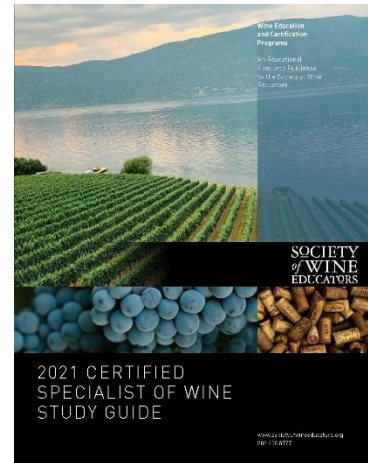


Addendum regarding: The 2021 Certified Specialist of Wine Study Guide, as published by the Society of Wine Educators

This document outlines the substantive changes to the 2021 Study Guide as compared to the 2020 version of the CSW Study Guide. All page numbers reference the 2020 version.

Note: Many of our regional wine maps have been updated. The new maps are available on SWE's blog, Wine, Wit, and Wisdom, at the following address: <http://winewitandwisdomswe.com/wine-spirits-maps/swe-wine-maps-2021/>



Page 15: The third paragraph under the heading “TCA” has been updated to read as follows:
TCA is highly persistent. If it saturates any part of a winery’s environment (barrels, cardboard boxes, or even the winery’s walls), it can even be transferred into wines that are sealed with screw caps or artificial corks. Thankfully, recent technological breakthroughs have shown promise, and some cork producers are predicting the eradication of cork taint in the next few years. In the meantime, while most industry experts agree that the incidence of cork taint has fallen in recent years, an exact figure has not been agreed upon. Current reports of cork taint vary widely, from a low of 1% to a high of 8% of the bottles produced each year.

Page 16: the entry for Geranium fault was updated to read as follows:

Geranium fault: An odor resembling crushed geranium leaves (which can be overwhelming); normally caused by the metabolism of sorbic acid (derived from potassium sorbate, a preservative) via lactic acid bacteria (as used for malolactic fermentation)

Page 22: the entry under the heading “clone” was updated to read as follows:

In commercial viticulture, virtually all grape varieties are reproduced via *vegetative propagation*. This typically involves a cutting or offshoot from a single parent vine that is encouraged to sprout roots and produce a new plant. Initially, this new plant could be considered identical to the parent, at least in theory. However, with time it will likely develop some unique characteristics as it adapts to its new environment. If the new vine shows consistent distinctions (from its parent or other vines)—such as being slightly more vigorous or showing more aromatic intensity—it may be determined to be a new clone. Clones are therefore slightly different from their parent, but not so unique as to be classified as a new variety. Pinot Noir is an example of a grape variety that is available in hundreds of clonal variations (although not all are viticulturally significant). Some clones of Pinot Noir are identified via a number (such as 115 or 447), while others have acquired specific names such as the *Pommard*, *Dijon*, and *Wädenswil* clones.

Page 22: the section under the heading “mutation” was updated to read as follows:

A *mutation* is a grape that has—via successive adaptation—developed characteristics distinct enough from its parent (or other plants) to be considered a separate variety. For example, Pinot Blanc and Pinot Gris are color mutations of Pinot Noir and are considered commercially distinct grape varieties.

Pages 35-36: the paragraph on grape maturity and harvest was updated to read as follows:

Harvest generally takes place a month and a half to two months after veraison, when the grapes are ripe in terms of both sugar levels (physical maturity) and *phenolic maturity*. Phenolic maturity refers to the level and character of certain phenolic compounds in the grape, including tannins and other

compounds that enhance the color, flavor, and aromas of the resulting wine. Sugar concentration and phenolic ripening occur together over the summer, but not necessarily at the same rate. Sometimes the grapes will develop an acceptable level of sugar before the flavors and phenolics—particularly color and tannins—fully emerge, while at other times the situation is reversed. The time period from bud break to harvest is normally around 140 to 160 days; however, under certain circumstances it can be as short as 110 days or as long as 200 days.

Page 82: the introduction information on worldwide wine production and trade was updated to read as follows: The global volume of wine produced in 2019 is estimated at 260 million hectoliters (mhl), the equivalent of nearly 2.9 billion cases of wine.

According to the International Organization of Vine and Wine (OIV), 2019 represents a return to typical levels of worldwide wine production, after the record highs of 2018 (292 mhl) and the record low of 2017 (250 mhl). Aside from these exceptions, the annual global production of wine has remained somewhat stable since 2004, typically amounting to between 260 and 270 million hectoliters per year.

Of the total volume of wine produced throughout the world in 2019, it is approximated that 65% was produced in Europe, 10% in South America, 9% in North America, 6% in Asia, 6% in Oceania, and 4% in Africa.

Page 82: Table 8–1 (Top Ten Countries by leading Wine Indices) has been updated to read as follows:

Table 8–1: Comparison of Top Ten Countries by Leading Industry Indices (2019)

COMPARISON OF TOP TEN COUNTRIES BY LEADING INDUSTRY INDICES (2019)				
Vineyard Acreage	Wine Production	Wine Consumption	Wine Exports (by volume)	Wine Imports (by volume)
Spain	Italy	United States	Italy	Germany
China	France	France	Spain	United Kingdom
France	Spain	Italy	France	United States
Italy	United States	Germany	Chile	France
Turkey	Argentina	China	Australia	China
United States	Australia	United Kingdom	Germany	Russia
Argentina	Chile	Spain	United States	The Netherlands
Chile	South Africa	Russia	South Africa	Canada
Portugal	Germany	Argentina	Portugal	Belgium
Romania	China	Australia	Argentina	Portugal

Sources: International Organization of Vine and Wine (OIV), Statistical Report on World Vitiviniculture, 2020

Page 92: the entry of Melon de Bourgogne was updated to read as follows: Melon de Bourgogne: This grape is grown primarily in the western Loire Valley; however, small plantings are found in Beaujolais and elsewhere. Outside of France, this variety is often referred to as *Melon*.

