From Soil to the Glass

Table 8

study

26.6.2026

Table &

chief editor *Samira Kakh*
email *info@table-eight.co.nz*
samira@table-eight.co.nz
web *table-eight.co.nz*
instagram *@table_eight_journal*

Note.

acknowledgements

This issue is the product of a remarkable collective effort, brought to life by individuals who generously shared their knowledge, curiosity and passion for wine. My heartfelt thanks go to **Alcides P. Neto** for Brazil, **Bruno Arias** for Chile, **Chong Pan** for China, **Dr Helen Evans** for the foreword, **Dr Roo Kalatehjari** for the geological insights and rock information, **Elinor C. T. Birch** for England and Champagne, **Finn McCabe** for Jerez, **Francis Audert** for his invaluable wine advice, **Joamari Van der Walt** for South Africa, **Katharina Ziehe** for Germany, **Kiki O'Rourke** for Ireland, **Nic Bouchard** for Australia, **Patrick Payumo** for France, and **Rachael Baldwin** for her technical expertise on Antipodes water.

FOREWORD

In this edition of Table 8 Study, we take a deep dive into the all-important topic of soil. Now I will confess – until recently I would have told you that soil is not the most inspiring subject to study. My opinion may not have been helped by enduring memories of failed attempts at gardening, and my absolute fear of worms. The thought of reaching down into the soil and touching one of these wriggling, squidgy creatures fills me with as much horror now as it did when I was a young child. But that's a story for another day.

So why do I now think that soil is intriguing, and thought-provoking? Well, some of it has to do with a maturity that comes with age, and an almost spiritual, growing awareness that this vital substance, often hidden from us by grass, bush and urban development, is what connects us to the earth and the world that we live in. At the end of a busy day, freeing myself of the trappings of footwear and wandering outside barefoot into the garden is almost liberating. That sense of grounding – quite literally – may sound like whimsy, but it serves as a reminder of our connection to our planet, and our need to be mindful in caring for it, not just for ourselves but for future generations.

In studying wine over the past few years, I have developed appreciation and respect for what soil contributes to viticulture and, of course, to that much-loved sense of terroir, of which our winemakers are so rightfully proud. Intrinsically linked to the weather, topography and moderating influences of wine regions, soils complete a set of ingredients that are unique to that place, a DNA fingerprint if you like. From the chalky white landscape of Champagne, to the gravels of Bordeaux, and the volcanic, almost hostile nature of places like Santorini, soils not only enable grapes to thrive grow but to bring characters to the wine that cannot be explained by just the grapes themselves.

