate, revived the style with the first vintage of Vin de Constance. The wine's bottle is shaped after historic examples and its recipe is inspired by 18th-century journals of old Constantia winemakers.

Today, Vin de Constance remains the leading late-harvest Muscat. "We're trying to make a sweet wine that doesn't taste sweet," says Matthew Day, the present winemaker at Klein Constantia. Vin de Constance is among the first and last wines Day harvests, requiring up to 30 passes through the vineyard over the course of two months. The first batches are picked to preserve their bright acidity around the first week of February and are fermented to dryness. The last grapes are harvested by a specialized team that picks individual raisins that have dehydrated on the vine. Across vintages, Day strives to maintain similar metrics for what he believes is the ideal balance, and at which point yeasts will naturally stop fermentation—around 165 grams per liter of residual sugar and 14 to 14.5% alcohol by volume.

Those numbers aren't too far off from many of the pre-phylloxera examples. Klein Constantia possesses a few dozen bottles of very old Constantia, which on occasion Day has had the opportunity to try (and analyze). The 1791 and 1821 were more tertiary, "very mahogany, kind of natty, almost Sherry-like in flavor," in Day's words. "We opened up two bottles of 1885 Sweet Wine of Constantia," he adds. "This wine was lighter in color than the 1986 Vin de Constance. It was still very fresh, very aromatic. It was very similar to what we have today, [with] pH 3.6, 220 grams per liter of residual sugar, 14% alcohol—so slightly sweeter."

While dried-grape winemaking for Muscat often pairs with fortification, an assortment of non-fortified sweet Muscats that utilize the practice can be found across Europe. Austria and Germany vinify a small quantity of Muskateller Strohwein and Schilfwein, while typically fortified wine appellations such as Málaga and several in Greece also allow for non-fortified examples. In Italy, *passito* wines made from various Moscatos stretch from Valle d'Aosta to Calabria. Among them is Passito di Pantelleria, coming from the Sicilian island of the same name off the coast of Tunisia. Zibibbo (Muscat of Alexandria) covers 90% of Pantelleria's vinescape, where it is harvested for raisins, table grapes, and wine. Passito di Pantelleria is an ancient tradition, but its vinification more closely resembles that of Tokaji Aszú than it does most other Italian *passito* wines. After the Zibibbo clusters are sun-dried for two or three weeks, the berries are added to a vat of base wine fermented from fresh grapes. The blend of the concentrated raisins with the brightness of the young wine provides balance between the sugar and the acidity.

Zibibbo drying on Pantelleria (Photo credit: Bryce Wiatrak)

Rarer are botrytized wines made from the Muscat varieties. As with traditional method sparkling wine production, many winegrowers posit that Muscat doesn't translate well to noble rot—the floral intensity muddied by botrytis's funky, fungal aromas. Attempting a botrytized Muscat is also a major viticultural risk. Getting Muscat à Petits Grains ripe is challenging enough, and as a tightly clustered variety, it is already prone to negative botrytis rot. "Muscat works here because it doesn't get botrytis—good or bad botrytis—and that's what makes it so favorable for our sweet wine," Day explains. Olivier Humbrecht counts two vintages in his 30-year career where he was able to make Muscat Vendange Tardive. Emmerich Knoll says he is lucky to get two in a decade, but it does happen. "In certain years, when there is an ability to have a nice noble rot, we do because we like it so much," Knoll says. "We believe that Muskateller in a Beerenauslese or even a TBA style is something really unique." The optimal conditions only seldom happen in the Wachau, when already-ripe grapes are exposed to a period of heat and humidity, followed by another period of dry heat and wind.

In other regions, noble rot is more commonplace—even for Muscat. Navarro Vineyards in Mendocino's Anderson Valley consistently yields botrytized Muscat for its Cluster Select series. In Tokaj, Sárgamuskotály (Muscat Blanc à Petits Grains) is an authorized blending variety to Furmint, where it can offer aromatic lift. Sarah Hwang, proprietor at Királyudvar, has

always been attracted to the region's Sárgamuskotály. Királyudvar has long been an innovator, sparking Tokaj's contemporary dry wine craze with its 2000 Úrágya Dry Furmint. "For hundreds of years, these vines have been producing juice of such great complexity—there must be something to that. We can probably play around and see what else and other expressions the terroir can offer us," Hwang says. Among those other expressions is their Cuvée Patricia (Patricia is Sarah's middle name), a botrytized Sárgamuskotály that is whole-cluster pressed—made more like a *szamorodni* than an *aszú*. Sárgamuskotály still suffers the same predisposition to mildew and rot in Tokaj as it does in other appellations. "Because the tradition is to make wines of noble rot, it's not something we're scared of," Hwang explains. "I think that's the magic of where we are located."