Page 94: In information on French vin de pay designations was updated to contain the following information:

- In recent years, there has been a great deal of change and consolidation in the IGP regions of France, but as of December 2020, there were a total of 76 IGP/vin de pay designations.

- The following was added as a new regional IGP: Île-de-France IGP: Approved in 2019; located in the north-central part of the country (including the city of Paris and surrounding areas)

Page 95: The section on grape varieties in Bordeaux was updated to read as follows: The primary white grapes are Sauvignon Blanc and Sémillon, which are blended for use in both the sweet and dry white wines of the region. A minor third grape is Muscadelle, which is sometimes added for its floral notes. Sauvignon Gris (a pink-skinned mutation of Sauvignon Blanc) is sparsely planted; but allowed for use in most white wine appellations. A few other white grapes (“accessory varieties”) are permitted (in limited amounts) in some of the white wines of the region; these include Colombard, Ugni Blanc, and Merlot Blanc, among others.

In 2019—in response to climate change—seven additional grape varieties (three red, four white) were approved for limited, experimental use by the Bordeaux and Bordeaux Supérieur AOCs. However, as of December 2020, this change is still awaiting approval by the INAO.

Page 99: the material on Bordeaux Classifications was updated to include the following information: The 61 red wines that were included were subdivided into five levels called *cru*s, or “growths.” The top level, known as *premier cru*, or “first growth,” comprised four châteaux: Haut-Brion, Lafite-Rothschild, Latour, and Margaux. A fifth, Château Mouton-Rothschild, was moved up to the top tier in 1973—one of the few changes ever to be made in the ranking since its initial publication. The estates in the Classification of 1855 were considered at the time to produce most of the very best wines of Bordeaux, and the châteaux owners have tried to maintain their status ever since. Over time, a few châteaux from the second tier—*deuxième cru*—have achieved price levels on a par with higher-ranked wines and have come to be known (quite unofficially) as “super-seconds.” Château Cos d’Estournel, Château Montrose, and Château Pichon Longueville Baron are often cited as among the leading super seconds.

Page 100: Table 9-2 was updated to read as follows:

Bordeaux Classification of 1855: First Growths		
Red Wines		
Classification	Château	Commune
<i>Premiers Crus</i>	Château Haut-Brion	Pessac (Graves)
	Château Lafite Rothschild	Pauillac
	Château Latour	Pauillac
	Château Margaux	Margaux
	Château Mouton Rothschild (promoted in 1973)	Pauillac
Sweet Wines		
Classification	Château	Commune
<i>Supérieur Premier Cru</i>	Château d'Yquem	Sauternes
<i>Premiers Crus</i>	Château Climens	Barsac
	Château Clos Haut-Peyraguey	Bommes (Sauternes)
	Château Coutet	Barsac
	Château de Rayne-Vigneau	Bommes (Sauternes)
	Château Guiraud	Sauternes
	Château Lafaurie-Peyraguey	Bommes (Sauternes)
	Château La Tour Blanche	Bommes (Sauternes)
	Château Rabaud-Promis	Bommes (Sauternes)
Château Rieussec	Fargues (Sauternes)	

	Château Sigalas-Rabaud	Bommes (Sauternes)
	Château Suduiraut	Preignac (Sauternes)

Page 102: Table 9-3 was updated to read as follows:

St.-Émilion Premier Grand Cru Classification (September 2012)		
Premier Grand Cru Classé A		
	Château Angélu	Château Cheval Blanc
	Château Ausone	Château Pavie
Premier Grand Cru Classé B		
	Château Beauséjour	Château Larcis-Ducasse
	Château Beau-Séjour Bécot	Château Pavie-Macquin
	Château Bélair-Monange	Château Troplong-Mondot
	Château Canon	Château Trotte Vieille
	Château Canon-la-Gaffelière	Château Valandraud
	Château Figeac	Clos Fourtet
	Château la Gaffelière	La Mondotte

Page 105: the section under the heading “Pays Nantais” was updated so that it reads as follows: While small amounts of wine are made from Chenin Blanc, Gamay, Folle Blanche (Gros Plant), Pinot Gris, and a handful of other varieties, Melon de Bourgogne (Melon) is the leading grape of the Pays Nantais. Melon de Bourgogne represents three-quarters of area’s vineyards; and is required to comprise a minimum of 90% of the wines of the Muscadet AOC (the remaining 10% may include Chardonnay).

The rules are a bit stricter for the Muscadet sub-appellations—Muscadet Coteaux de la Loire AOC, Muscadet Côtes de Grandlieu AOC, and Muscadet Sèvre et Maine AOC—which must be 100% Melon de Bourgogne. Due to the neutral character of the grape, many producers of these wines craft a richer, fuller-bodied wine by allowing it to rest on its lees for several months or longer before bottling. These wines may be labeled with the term *sur lie* (provided they originate from one of the three Muscadet sub-appellations and meet the minimum aging requirements). Muscadet Sèvre-et-Maine AOC is by far the leading appellation, accounting for nearly 80% of the total production of Muscadet.

Page 108: the bullet point for *prestige cuvée, tête de cuvée, or cuvée spéciale* was updated to include the following: Well-known examples include Krug’s *Clos du Mesnil* and Bollinger’s *Vieilles Vignes Françaises*.

Page 108: the second paragraph under the heading “The Champagne Trade” was revised to include the following: Well-known producers of these *grower Champagnes*—which can be recognized by the initials RM (*Récoltant-Manipulant*) on the label—include Cédric Bouchard and Jacques Selosse.

Page 123: The information on the Côtes du Rhône-Villages AOC was updated to reflect the fact that 22 villages are official subzone designations of the appellation.