HELEN M EVANS

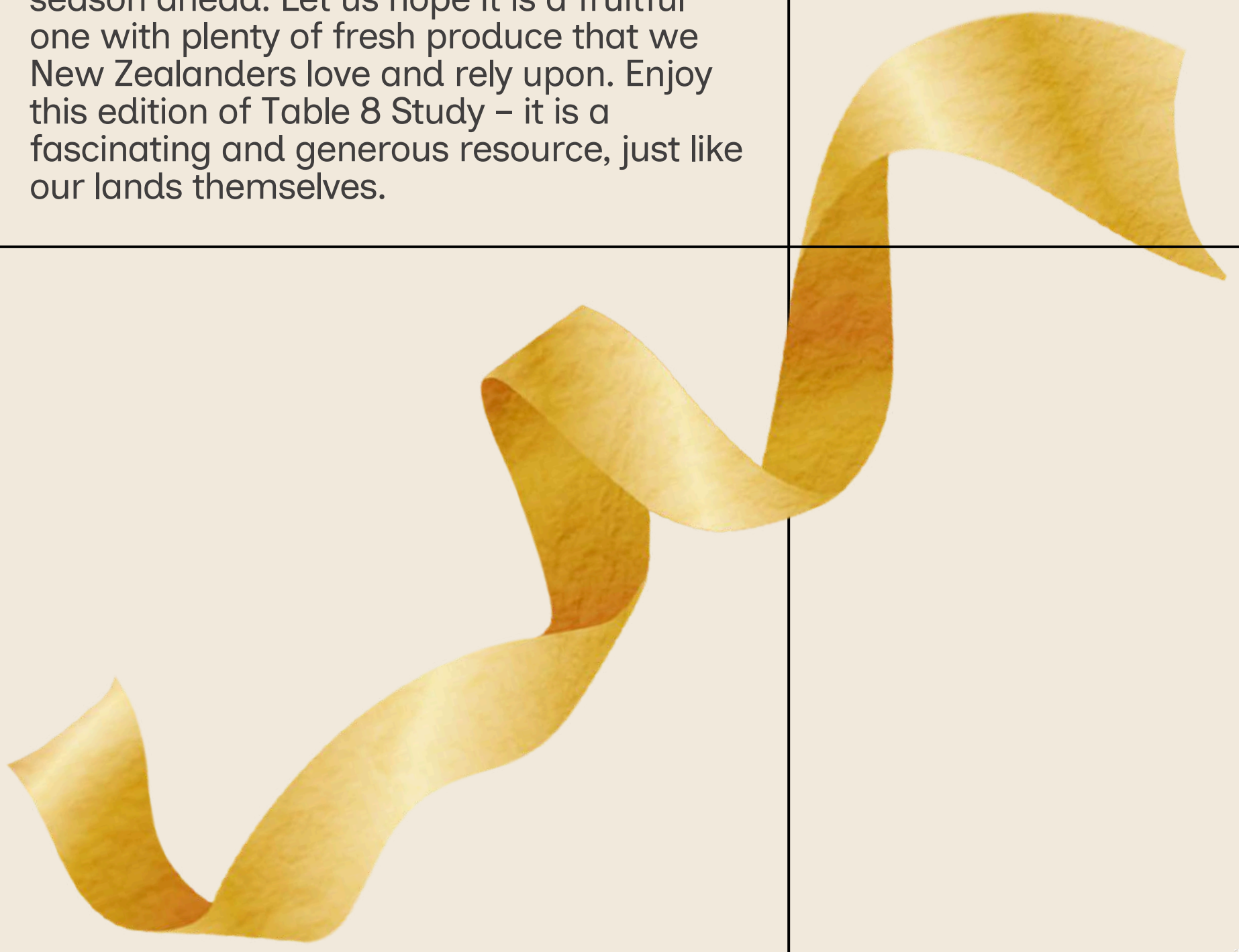
DipWSET Candidate

FOREWORD

Soils are complex. In the undulating slopes of Alsace, they can vary simply between neighbouring fields, and the Napa Valley is renowned for its soil diversity with over 33 different types. Soils are also ancient, formed from activity within the earth's crust many millions of years ago. Yet they are also dynamic and fragile. One year's growth of vines can deplete precious minerals and nutrients for future years. Viticulturists must become masters of their own lands, adopting an artistic expertise and precision in tending to them, to allow a consistency in the end product that we, as customers, have come to expect.

In the hospitality industry, everything starts with soil. You cannot beat the earthiness of a newly dug up carrot, the sweetness of a tomato just pulled from its vine or the juiciness of a lemon pulled from a tree. No matter what your craft is, whether it be wine, olive oil or the finest Wagyu beef, ultimately the nutrients needed to enable a healthy crop or nourish a herd are invisibly extracted from the ground. Quality, provenance and diversity all rely on our understanding of soil, our ability to care for it, and to act as its guardians in maintaining it for others.

As we hunker down for winter and spend more time indoors, let us remember that outside our soils are not simply resting. They are readying themselves for the season ahead. Let us hope it is a fruitful one with plenty of fresh produce that we New Zealanders love and rely upon. Enjoy this edition of Table 8 Study – it is a fascinating and generous resource, just like our lands themselves.



PREFACE

Welcome to the first issue of Table 8 Study.

While Table 8 Journal explores the stories, people, places, and ideas that shape the world of drinks, Table 8 Study has a different purpose. It is designed to take learning a step further. Its role is to connect information, reveal relationships, and help transform isolated facts into meaningful understanding. The objective is not simply to learn more, but to learn more deeply.

Too often, knowledge is acquired in fragments. We memorise grape varieties, regions, producers, soils, climates, and technical terminology, yet struggle to see how these pieces fit together. The Table 8 Study series was created to bridge those gaps. Through repetition, synthesis, comparison, and practical learning tools, each issue aims to create hooks that allow information to stay with us, become easier to recall, and ultimately become part of our professional DNA.

It is fitting that the first issue focuses on soil. Everything begins beneath our feet. Soil is not merely a growing medium; it is the foundation upon which vineyards, ecosystems, and agricultural communities are built. For many growers, particularly those working with regenerative and biodynamic philosophies, soil is a living system. It is an intricate community of roots, microorganisms, insects, fungi, plants, water, and minerals that together shape the character of a place. Understanding soil allows us to better understand vineyards, wines, and the environments from which they emerge.

PREFACE

This issue is not intended to be the definitive or final word on soil. In fact, it is quite the opposite. While this is the first soil-focused Study issue, it certainly will not be the last. Soil is far too complex, fascinating, and important to be contained within a single publication. Future Study issues will revisit the subject from different angles, building upon the foundations established here and exploring new connections as our collective understanding continues to evolve.

Within these pages, readers will find several chapters designed to inspire curiosity while supporting practical learning. We begin with a collection of rock flashcards, offering a simple and memorable introduction to many of the geological materials found in wine regions around the world. We then turn our attention to a fine water; one of the most influential yet often overlooked elements in any hospitality venue. Finally, we explore a selection of terroir-driven wines, connecting celebrated bottles to the soils from which they originate and examining how growers express the relationship between land, vine, and wine.

My hope is that this publication serves not only as a reference but as a companion for continued learning. If it encourages readers to look more closely at the ground beneath a vineyard, to ask better questions, and to build stronger connections between the many pieces of knowledge that make up our understanding of wine, then it will have achieved its purpose.

You may also notice that the design and structure of many pages in this issue differ from those found in traditional study materials. Here, we have experimented with a format inspired by the way many of us consume content today: quick, visual, and highly digestible pieces of information. Many pages are designed to be flicked through much like social media stories, with collections of flashcards and concise learning prompts intended to make study more engaging and memorable.

We are still exploring and refining this approach. As this is the first issue of Table 8 Study, the format will undoubtedly evolve over time.

This first issue would not have been possible without the encouragement, generosity, and enthusiasm of many people. My sincere thanks go to everyone who urged me to pursue the Table 8 Study concept, to those who generously shared their knowledge and insights, and to those who invested their time, expertise, and passion in helping shape this inaugural issue. Your support transformed an idea into a reality.