Klein Constantia Vin de Constance Constantia 2016

An El Niño year, 2016 was warm, and harvest was early in Constantia. A pale yellow-gold in hue, the 2016 Vin de Constantia shows immense concentration of its dried apricot, potpourri, candied ginger, and jasmine tea flavors and aromas. One of the few Muscat wines to see aging in a percentage of new wood, the Vin de Constance also adopts notes of clove and vanilla bean. Long and immensely complex, the wine maintains a vital lift from the earlier pickings that balances its intensity.

Donnafugata Ben Ryé Passito di Pantelleria 2018

Among Sicily's leading winegrowers, the Rallo family of Donnafugata has been instrumental in reinvigorating wine production on Pantelleria. While Donnafugata makes several Zibibbo wines on the island, its flagship is the *passito* Ben Ryé, whose name derives from "son of the wind" in Arabic. With a golden orange color, the 2018 Ben Ryé brings together sweeter flavors—rum-soaked raisins, orange marmalade—with more savory notes—rosemary, lavender, sagebrush, thyme. Expansive and viscous, the wine captures the exoticism of Muscat of Alexandria and the warmth of the southern Mediterranean.

Királyudvar Tokaji Cuvée Patrícia Tokaji 2012

The Hwang family is no stranger to botrytis. In addition to Királyudvar in Tokaj, the Hwangs own Domaine Huet, arguably the most prized producer of Vouvray. While Királyudvar's Cuvée Patrícia is an oddity for the region, the wine demonstrates what makes Tokaji such an exceptional place for botrytized wines. Tasting of honey, candied rose petals, and resin, the

wine also shows a subtle nuttiness from its time spent in barrel. The gorgeous floral perfume also explains Sárgamuskotály's value as a blending variety for Tokaji Aszú.

Fortified Wines

The fortified wine category is historic, global, and astonishingly varied. One thing almost every great fortified wine-producing region shares is Muscat. While many appellations champion other principal varieties, they will still generally set aside some acreage for one of the Muscats. These grapes lend themselves well to fortification—a process that helps preserve their aromas for as long as centuries.

In its ancestral home of Greece, Muscat Blanc à Petits Grains is vinified into a host of fortified wines, one of the most notable coming from the island of Samos, which lies just off the Turkish coast and is dominated by a single cooperative. Similar wines are found in Southern France, whether they be Muscat de Beaumes-de-Venise in the Rhône Valley; Muscat de Frontignan, Lunel, Mireval, or Saint-Jean-de-Minervois in the Languedoc; or Muscat de Rivesaltes in Roussillon. Although Muscat Blanc à Petits Grains is cultivated for fortified wine in each of these appellations, these examples are among the simpler of France's *vins doux naturels* and are not given the extended aging afforded to their Grenache-based counterparts.

Each region of the classic fortified wine triumvirate—Port, Sherry, and Madeira—produces or has produced a small amount of Muscat wine. On the island of Madeira, Muscat of Alexandria (or Moscatel Graúdo) is mostly a relic. Although the variety is listed on bottles from the 19th and early 20th century, only a handful of hectares remain today—though Henriques & Henriques will still draw from a barrel of 1978 Moscatel. Among Port shippers, fortified Moscatel is distinguished from white Port (for which it can also be used a blending variety) as its own style, Moscato do Douro, bottled under Douro DOP. A citric, light gold wine, Moscatel do Douro is primarily produced around the small parish of Favaios in the Cima Corgo and vinified from Muscat Blanc à Petits Grains (here Moscatel Galego Branco), whereas Muscat of Alexandria is otherwise the dominant Muscat in both Spain and Portugal.

More famous are the Moscatel wines of Sherry. Muscat of Alexandria is a rare Sherry delicacy of such producers as César Florido in the town of Chipiona, where the variety thrives in sandy soils less suitable to Palomino. Like Pedro Ximénez, top Moscatel Sherry wines are crafted through the *soleo* process, in which grapes are left for a few weeks to raisinate under the blistering Andalusian sun. Extremely long-lived VOS and VORS Moscatel Sherry wines are

bottled by a small number of producers—Valdespino's Moscatel Toneles has components over a century old.