Page 126: the section on the Languedoc-Roussillon was updated to include the following: The Languedoc AOC (formerly known as the *Coteaux du Languedoc AOC*) covers the entire Languedoc-Roussillon area from the Spanish border to the French city of Nîmes. This large appellation allows many growers in the region the opportunity to move up from Pays d’Oc IGP to AOC status for wines based on the grapes traditional to the region. The approved red grapes for the Languedoc AOC include Grenache, Syrah, Mourvèdre, Cinsault, and Carignan. White wines are based around the Piquepoul Blanc variety and may include Bourboulenc, Clairette, Grenache Blanc, Marsanne, Roussanne, and Vermentino (among others).

In addition to the over-arching Languedoc AOC, the region is home to over 20 more specific appellations. Perhaps the best-known examples (and the largest areas in terms of production) are Corbières AOC and Minervois AOC. Red wines based on G-S-M (Grenache, Syrah, and Mourvèdre) are the focus in these appellations, but both regions allow for whites and rosés as well. A smaller appellation, Fitou—located in two separate areas, both within the boundaries of the larger Corbières AOC—is one of the oldest AOCs in the area, dating to 1948. Fitou produces red wine only, based on Grenache and Carignan.

Page 128: the section on Provence was updated to include the following: Bandol, Provence’s best-known communal AOC, is known for its rich, aromatic reds and fine, dry rosés that focus on Mourvèdre. Grenache and Cinsault complement the blend, with Carignan and Syrah also planted in the area. The Bandol AOC is also approved for white wines based on the Clairette grape variety.

Page 128: the section on Corsica was updated to include the following:

The island of Corsica—located in the Mediterranean Sea about 110 miles (170 km) from the coastline of southeast Provence—has been part of France since 1769. However, geographically speaking, it is closer to Tuscany than France, and the Italian influence is evident in the wines of Corsica. Red wines here are just as likely to be produced from Nielluccio (a grape that is either identical to or closely related to Sangiovese) as they are from grapes more typical to southern France such as Grenache, Mourvèdre, and Syrah. The leading white grape varieties include Muscat à Petits Grains Blanc and Vermentino (also known as Rolle or Malvoisie de Corse).

Page 132: The introductory information on Italian Appellations was updated to reflect the fact that Italy now has 76 DOCGs.

Page 133: Table 10-1 (List of Italian DOCGs by Region) was updated to include Terre Alfieri as Piedmont’s 18th DOCG.

Page 134: The section on “Veneto Wine Styles” was updated to include the following:

Veneto produces a wide range of wine types and styles. In most years, as much as 75% is white wine, including Pinot Grigio, Soave, and Prosecco—the region’s incredibly popular sparkling wine. Valpolicella and Bardolino are among the best-known red wines of Veneto.

Page 135: the section on Veneto appellations has been updated to include the following:

The four styles of Valpolicella are all based on Corvina or Corvinone grapes, along with a small amount of Rondinella. Traditionally, Molinara was included in the blend but is now optional. Small percentages of other grapes varieties are allowed as well. Producers in the heart of the historic Valpolicella growing district have the right to the classico designation. The Bardolino area—home to Bardolino DOC and Bardolino Superiore DOCG—is located alongside Lake Garda, just to the west of Valpolicella. Bardolino produces red wines and rosé—known here as *chiarretto*—based on Corvina and Rondinella.

Page 135: the information on Prosecco was updated to read as follows: The region’s other archetypal wine is Prosecco DOC, based on the Glera grape variety (minimum 85%) and typically produced as a white sparkling wine. Updates in the wine laws now allow for the production of Prosecco Rosé DOC, which includes 10% to 15% Pinot Nero (Pinot Noir) fermented on the skins. The Prosecco DOC appellation covers a large area, including the northern and eastern portions of the province of Veneto as well as all of Friuli-Venezia Giulia. In addition, there are two relatively tiny DOCGs that produce Prosecco: Conegliano-Valdobbiadene Prosecco DOCG and Asolo Prosecco (Colli Asolani) DOCG, both located in the historical center of Prosecco production.

Page 136: please revise the two paragraphs on the left-hand side of the page (under the map) to read as follows: The Lugana DOC—shared between Veneto and Lombardy—is becoming quite well known as well. This appellation produces light, pleasant white wines based on the Turbiana grape variety (also known as Trebbiano di Lugana and closely related to, but not quite identical to Verdicchio). A few areas of Veneto produce several styles of wine under separate appellations (which often occupy the same geographic location). For instance, Piave DOC produces both dry and appassimento wines from a range of grapes. However, Piave Malanotte DOCG—which occupies the same location as the Piave DOC—is only approved for red wines based on the indigenous Raboso grape variety. Likewise, the Lison-Pramaggiore DOC (which extends into the Friuli-Venezia Giulia area) produces a range of red and white wines from both traditional and international varieties, while the Lison DOCG—located in the same geographic area—is approved only for white wines made using the Friulano grape variety.

Page 145: the information on Umbria was updated to include the following: Umbria, a land-locked region located in the rugged Apennines between Marches and Tuscany, is perhaps best known for Orvieto DOC. Orvieto is a white wine based on Trebbiano Toscano (known locally as Procanico) and Grechetto grapes. Orvieto is typically dry (*secco*); however, it is also available in off-dry (*abboccato*), semi-sweet (*amabile*), and sweet (*dolce*) styles. Umbria is also home to two DOCG wines, both red: Montefalco Sagrantino (100% Sagrantino), and Torgiano Rosso Riserva (minimum 70% Sangiovese).

Page 146: the section on Sicily was updated to include the following: Located off the southwest tip of the Italian Peninsula, Sicily is the largest island in the Mediterranean Sea. Mount Etna—an active stratovolcano with a current height of 10,900 feet/3,325 meters—dominates the island’s skyline. With its reliable sunshine, warm temperatures, and mineral-rich volcanic soils, Sicily has been viticultural powerhouse for over 2,000 years. The island-wide Sicilia DOC and Terre Siciliane IGT allow for the production of a broad range of wine styles and accordingly, in most years, Sicily is one of the largest producers of Italian wine (by total volume).