Samira Kakh

PREFACE

ROCKS

basalt

MINERAL-RICH VOLCANIC SOILS. WARMTH
RADIATION. POOR IN NUTRIENTS

clay

COPES WELL WITH WATER-STRESS DUE TO WATER-RETAINING PROPERTIES

dolomitic limestone

EXCELLENT DRAINAGE.DEEP ROOT PENETRATION.MAGNESIUM-RICH

galets roulés

PERFECT DRAINAGE. ACCUMULATES HEAT

gravel

EXCELLENT DRAINAGE.HEAT
RETENTION.BALANCED VINE GROWTH

limestone

CALCIUM AND MINERALS. GOOD DRAINAGE

kimmeridgian limestone

ANCIENT. CHALKY. SALINE

pink granite

PURE MINERALITY AND FAST DRAINAGE

quartz porphyry

POOR FERTILITY AND HEAT REFLECTION

sandstone

EXCELLENT DRAINAGE . DROUGHT RESILIENCE

schist

DEEP ROOT PENETRATION.HEAT RETENTION

silex

FLINTY AND MINERAL-RICH
ACCUMULATES HEAT

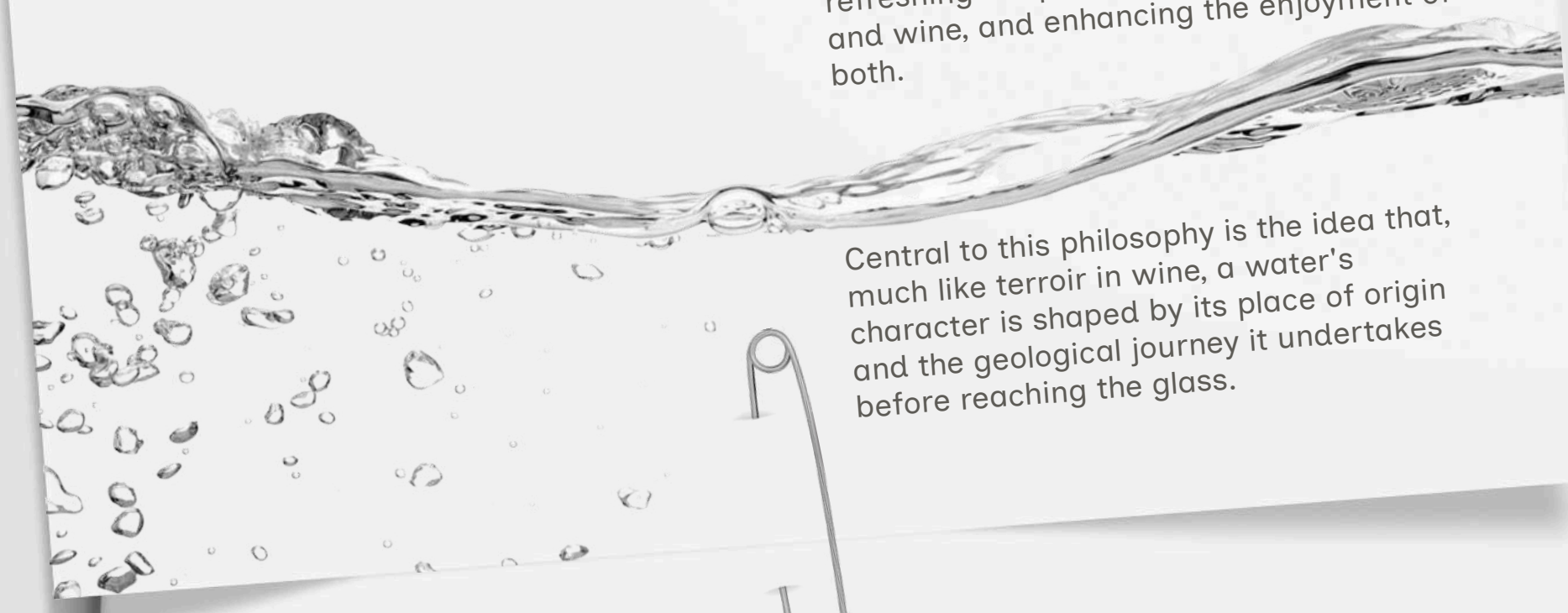
slate

METAMORPHIC ROCK. FRACTURES INTO THIN LAYERS. FORCES VINE ROOTS TO GROW DEEP. ACCUMULATES HEAT

ANTIPODES WATER

the Story

Antipodes was conceived more than two decades ago with a simple but unusual idea: that water deserves the same level of consideration at the dining table as wine, food, and other carefully selected ingredients. Founded by New Zealand restaurateur Simon Woolley, the project emerged from a belief that water should not merely accompany a meal but actively contribute to the overall dining experience. The aim was to create a contemporary New Zealand premium water capable of refreshing the palate, complementing food and wine, and enhancing the enjoyment of both.



Central to this philosophy is the idea that, much like terroir in wine, a water's character is shaped by its place of origin and the geological journey it undertakes before reaching the glass.

the Founder's Search

After spending years living and working overseas, including in New York and Europe, Simon Woolley returned to New Zealand and noticed a contradiction within the hospitality sector. Restaurants were increasingly celebrating local produce, artisanal ingredients, and regional wines, yet water remained largely overlooked.

Determined to change this, Woolley embarked on a year-long search for a source capable of producing a world-class dining water. He visited more than one hundred water sources across New Zealand, seeking water that was naturally pure, enjoyable directly at the source, and subtle enough in minerality to accompany an entire meal without overwhelming the palate. When the final selection was narrowed down, he enlisted Michael Brajkovich MW and Paul Brajkovich of Kumeu River Wines to assist with the tasting process. The source that ultimately became Antipodes stood out for its elevated silica content and notably smooth texture, qualities that were considered particularly sympathetic to wine service.

the Source

Antipodes originates from an artesian aquifer located near Whakatāne in New Zealand's Bay of Plenty. Drawn from a depth of approximately 327 metres, the aquifer is recognised as one of the country's deepest and highest-quality confined groundwater systems. Unlike conventional spring water, which flows freely to the surface, artesian water remains under geological pressure and rises naturally from the aquifer before travelling only a short distance to the bottling facility. Scientific measurements suggest the water is between 50 and 300 hundred years old at the time of bottling, representing rainfall that originally fell on New Zealand's central volcanic plateau centuries earlier before beginning its slow subterranean journey.