While more esoteric to today's consumers, two additional Iberian Moscatels, Moscatel de Setúbal and Málaga, once achieved the same, or even greater, renown as Port, Sherry, and Madeira. A few stalwart wineries on Portugal's Setúbal Peninsula, near Lisbon, continue to make gorgeous, multi-vintage Muscat of Alexandria wines, often with several decades in average age. Málaga, produced just east of the Sherry Triangle near the beach town of the same name, faces challenges with the encroachment of commercial developments. Two of the biggest names in Spanish wine, Telmo Rodríguez and Jorge Ordóñez, have fought to revitalize the region's winegrowing traditions—which blend both Muscat of Alexandria and Muscat Blanc à Petits Grains with Pedro Ximénez.

Perhaps the most peculiar fortified Muscat comes from the only major New World region to specialize in the variety: Rutherglen, Australia. After initial plantings in the 1850s, Rutherglen's wine industry was bolstered by the Australian Gold Rush in the mid-19th century, around which time the region's iconic producers Chambers Rosewood, Morris, and Campbells all set up shop. For much of Australia's early winegrowing history, Rutherglen was a powerhouse—with one-third of all Australian wine (harvested from around 3,000 acres) coming from Rutherglen by the late 1800s. Uniquely, Muscat Rouge à Petits Grains—better known as Brown Muscat locally—is used in Rutherglen, rather than the more commonplace white variant. It's made into a monovarietal wine, though most wineries also produce a Topaque (Muscadelle—an unrelated but also flowery grape) using the same methods. "Where Muscat is just heaving flavor, Topaque is the more subtle beast," says Jules Campbell, fifth-generation winemaker at her family's benchmark winery of the same name.

Rutherglen's intricate production methods for its fortified wines, or "stickies" as they're sometimes called, evolved from historical necessity but today remain largely unchanged. Imagine basically every trick in a fortified winemaker's toolbox, then add a few new ones—that's basically what's required to make Rutherglen Muscat. The grapes are harvested with a small amount of *passerillage*, though Campbell notes that the bottoms of the clusters should remain fresh and fully hydrated to preserve vibrancy in the wines. Depending on vintage and quality level, the Muscat is left to macerate on its skins for up to five days, after which point it's pressed and fortified with a neutral grape spirit.

The wines then enter a modified solera system, at Campbells passing through tanks and large casks to a series of puncheons in a method of fractional blending. "In essence, what we're

trying to do is preserve that age in our oldest product but at the same time bring through that little bit of freshness that we get," says Campbell. "We get a greater deal of freshness for our Rutherglens, and then as it becomes more important, a greater percentage of that aged material for our grand and our rare soleras." Rutherglen Muscat and Topaque are classified into four tiers—Rutherglen, Classic, Grand, and Rare—whereby the average age of the wines at bottling gets progressively older. The top examples, Grand and Rare, are so concentrated that they are sweeter than nearly every other wine in the world, with 270 to 400 grams per liter of residual sugar. Historically, these soleras were kept under tin-roofed sheds—the wines left to bake beneath the hot metal. While temperature-controlled facilities are also used today, many wineries persevere with these heat traps, which lend a maderized quality to these fascinating Muscats.

César Florido Moscatel Pasas Chipiona (Jerez-Xérèz-Sherry) NV

No producer is more associated with the Moscatel wines of Chipiona than César Florido, where the fifth-generation winemaker of the same name is known locally as Mister Moscatel. The Moscatel Pasas is his top Moscatel wine, made from sun-dried grapes. That process is readily tasted in the wines, with such warming notes as toffee, burnt caramel, aged balsamic, black tea, and gingerbread. A deep amber brown, the wine is not as immediately floral as many other Muscats, but instead shows a beautiful patina that offers a hint of that potpourri flavor.

Campbells Muscat Rutherglen NV

The Rutherglen Muscat provides a decadent entry point to the Campbells range of fortifieds. This is the wine that moves most quickly through the solera, the average age of the wine between three and five years. In the glass and on the palate, this viscous Muscat makes obvious how Rutherglen stickies got that moniker. It tastes of honey, apricot jam, butterscotch, and caramel sauce, with some more resinous, waxy, feral notes adding to its complexity.

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