The region’s only DOCG, Cerasuolo di Vittoria, produces a vividly colored red wine from a blend of Nero d’Avola (one of the island’s most important red grapes) and Frappato (a low tannin red variety known for its cherry-berry aromas and flavors). The Etna DOC—located on (and up) the eastern side of the mountain—produces crisp white wines from grapes such as Carricante and Catarratto as well as reds and rosatos based on Nerello Mascalese. Nerello Mascalese is a highly regarded red grape named after the Mascali plain—a region near Mount Etna where it is believed to have originated. Historically, Sicily was known as a producer of sweet wines and while in decline, this tradition continues in the wines of the Malvasia delle Lipari DOC, Moscato de Noto DOC, and Moscato di Pantelleria DOC (produced on the satellite island of Pantelleria).

Perhaps most famously, Sicily is home to the Marsala DOC, one of the world’s greatest fortified wines. Marsala is made in a range of styles according to levels of sweetness, color, and aging regimes. Grillo and Inzolia (both white varieties) are traditionally used in the production of Marsala; several other varieties—including Catarratto and Nerello Mascalese—are allowed as well.

Page 147: the information on Sardinia was updated to include the following: Located to the west of the Italian peninsula and south of Corsica, the island of Sardinia has been home to various kingdoms and empires over the years. This is reflected in the wine industry of the island, which includes grapes of Spanish and French heritage alongside some unique Italian varieties such as Monica (red) and Nuragus (white).

One of the most famous wines of the region is produced in the island wide Cannonau di Sardegna DOC. This is a red wine made from a minimum of 85% Cannonau (a minimum of 90% Cannonau is required for the riserva). *Cannonau* is the Sardinian name for Grenache or Garnacha; experts have long debated whether Spain introduced the variety to Sardinia or if it was the other way around. The island's only DOCG—Vermentino di Gallura DOCG, produced in the island's northeastern corner—is an aromatic white wine produced using the Vermentino grape variety. While typically seen as a dry, still (non-sparkling) wine, Vermentino di Gallura may be produced in a variety of styles (dry, sweet, still, sparkling, and late harvest/passito).

Page 151: the section on Spanish Wine Laws was updated to read as follows:

Like all EU member countries, Spain has a classification system for its wine divided along several tiers.

- Basic Spanish wine that does not warrant a geographical indication is designated as *vino de mesa* (literally, table wine).
- Spain currently has 42 areas with protected geographical indication (PGI) status; these are identified on wine labels as “*Vino de la Tierra de*” followed by the name of the region.

Wines with a protected designation of origin (PDO) are divided into several subcategories:

- *Vino de calidad con indicación geográfica* (VCIG): Established in 2005, this status is intended for up-and-coming regions that are expected to prove themselves worthy of DO status before too long. These wines are indicated on the label by the phrase “Vino de Calidad de,” followed by the region name. As of December 2020, there were eight regions that held this classification: Cangas, Valles de Benavente, Valtiendas, Sierra Salamanca, Granada, Las Islas Canarias, Cebreros, and Legrija.
- *Denominación de origen* (DO): These highly regarded wines are sourced from a demarcated zone whose production is prescribed with regard to grape varieties, crop yields, winemaking methods, and aging regimens. As of December 2020, Spain has 67 DOs; this number has remained stable for several years, but it could change in the future. Each DO is supported by a *consejo regulador* (regulating council) that controls local production areas and practices.
- *Vino de pago*: Established in 2003, the vino de pago category is intended to recognize specific, single vineyard wines of distinction. The vino de pago title is a government-granted protected designation of origin that is—in some respects—equivalent to a DO, although some argue that they should be considered superior to the DOs based on their regional specificity and mandate for estate bottling. As of December 2020, there were 20 vinos de pago, but this number is likely to increase. Currently, Spain's two DOCa regions do not contain any vinos de pago; however, if one were established, it would be designated a *vino de pago calificado*.
- *Denominación de origen calificada* (DOCa): This status is reserved for wines that have demonstrated superior quality as a DO for at least ten years. So far, this classification has been awarded to only two wines: Rioja and Priorato (often written in Catalan as *Priorat DOQ*).

Page 153: the information on Rueda has been updated to read as follows:

Rueda: With its significant diurnal variation, it is not surprising that Rueda has long been prized for its white wines. The region's dry, aromatic white wines (Rueda Blanco) are typically based on the Verdejo grape, which takes up as much as 88% of the total vineyard area. Rueda Blanco may also be made with a majority of Sauvignon Blanc; limited amounts of Viura, Palomino Fino, Viognier, and/or Chardonnay are permitted as well. Red wines and rosados—based on Tempranillo, Cabernet Sauvignon, Garnacha, and/or Merlot—comprise about 5% of Rueda's production.

Pages 153-154: the information on Ribera del Duero has been updated to read as follows:

Ribera del Duero: Ribera del Duero is one of the stars of the Spanish wine industry, considered by many to be on par with Rioja for the quality of its wines. The area's climate can be a challenge, with extremes of both hot and cold. However, at around 2,500 feet (760 m), the region's vineyards are among the highest elevated in Spain, resulting in good diurnal shifts from day to night. Rich, flavorful red wines based on Tempranillo (locally known as *Tinta del País* or *Tinto Fino*) are the focus in Ribera del Duero; rosado and clarete (light reds) are also allowed. In 2020, the regulations were revised to allow the production of white wines—Ribera Blanco—using a minimum of 75% Albillo Mayor grapes.