Protecting the Source

Environmental stewardship has been central to the Antipodes philosophy since its inception. The company became the first premium bottled water producer in the world to achieve Toitū Carbon Zero certification and is approaching two decades of continuous certification. Antipodes bottles exclusively in glass and prioritises local suppliers to reduce environmental impact throughout its operations. Production is carefully managed, with water bottled only at the source and only in quantities required. The company's sustainability initiatives have been recognised by the United Nations Environment Programme, while its commitment to source protection includes the creation of a native wetland at the aquifer site. Antipodes was also a founding member of the Fine Water Society, an organisation established to promote and protect significant natural water sources around the world.

Geology and Terroir

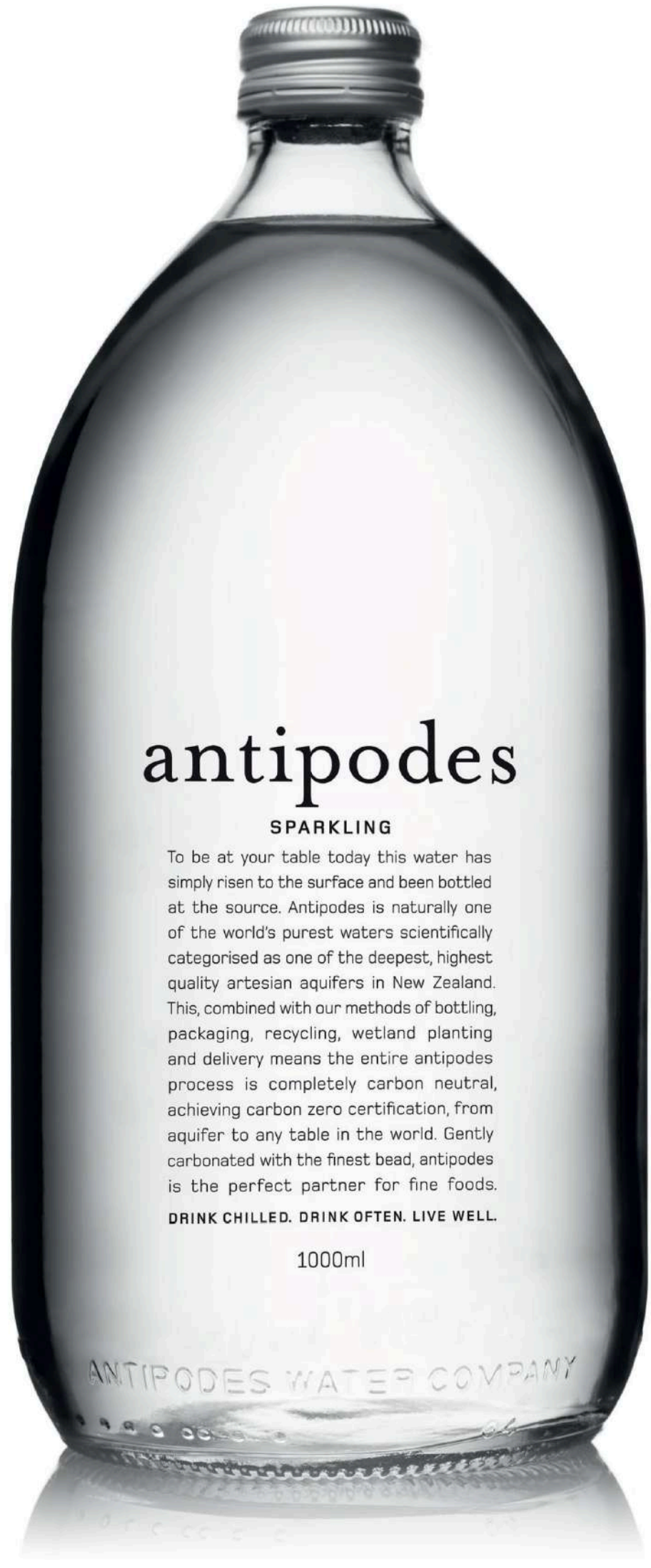
Like all natural mineral waters, Antipodes begins as rain. Over time, this water travels through microscopic fissures within layers of volcanic rock, gradually absorbing minerals and characteristics from the geological environment it encounters. The surrounding geology is dominated by ignimbrite, a silica-rich volcanic rock formed through ancient volcanic activity associated with New Zealand's central volcanic plateau. This rock acts as a natural filtration system while simultaneously influencing the water's mineral composition. In much the same way that soil, climate, and geology shape the identity of wine, the geological journey undertaken by water contributes directly to its distinctive profile. For water, terroir is expressed through the minerals absorbed during this passage through the earth.

Minerality and Texture

Antipodes is a low-mineral water distinguished by its naturally high silica content. Derived from volcanic ignimbrite geology, the silica creates the smooth, silky texture that defines the water's character.

One of the more compelling aspects of Antipodes is that it was developed from a hospitality perspective rather than a beverage manufacturing perspective. The project began with the dining table and worked backwards to the source. This approach aligns naturally with broader discussions of terroir. Just as vineyard soils and geological formations contribute to the character of wine, the rock strata through which water travels influence its composition, texture, and identity. Viewed in this way, the aquifer becomes a geological archive, preserving centuries-old rainfall and transforming it through its passage beneath a volcanic landscape. The resulting water is therefore not merely a product of hydration but an expression of place, shaped by the same forces of geology and time that define some of the world's most distinctive wines.

Pouring now on the world's finest dining tables.