Page 160: the information on the grape varieties allowed for use in Cava was updated to include the following: Other varieties have been added to the list of approved grapes, including Chardonnay, Malvasia (Subirat Parent), Pinot Noir, Garnacha, Monastrell, and Trepat (a red grape believed to be native to Catalonia).

Page 160: in Table 11–3: Cava Production Requirements—the information regarding Cava Reserva was updated to read as follows: Minimum 15 months of lees aging in bottle (to be 18 months minimum as of the 2021 harvest)

Page 160: the following information was added: CORPINNAT—Beginning in 2015, a group of mostly small-scale Cava producers decided to forgo the use of the Cava DO in favor of a new designation to be known as *Corpinnat*. Corpinnat is not a protected geographical indication; but is rather an EU-recognized brand name with its own set of standards—including a delimited area within the central Penedès region and the use of organic farming. Other requirements include hand-harvested grapes, minimum lees aging, and the use of at least 90% “historic” varieties (Xarel-lo, Macabeu, Parellada, and Malvasia for whites; Garnacha, Monastrell, Sumoll, and Xarel-lo Vermell for reds). Corpinnat producers can opt to include the Penedès DO designation on the label, provided the wine meets the standards of the appellation.

Page 169: the section on Madeira was updated to include the following:

As EU law requires any wine using the name of a grape variety in its name to contain at least 85% of that variety, a good deal of Madeira is sold either under a proprietary name or simply as Madeira—perhaps with one of the following stylistic terms on the label:

- *Rainwater*: a traditional name for an off-dry blend with a golden or semi-golden color; intended to be a lighter style of Madeira
- *Age indication*: including 5, 10, 15, 20, 30, 40, and 50 years old as well as over 50; must be assessed and approved by a tasting panel
- *Colheita*: produced from a single vintage (85% minimum) and aged for at least 5 years before bottling
- *Frasqueira*: vintage Madeira, cask aged for a minimum of 20 years

Page 181: the section on the Mosel (grape varieties and styles) was updated to include the following information: Riesling dominates the Mosel with about 62% of the vineyard land. Other leading white grapes include Müller-Thurgau, Elbling, and Grauburgunder. Red grapes, led by Spätburgunder, account for just slightly over 10% of the total plantings.

Page 182: the section on Pflaz was updated to include the following information: Riesling accounts for nearly 25% of the total plantings in the Pflaz. Other leading grape varieties include Müller-Thurgau and Grauburgunder, along with the red varieties Dornfelder and Spätburgunder.

Page 182: the section on Hessische Bergstrasse was updated to read as follows:

A tiny region with only 1,150 acres (465 ha) planted to vines, Hessische Bergstrasse is a spur off the northern part of the Baden region. The area is known for white wines, with almost half of the acreage currently planted to Riesling. The name of the region means “Hessian Mountain Road.”

Page 182: the section on Württemberg was updated to include the following information: Württemberg is a large region that focuses on red wine, with almost 75% of the vineyard area dedicated to red grape varieties such as Trollinger, Schwarzriesling (Pinot Meunier), and Lemberger.

Page 183: the section on the Ahr region was updated to read as follows: One of the northernmost regions, Ahr is among Germany’s smallest, with just over 1,300 acres (526 ha) planted to vines. Ahr is (somewhat surprisingly) known for red wines, which account for over 80% of total production. Spätburgunder is the leading grape variety, although Portugieser and Dornfelder are widely planted as well. The region follows the short path of the Ahr River from its source in the village of Blankenheim to its confluence with the Rhine. The land surrounding the Ahr River consists of a series of sheltered valleys lined with steep, south-facing slopes. This topography, combined with the heat-retaining properties of the dark slate and greywacke (sandstone) soils, allows the red grapes of the area to reach a consistent level of ripeness. The red wines of the Ahr tend to show relatively high tannins and oak-derived notes of spice—despite the northerly latitude (50°N).

Page 189: Table 14-1 (Austrian Wine Regions) was updated to include Ruster Ausbruch DAC as a subregion of Burgenland.

Page 189: the bullet point on the Wachau was updated to read as follows: Wachau DAC—Located in a valley following the path of the Danube River, the Wachau DAC produces a variety of grapes and wine styles. However, the top-tier wines of the DAC—produced from designated, single-vineyard sites known as *Rieden*—are made exclusively from Riesling and Grüner Veltliner.

Page 190: The section on the Rosalia DAC was updated to read as follows: Rosalia DAC: The Rosalia DAC is named for the Rosaliengebirge—Rosalia Mountain Range—that comprises a portion of the Alpine Foothills on the border between Burgenland and Niederösterreich. The DAC is approved for dry wines only, in red or rosé. Red wines are produced from the Blaufränkisch or Zweigelt grape varieties; rosé may be made from any red grape varieties approved for PDO wines in Austria.

Page 190: The section on Burgenland was updated to include the following new information: Ruster Ausbruch DAC—Ruster Ausbruch, one of the most famous wines of Austria, is produced on the western shore of Lake Neusiedl in the town of Rust. This sweet, botrytis-affected white wine was awarded DAC certification in 2020. The grapes used for the production of Ruster Ausbruch—including Chardonnay (Morillon), Muskateller (Muscat), Pinot Gris, and Pinot Blanc, among others—must be harvested at a minimum of 30° KMW, equivalent to TBA (Trockenbeerenauslese) levels of ripeness. The tiny Ruster Ausbruch DAC is located within the larger Leithaberg DAC.

Page 198: the section on Greek grape varieties was updated to include the following: Its standouts include three reds:

- *Agiorgitiko*: One of the most widely planted red varieties of Greece, Agiorgitiko (“Saint George’s grape”) is named for the Chapel of Saint George, located in the town of Nemea. Grown mainly in the Peloponnese region, Agiorgitiko is often used to produce tannic,

spicy, flavorful red wines (both dry and sweet). It may also be used to produce lighter red wines (often made by carbonic maceration) as well as rosé.

- *Xinomavro* (alternately, *Xynómavro*): Another of the most widely planted red grapes of Greece, *Xinomavro*—meaning *acid black*— is a specialty of the northern areas, including Macedonia and Thessalia. *Xinomavro*, best-known as the sole variety allowed in the wines of the Naoussa PDO, is used to produce a range of wines from dry, spicy red wines with aromas of red fruit to sparkling wines and rosé in a range of sweetness levels.
- *Mavrodaphne*: *Mavrodaphne* (meaning *black laurel*) is primarily used to produce sweet fortified wines—such as *Mavrodaphne* of Patras and *Mavrodaphne* of Cephalonia. These wines—silky, sweet, and complex—are often compared to ruby or tawny Port.

Page 199: the section on Greek Wine Laws was updated to include the following:

Greece has a quality system in accordance with EU standards and overseen by the Greek Wine Institute.

- Basic Greek table wine—categorized as *epitrapézios oínos* (EO)—accounts for approximately one-half of the country’s total wine production.
- Greece has over 100 areas with protected geographical indication (PGI) status; the traditional term for this category is *topikos oínos* (TO). Many of these appellations correspond to the major political regions of Greece such as Crete, Thessalia, and Peloponnese; others may be as small as a district or a single estate.
- Greek PDO wines fall into two categories—OPE (*onomasía proeléfseos eleghoméni*), typically reserved for sweet wines, and OPAP (*onomasía proeléfseos anotéras poiótitos*), used for dry, unfortified wines. However, these terms are rarely seen on wine labels; most of the top-quality wine destined for export will be labeled with the phrase “PDO Wines of Greece” and one of the country’s numerous appellations.

The country’s best-known wines include *Retsina* (traditionally flavored with resin) and *Verdea*, an oxidative white wine. A special category—*onomasía katá parádosi* (OKP/appellation by tradition)—protects these traditional wines of Greece without tying them to a specific area.

Page 203: the section concerning Israel was updated to read as follows:

Israel is a small country located on the eastern edge of the Mediterranean Sea. The region’s ancient history of grape growing, wine production, and exportation of wine before the common era (BCE) is well-known and widely documented. Political upheaval largely suppressed the area’s robust wine industry by the year 70 CE; however, it was revitalized beginning in the 1880s. More recently, the past 20 years have seen a significant resurgence in the area’s production of grapes and wine, despite the obstacles of desert heat, insufficient water, and periodic warfare.

The present-day wine industry in Israel is often credited to the intervention of Baron Edmond de Rothschild (1845-1934), one of the owners of Bordeaux’s *Château Lafite*. Baron Rothschild began to invest in the area beginning in the 1880s by purchasing property in the area around Mount Carmel, importing modern production equipment, and providing vine cuttings from *Château Lafite*. The enterprise thus founded—*Carmel Winery*—is now the largest-producing winery in Israel.

Despite the country’s small size—it measures about 263 miles/424 km from north to south and about 84 miles/135 km across its widest point—there are significant differences in the climate and terroir across the area. The wine map of the region and the official designation of appellations are still evolving. However, much of the quality wine is produced in Galilee (a high-elevation region located in the north of the country), the Central Mountains (covering the center of the country, including the Judean Hills and Mount Carmel), and the Judean Foothills (nestled between the Mediterranean Coast and the mountains

west of Jerusalem). Viticulture in the semi-arid Negev region, located in the southern part of the country, is made possible by drip irrigation, invented by Israeli water engineer Simcha Blass in the mid-20th century.

Classic international grape varieties—including Cabernet Sauvignon, Merlot, Syrah, Carignan, Chardonnay, Sauvignon Blanc, and Viognier—make up a large proportion of Israel’s vineyards. Indigenous varieties, including Argaman (a red Carignan X Sousão cross created in 1972), Marawi (a white grape traced back to the 17th century), and Dabouki (a red variety) are being planted as well.

Page 210: the number of AVAs in the US was updated to include the following information:

- As of December 2020, 252 distinct AVAs had been approved in over 30 different states; of these, 141 are in California (and these numbers are sure to increase in the future).
- (Page 217): As of December 2020, California has 141 AVAs.
- (Page 226) Seven AVAs are currently located within Santa Barbara County.
- (Page 229) As of December 2020, Washington has 16 AVAs, with all but one located in the rain shadow east of the Cascade Mountains.
- (Page 232) As of December 2020, there are 21 AVAs in Oregon

Page 226: the following information was added: The Alisos Canyon AVA, approved in August of 2020, is a small region wedged between Santa Maria Valley (to the north), and the Santa Ynez Valley (to the south). The area has been described as a “Goldilocks Rhône Zone,” referring to its climate as “not too hot, not too cold, but just right” for Rhône varieties such as Syrah, Grenache, and Viognier.

Page 228: Information on Washington State’s grape varieties was updated to read as follows: Washington produces over 70 grape varieties, with nearly 60% of the state’s vineyards planted to red grapes. Cabernet Sauvignon and Merlot are the most widely planted red varieties. Syrah is planted in less quantity; but is seen as an “up-and-coming” variety and draws some of the highest critical acclaim. While Chardonnay is the leading white variety by acreage, Washington State is considered one of the premier New World regions for Riesling (the number two white grape).

Page 229-230: the following information was added (regarding new AVAs in Washington State):

- Royal Slope AVA: The Royal Slope AVA, approved in September 2020, is almost entirely located on a series of gently rolling, south-facing slopes with elevations ranging from 610 feet (186 m) to 1,756 feet (535 m) above sea level. The area is particularly well-known for Washington State’s first 100-point Syrah—Charles Smith’s Royal City Syrah 2006, crafted using grapes sourced from Stoneridge Vineyard.
- Candy Mountain AVA: Approved in 2020, Candy Mountain is located a few miles southeast of Red Mountain. The area is warm, dry, and windy—and covering just over 800 total acres, Candy Mountain is the smallest appellation in Washington State.
- The Red Mountain, Rattlesnake Hills, Snipes Mountain, and Candy Mountain AVAs are all located entirely within the larger Yakima Valley AVA.