TOITŪ
NET CARBON ZERO
PAS 2050 PRODUCT

TOITŪ
NET CARBON ZERO
ISO 14064-1 ORGANISATION

antipodes.co.nz | @antipodes_water

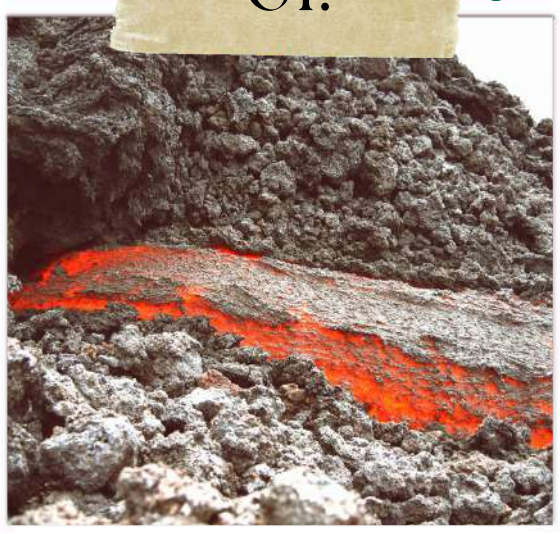

REMINDER
GET YOURS
KIWI
COFFEE
TOUR
FIRST EDITION
FIRST EDITION


SOIL

ROCK CYCLE

elements, processes, and agents

01.



Magma

molten rock beneath Earth's surface

Cooling and Solidification

02.

Volcanic/ Igneous

when magma / lava cools & solidifies

Weathering, Erosion and Transport

03.

Sediments

loose fragments of rock, minerals, & organic matter

04.

Soils

deposited weathered material mixed with organic matter

Cementation

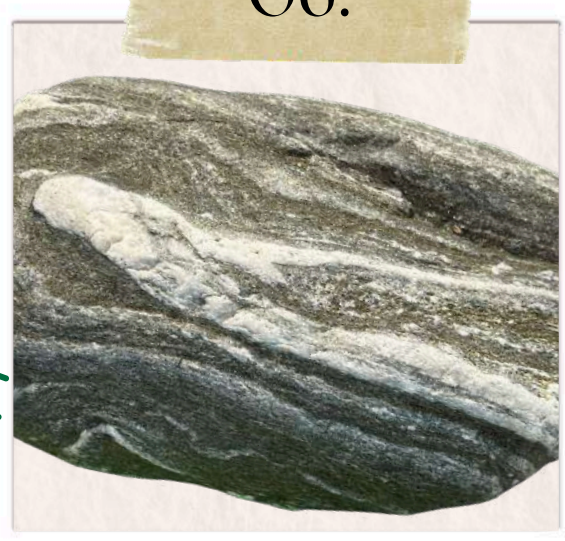
05.

Sedimentary

compaction, cementation, & chemical reaction of sediments

High Heat and Pressure

06.



Metamorphic

rock texture & minerals change by high heat & pressure

Melting

RED HILLS

AUSTRALIA > MORNINGTON > RED HILLS > RED HILL SOUTH > KAYES VINEYARD

By Nic Bouchard

The soil

Kayes* Vineyard is planted on red volcanic ferrosols**, some of the most distinctive soils of the Mornington Peninsula. Formed from ancient volcanic activity, these iron-rich, free-draining soils encourage deep root penetration and naturally moderate vine vigour. Combined with the elevation and rolling hills of Red Hill South, they promote a long, even growing season that preserves freshness while allowing flavours to develop gradually.

*/keɪz/
**/ˈfɛrəˌsɒlz/

The wine

The combination of volcanic soils and the cool maritime climate produces wines of remarkable precision and energy. Kerri Greens' Messire Pinot Noir from Kayes Vineyard are noted for their vibrant natural acidity, lifted aromatics and refined structure. Rather than power, these wines express purity, elegance and a clear sense of place.

UPPER YARRA

AUSTRALIA > VICTORIA > YARRA VALLEY > UPPER YARRA VALLEY > GEMBROOK HILL VINEYARD

By Nic Bouchard

The soil

The vineyards of Gembrook* Hill are planted on red volcanic loam in the Upper Yarra Valley. These ancient volcanic soils are relatively fertile yet exceptionally well drained, meaning vines must still work hard to access moisture throughout the growing season. The combination of volcanic soils and the cool Upper Yarra climate encourages slow, balanced ripening.

*/ˈdʒɛmbrʊk/

The wine

These conditions consistently produce wines with purity, tension and aromatic lift. 2025 JKM Pinot Noir offers bright natural acidity alongside finely detailed fruit, creating a wine that is tightly structured in youth yet capable of evolving beautifully with bottle age. The style is defined by elegance, perfume and pristine rather than richness.

SERRA GAÚCHA

BRAZIL > RIO GRANDE DO SUL > SERRA GAÚCHA > VALE DOS VINHEDOS DO > SANTA LÚCIA VINEYARD

By Alcides P. Neto

The soil

Santa Lúcia Vineyard is planted on basaltic-origin soils in Brazil's Vale dos Vinhedos*. Formed from ancient volcanic basalt, these clay-loam soils are scattered with pebbles that promote excellent drainage while retaining sufficient moisture to sustain the vines throughout the growing season. This combination naturally moderates vine vigour, encourages deep rooting, and supports consistent ripening in the region's humid climate.

*/ˈvali duz viˈɲedus/

The wine

The interaction between basaltic soils and clay-loam contributes to wines of concentration, balance and longevity. Pizzato Vinhas e Vinhos*' DNA99 Merlot from Santa Lúcia vineyard develops ripe, expressive fruit supported by vibrant freshness, refined tannins and a subtle mineral character. Naturally low yields further enhance depth and complexity, resulting in an elegant Merlot with structure and excellent ageing potential.