Page 232: The information on Willamette Valley sub-appellations was updated to reflect the following information. The Willamette Valley includes nine sub-appellations, including two newly-approved AVAs—Laurelwood District and Tualatin Hills

Page 234: Table 16–3 (Geographical Indications of British Columbia, Canada) was updated to include Cowichan Valley following as a sub-appellation of Vancouver Island

Page 243: the following section was added: Atacama: Chile’s northernmost viticultural region—the Atacama—sits on the border of one of the driest spots on earth: the Atacama Desert. This area can go years without rainfall and is unlikely to ever see more than 15 mm (0.6 inches) of rain per year. Despite this, irrigation makes agriculture possible in parts of the region, and two areas in particular—the Huasco and Copiapó Valleys, both named after rivers—have a history of grape growing and olive orchards. Typically, most of the grapes are used for table grapes or distilled into pisco; however, the area is seeing increasing interest in wine grape projects involving Chardonnay, Pinot Noir, and Sauvignon Blanc.

Page 244: the bullet point for the Maule Valley was updated to read as follows: Maule Valley is located at the southern end of the Central Valley, where the valley floor broadens. This is one of Chile’s largest subregions in terms of vineyard acreage and also one of its oldest. The Maule Valley enjoys a cooling ocean influence and the mild, dry climate permits many producers to practice organic viticulture. As is true in much of Chile, Cabernet Sauvignon is the leading grape variety of the Maule Valley; Malbec, Cabernet Franc, and Carmenère thrive here as well. The region is also developing a reputation for dry-farmed, old vine Carignan—as promoted by the dozen or so winery members of the *Vignadores de Carignan* (VIGNO) organization. Another specialty of the area is a rustic style of wine known as *pipeño*—often produced using the once-maligned País (Mission) grape variety—which by some accounts is the area’s second most planted variety.

Page 245: the section on “Del Sur (Southern Regions)” was updated to read as follows: Chile’s Southern Regions (Del Sur) viticultural region lies just south of the Central Valley. Here, the climate transitions from a warm and Mediterranean to cooler and rainier, reflecting the area’s maritime influence. The region—long dedicated to País and Moscatel—represents just over 10% of total plantings of the country. However, as with other areas, the wine industry in the Southern Regions has begun to evolve.

The Itata Valley is the northernmost subregion of the Del Sur and borders the Maule Valley (to the north). País and Moscatel are still the most widely planted grapes in the area, however, Cabernet Sauvignon, Merlot, and Syrah are being planted next to restored vineyards of old-vine Carignan. To the south, the Bío-Bío Valley—with higher rainfall and humid, marine-inspired breezes—is being planted with Riesling, Chardonnay, and Sauvignon Blanc. The southernmost subregion, the Malleco Valley, has just a smattering of vineyards—by some counts, less than 50 acres/20 ha—of mainly Chardonnay and Pinot Noir.

Page 245: the following section was added: Austral Region: The Austral Region—with its two subregions, the Cautín and Osorno Valleys—is at the southernmost extreme of winegrowing in Chile. The area is just beginning to be used for commercial viticulture and contains only a smattering of plantings (primarily Sauvignon Blanc, Chardonnay, and Pinot Noir). The Austral area has far more rainfall most of Chile’s other wine regions—up to 1,800 mm (70 inches) of rain a year—and is considered a marginal (if not experimental) location for viticulture. Nevertheless, several producers—some citing concerns of a future affected by climate change—are actively investing in the area.

Page 247: the section on Uruguay was updated to read as follows: Uruguay—located between Argentina and Brazil—is South America’s fourth largest wine producer. The country falls just within the boundary edge of the temperate zone in terms of latitude, and much of the interior of the country experiences high humidity and subtropical temperatures, which makes winegrowing a challenge. While vineyards are found throughout the country, most are located in the southern part of the country (near the Río de la Plata estuary) or in the east, along the Atlantic coastline.

The Canelones District—located just north of the southern coastline and the capital city of Montevideo—is among the leaders. Over 60% of the country’s commercial vineyards and a majority of the producers are located in this area. Other important areas include the up-and-coming Maldonado Region, located east of Montevideo on the Atlantic Coast and near the famous seaside resort town of Punta del Este. There are over a dozen producers in Maldonado, known for its rocky soils, cool climate, and a wine tourism route. The Colonia District, located in the southwest of the country along the Río de la Plata estuary, is considered one of the historic centers of wine production in Uruguay as well a leading region for Cabernet Sauvignon.

The majority of the wine grapes grown in Uruguay are vinifera, and the leading grape variety is Tannat—a hearty, tannic red grape first brought here from the French and Spanish Basque Country. It is estimated that Tannat accounts for nearly 25% of the total vineyard area of the country. Tannat is sometimes known here by the name *Harriague* in honor of Pascual Harriague (1819–1894), a Frenchman who helped to spread the grape throughout Uruguay.

Albariño was introduced to Uruguay in the early 2000s and is seen as having great potential, particularly in certain spots along the Atlantic Coast where the climate can be compared to that of Galicia. Other leading varieties include Cabernet Sauvignon, Cabernet Franc, Merlot, Chardonnay, Sauvignon Blanc, and Viognier. Black Muscat is widely grown and used to produce rosé, much of which is consumed domestically or exported to Brazil.

Page 255: the first paragraph under the heading “grape varieties” was updated to include the following information: New Zealand’s cool climate is tailor-made for white grape varieties, with over 80% of production focused on white wine. Sauvignon Blanc is the undisputed leader, accounting for close to 65% of all vines planted throughout the country. Pinot Noir—currently planted to just over 14% of the country’s total vineyard acreage—is concentrated in Marlborough, Central Otago, Canterbury, Wairarapa (Martinborough), and Nelson. Merlot is the second most widely planted red grape. Other red varieties such as Cabernet Sauvignon, Malbec, Cabernet Franc, and Syrah are planted in very small amounts, and are mostly found in the warmer areas such as Hawke’s Bay, Gisborne, and Auckland.

Page 256: the first paragraph in the section on Marlborough was updated to reads as follows: The Marlborough region on the South Island is home to over 68,700 acres (27,800 ha) of vineyards—accounting for roughly two-thirds of New Zealand’s vines and grape production. The region is heavily planted to Sauvignon Blanc and has in many ways shaped the explosive growth in the New Zealand wine industry. Pinot Noir is the second most widely planted grape, and despite growth in other regions, Marlborough is still the largest grower of Pinot Noir in the country. Chardonnay, Pinot Gris, Riesling, Gewürztraminer, and Viognier are grown here as well. Production of high-quality traditional method sparkling wines—sometimes marketed under the *Méthode Marlborough* brand—is small, but critically renowned.

Page 256: the first paragraph in the section on Hawke’s Bay was updated to read as follows: Hawke’s Bay is the second largest of New Zealand’s wine regions, in terms of both acreage and production. It is, however, in a distant second place (as compared to Marlborough) with just over 12,440 acres (5,034 ha) planted to vines. Located on the North Island—in one of the wider portions of the landmass—this is one of New Zealand’s warmest regions as well as the country’s leading producer of red wine other than Pinot Noir. Red grapes—primarily Pinot Noir, Cabernet Sauvignon, Merlot, and Syrah—account for just over one-third of the region’s total planting. Hawke’s Bay is also an important area for Sauvignon Blanc, Chardonnay, and Pinot Gris.

Page 256: the first paragraph in the section on Gisborne was updated to read as follows: Located just to the north of Hawke’s Bay—on the east coast of the North Island—Gisborne is heavily planted to white grapes. Nearly 50% of the region’s vineyards are planted to Chardonnay—leading to the area’s self-proclaimed nickname as the “Chardonnay capital of New Zealand.” Other leading white grapes include Pinot Gris, Sauvignon Blanc, and Gewürztraminer. Sparkling wine is a specialty here, in addition to the more typical styles of dry varietal wines. Merlot accounts for much of the small amount of land planted to red grapes.

Page 258: the section on the Waitaki Valley/North Otago region was updated to read as follows: The Waitaki Valley viticultural area follows the course of the Waitaki River for 46 miles (75 km) along its path between the foothills of the Southern Alps and the east coast of New Zealand’s South Island. The wide bed of the Waitaki River is considered a traditional boundary between the states of Otago and Canterbury. Vines are planted on both sides of the river as well as up into the sloping hills surrounding the riverbed. The area on the north side of the river is located within the state of Canterbury and considered an unofficial sub-region of the Canterbury GI.

The portion located within the state of Otago (mainly to the south of the river) is a separate geographical indication known as Waitaki Valley/North Otago. The area has unique limestone-based soils—a reminder of its ancient past, when it was covered by the sea—as well as loess and alluvial deposits. Waitaki Valley/North Otago is a remote, cool-climate area planted mainly to Pinot Noir, Riesling, Pinot Gris, and Chardonnay.

Page 259: the section on the Canterbury region was updated to read as follows: The Canterbury region, extending along the South Island’s eastern coastline, lies between the Southern Alps and the Pacific Ocean. This is a large region—the official geographical indication for wine production covers the entirety of the political region (province) of the same name—covering a total of more than 17,000 square miles (44,000 square km). However, only about 3,500 acres (1,419 ha) are planted to vineyards. This sunny, mild-climate region can have dry, warm summers—often punctuated by the area’s dry *nor’wester* winds in addition to the cooling sea breezes. Pinot Noir and Sauvignon Blanc are the leading grape varieties of Canterbury, followed by Chardonnay, Riesling, and Pinot Gris.

The great majority of the area’s vineyards are planted in the large (official) sub-region of North Canterbury. This area comprises the northern half of the region, bounded by the Rakia River to the south. The Waipara Valley—an official subregion situated within the boundaries of North Canterbury, located about 30 miles (48 km) north of the city of Christchurch—is of particular renown. It is centered on gravel and clay soils in the rolling hills surrounding the inland valley of the Waipara River.

Page 273: the section on Ningxia was updated to include the following information: The area has experienced significant growth and, by some counts, is home to over 200 wineries. These wineries produce a wide range of wines—using Cabernet Sauvignon, Cabernet Gernischt, Chardonnay, Riesling, and Syrah as well as other varieties—that include some high-quality wines that have won medals at international competitions.

Pages 305–316: the following terms were revised or added to the glossary:

- **Canopy:** 1. The upper part of a grapevine, including the leaves, fruit, shoots, cordons, and canes; 2. The part of a grapevine above the ground (to include the trunk)
- **Generoso:** Spanish. Fortified
- **Liquoroso:** Italian. Fortified

- **Malolactic fermentation:** A biochemical process by which lactic acid bacteria convert malic acid to lactic acid, thereby reducing a wine's acidity and altering the flavor profile; often referred to as malolactic conversion
- **Node:** A protuberance (thickened section) of a cane that will develop into a bud, leaves, shoots, tendrils, and/or flowers
- **Organoleptic:** Those properties of wine (or food) that are perceived by the senses; often used in relation to the sensory evaluation of wine, e.g., the organoleptic evaluation of wine
- **Phenolic maturity:** The point at which a grape reaches its ideal level of phenolic compounds such as tannins, anthocyanins, flavones, and other compounds that enhance the color, flavor, and aromas of the resulting wine