*/piˈzatu ˈviɲas i ˈviɲus/

ALTO ELQUI

CHILE > COQUIMBO > ELQUI VALLEY > ALTO ELQUI > WAQAR VINEYARDS

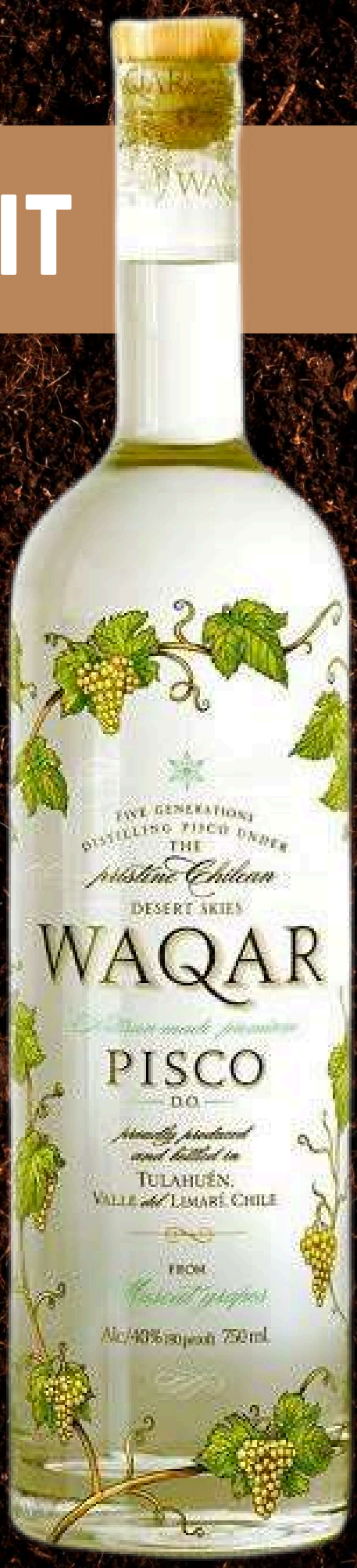
By Bruno Arias

The Soil

The vineyards supplying Waqar Pisco are planted on rocky alluvial soils in Alto Elqui, composed of stones, sand and extremely low levels of organic matter. These poor, free-draining soils naturally restrict vine vigour, encouraging deep root systems in search of moisture. Combined with the region's intense desert conditions and dramatic diurnal temperature variation, they create an ideal environment for producing highly concentrated Muscat fruit.

The Spirit

The Moscatel Rosada grown on these rocky alluvial soils produces a Pisco of remarkable aromatic purity and precision. Low vine vigour concentrates floral and citrus aromas while preserving freshness, resulting in a spirit that is intensely perfumed yet refined. Waqar is recognised for its elegance, expressive floral character and exceptional balance, showcasing the unique terroir of Alto Elqui.



SOMOS DE CHOAPA

CHILE > COQUIMBO > CHOAPA VALLEY > SOMOS DE CHOAPA > LEGADO VINEYARDS

By Bruno Arias

The Soil

Legado originates from vineyards in Somos de Choapa, where rocky alluvial and colluvial soils provide excellent drainage and naturally moderate vine vigour. Combined with the region's semi-arid climate and the cooling influences of both the Pacific Ocean and the Andes, these conditions promote slow, even ripening while preserving freshness, aromatic intensity, and balance.

The Spirit

The rocky alluvial and colluvial soils of Somos de Choapa contribute to a distinctive style of Pisco, lending structure, tension, and remarkable finesse to the Moscatel Rosada. Rather than emphasising richness alone, Bou Barroeta Legadodisplays freshness, precision, and a dry, gastronomic profile, with vibrant floral aromatics supported by exceptional purity and lively natural acidity.

ACONCAGUA VALLEY

CHILE > ACONCAGUA REGION > ACONCAGUA VALLEY > OCOA > SEÑA VINEYARD

By Bruno Arias

The Soil

Seña* comes from Chile's Aconcagua Valley, where the vineyard sits on a complex matrix of colluvial, granitic and alluvial soils. This combination brings together fractured rock, transported slope material and river-influenced deposits, creating variation in drainage, depth and vine vigour across the site. The result is a layered soil profile that supports both concentration and refinement.

*/ˈseɲa/

The Wine

Seña is a Bordeaux-inspired blend shaped by the warmth of inland Aconcagua and the cooling influence of the Andes. Its complex soils contribute aromatic lift, freshness and layered structure, helping the wine balance ripe dark fruit with elegance, fine tannins and long ageing potential. It is one of Chile's most celebrated fine wines, known for combining power with precision.

YINCHUAN

CHINA > NINGXIA > HELAN MOUNTAIN EAST FOOTHILLS > YINCHUAN* > FAMILY ESTATE VINEYARD

By Chong Pan

The Soil

The Family Estate Vineyard lies in the Helan Mountain East Foothills, where aeolian sandy gravel soils dominate the landscape. Sandy loam mixed with gravel and pebbles provides exceptional drainage, while the soils are naturally low in organic matter and rich in calcium carbonate. Deep alluvial deposits washed from the Helan Mountains create a well-drained yet complex rooting environment, encouraging vines to establish deep root systems in search of water and nutrients.

The Wine

These free-draining calcareous soils naturally restrict vine vigour, resulting in lower yields and concentrated fruit. Gravel stores warmth during the day before releasing it as temperatures fall, promoting even ripening in Ningxia**'s continental climate. The Summit Cabernet Blend by Silver Heights is known for its intense black fruit, refined tannins, vibrant freshness and a subtle mineral tension that reflects the distinctive terroir of the Helan Mountain East Foothills.

*/ǐn.tʂʰwán/
**/nǐŋ.ɕjá/

UPPER MEKONG VALLEY

CHINA > YUNNAN > SHANGRI-LA > UPPER MEKONG VALLEY > AO YUN 敖云 VINEYARDS

By Chong Pan

The Soil

Ao Yun*'s vineyards are perched high in the Upper Mekong Valley between 2,200 and 2,600 metres above sea level, where mountain colluvial soils are interwoven with schist, granite, sandstone and fragments of limestone. These shallow, rocky soils offer exceptional drainage and naturally limit vine vigour, encouraging roots to penetrate deep into fractured bedrock in search of moisture and nutrients.

*/ǎʊ ỳn/

The Wine

The combination of high elevation, thin mountain soils and exceptional drainage creates one of the world's most distinctive expressions of Cabernet-based wine. Warm days and cool nights preserve natural acidity while allowing complete phenolic ripeness, producing wines of remarkable freshness, aromatic precision and finely structured tannins. Ao Yun combines power with elegance, delivering complexity, longevity and a profound sense of place.

CROUCH VALLEY

ENGLAND > ESSEX > CROUCH VALLEY > NEW HALL WINE ESTATE > CROUCH VALLEY VINEYARD

By Elinor C. T. Birch

The Soil

Crouch Valley Vineyard is planted predominantly on Eocene London Clay, formed during the Tertiary period, with chalk lying beneath the clay deposits. In places, the soils are complemented by loam and river terrace sediments, adding further complexity to the site. The clay-rich soils retain water and nutrients exceptionally well, helping to regulate vine growth and providing a reliable water supply throughout the growing season, while the underlying chalk contributes drainage and mineral balance.

The Wine

These clay-dominated soils, combined with the warm, dry climate of the Crouch Valley, provide ideal conditions for producing expressive Bacchus. New Hall Wine Estate's Bacchus Fumé displays concentrated citrus and orchard fruit flavours alongside classic elderflower and fresh herbal aromatics. Careful oak maturation adds subtle smoky and savoury complexity, creating a wine that balances freshness, texture and remarkable depth while expressing one of England's most exciting wine regions.

GEVREY-CHAMBERTIN

RANCE > BURGUNDY > CÔTE DE NUITS > GEVREY-CHAMBERTIN > CHAMBERTIN-CLOS DE BÈZE

By Patrick Payumo

The soil

Chambertin-Clos de Bèze*, is a historic Grand Cru site in Gevrey-Chambertin which alongside its sister-vineyard, Chambertin, is often considered the finest vineyards in the village. The vineyard is characterized by shallow soils with three distinct zones, with the upper slopes of the vineyard sitting on hard pinkish rock called Premeaux limestone, formed during the Bathonian age in the Jurassic period. Just below this layer of Prémeaux limestone lies calcaire argilleux or argilaceous Limestone, a limestone that contains a significant amount of clay, often visualized as a hardened marl.

Marnes à Ostrea Acuminata**, an ancient fossilized oyster bed atop clay minerals, characterizes the middle of the slope in Clos de Bèze. Its clay fraction containing smectite minerals with a high cation exchange capacity, enhancing its capability to retain nutrients.

Much of the lower slope of the vineyard is made up of calcaire à entroques*** or crinoidal limestone, best described as limestone made up predominantly of the remains of crinoids or sea lilies. Due to its impurities combined with geological faults in the area, this bedrock is easily weathered and friable.

Atop this kaleidoscope of bedrock, the top soil consists of both colluvium and marl and often described as luminous with pockets of oolitic limestone scattered in the vineyard surface with Clos de Bèze's upstairs neighbour, the Premier Cru Bel Air, contributing much of it through slope wash.

*/ʃɑ̃.bɛʁ.tɛ̃ klo də bɛz/
**/maʁn‿a ɔs.tʁe.a a.ky.mi.na.ta/
***/kal.kɛʁ a ɑ̃.tʁɔk/

The wine

Despite being situated in Marsannay-la-Côte, Bruno Clair holds 0.98 hectares of Clos de Bèze acquired by the domaine's founder Joseph Clair.

Bruno Clair's Clos de Bèze combines power and poise, initially showcasing its array of aromatics of crushed strawberries and raspberries, underpinned by subtle whole bunch spice notes of oolong tea and cinnamon, before gradually building intensity and revealing its immense depth of concentration and structure.

CHAMPAGNE

RANCE > CHAMPAGNE > MASSIFDE SAINT-THIERRY > HERMONVILLE > CLOS DE MARZILLY

By Elinor C. T. Birch

The soil

Clos de Marzilly is a historic enclosed vineyard (clos) situated near Hermonville in the Saint-Thierry Massif.

The site is characterised by sandy-clay (argilo-sableux)* soils over the chalk substrata that underpin much of Champagne.

The clay component provides water retention and supports Meunier ripening, while the sandy element promotes drainage and contributes to aromatic expression and finesse.

*/aʁ.ʒi.lo sa.blø/

The wine

Michel Fagot Le Clos de Marzilly* is a single-vineyard Champagne produced exclusively from Clos de Marzilly and made from 100% Pinot Meunier. The wine combines the generosity and roundness typical of Pinot Meunier with the freshness and mineral energy of the Saint-Thierry terroir. Aromas commonly show orchard fruits, floral and herbal nuances, mint, pastry and brioche notes from lees ageing, alongside a distinctive mineral vibrancy. The palate is supple yet structured, with depth, elegance and a persistent chalk-influenced finish.

*/mi.ʃɛl fa.go lə klo də maʁ.zi.ji/

WEHLEN

GERMANY > MOSEL > WEHLEN > WEHLENER SONNENUHR > IM LAYCHEN

By Katharina Ziehe

The Soil

Wehlener Sonnenuhr is one of the Mosel's great steep-slope vineyards, with vines rooted in blue Devonian slate. In the Im Laychen parcel, there is very little topsoil or humus, forcing the old vines to grow directly into moderately deep, weathered slate. This stony, heat-retentive soil absorbs and reflects warmth, helping grapes ripen in the Mosel's cool climate while supporting freshness, precision and mineral tension.

The Wine

Dr. Loosen's Wehlener Sonnenuhr "Im Laychen" Riesling Dry GG Réserve Old Vines expresses the clarity and energy of blue slate Riesling. The wine combines bright acidity with notes of white peach, green apple and delicate white flowers, while the old vines bring concentration and depth. Although charming in youth, its structure, purity and mineral drive give it significant ageing potential.

MITTELHAARDT

GERMANY > PFALZ > MITTELHAARDT > FORST > KIRCHENSTÜCK

By Katharina Ziehe

The Soil

Kirchenstück is one of the Pfalz's most celebrated vineyards, defined by a complex mix of sandy clay, clay marl, loam, limestone rubble and basalt. The site is gently sloped and enclosed by a narrow stone wall, which helps shape airflow and protect the vineyard from cold, damp air. Its varied geology includes warmth-retaining basalt and sandstone, a clay-rich middle section that stores moisture and minerals, and a deeper limestone plate that supports balance during the growing season.

The Wine

Dr. Bürklin-Wolf's Forster Kirchenstück G.C. Riesling Großes Gewächs is known for intensity, complexity and exceptional longevity. The vineyard's diverse soils contribute both richness and mineral poise, producing Riesling with delicate fruit, aromatic depth, length and structural precision. It is a wine built less on simple fruit expression and more on layering, tension and long ageing potential.

OFFALY

IRELAND > COUNTY OFFALY > BALLYCLERY > IRISH WINE ESTATES

By Kiki O'Rourke

The soil

Although much of Ireland is dominated by peat soils that are generally unsuitable for viticulture, Irish Wine Estates has been established on the rolling hills of Ballyclery, County Offaly, where the vineyard is planted on limestone till, alluvial deposits and marl. These well-drained calcareous soils, combined with a gentle south-facing slope and natural shelter, provide one of the country's most promising sites for grape growing. While the humus-rich topsoil encourages vigorous vine growth, careful canopy management and drainage are essential to achieving balance in Ireland's cool maritime climate.

The wine

Irish Wine Estates is pioneering a new chapter in Irish viticulture, with a long-term focus on producing premium sparkling wine that expresses the country's emerging terroir. Recognising that Irish wine is still in its infancy, the estate is trialling almost 30 grape varieties to identify those best suited to its soils and climate before releasing its first still wines, followed by sparkling wines in the years ahead. Rather than pursuing tradition alone, the project combines careful site selection, scientific research and experimentation to explore the future potential of Irish wine.

WAIKARI

NEW ZEALAND > NORTH CANTERBURY > WAIKARI > BELL HILL VINEYARD > SHELF BLOCK

By Samira Kakh

The soil

Shelf Block is planted on shallow Waikari soils, characterised by a clay loam topsoil of variable depth over fractured limestone bedrock. The limited soil depth naturally restricts vine vigour, while the fractured limestone provides excellent drainage and encourages deep root penetration. This combination of clay, limestone and low-vigour conditions creates an ideal environment for producing fruit of concentration, balance and remarkable site expression.

The wine

Bell Hill's Pinot Noir Single Vineyard Shelf Block is a striking expression of this distinctive limestone terroir. Rather than emphasising primary fruit, the wine develops a complex spectrum of savoury aromas, earthy nuances and dried herb characters. Fine tannins, vibrant acidity and exceptional mineral tension provide structure and longevity, resulting in a Pinot Noir of precision, elegance and profound sense of place.

HEMEL-EN-AARDE VALLEY

SOUTH ARICA > WESTERN CAPE > HEMEL-EN-AARDE VALLEY > HAMILTON RUSSELL VINEYARDE > ESTATE VINEYARD

By Joamari Van der Walt

The soil

Hamilton Russell Vineyards is planted on clay-rich Bokkeveld shale soils in the Hemel-en-Aarde Valley. These ancient shale-derived soils are renowned for their ability to retain moisture while providing excellent structure for deep root development. Their high clay content naturally moderates vine growth and supports slow, even ripening, making them particularly well suited to cool-climate Pinot Noir and Chardonnay.

The wine

The moisture-retentive Bokkeveld shale, combined with the cool maritime influence of the nearby Atlantic Ocean, produces Pinot Noir of remarkable restraint and complexity. Slow ripening allows flavours to develop gradually while preserving freshness and natural acidity, resulting in wines with refined tannins, savoury depth, bright red fruit and exceptional elegance. Hamilton Russell's Pinot Noir is celebrated for its Burgundian-inspired style and its distinctive expression of the Hemel-en-Aarde terroir.

SWARTLAND

SOUTH ARICA > WESTERN CAPE > SWARTLAND >
VARIOUS OLD VINE SITES > SADIE FAMILY WINES

By Joamari Van der Walt

The soil

Sadie Family Wines sources fruit for Columella from a collection of old vineyards across Swartland, each planted on a mosaic of granite, shale and iron-rich soils. These diverse soil types contribute contrasting characteristics: granite promotes excellent drainage and vine balance, shale retains moisture and builds structure, while iron-rich soils add further complexity and depth. By blending vineyards from multiple geological origins, the wine captures the full diversity of the Swartland landscape.

The wine

The interplay of these contrasting soils gives Columella its remarkable complexity and sense of place. Granite contributes elegance, freshness and aromatic lift, while shale provides structure, texture and longevity. The resulting Syrah-led blend is layered, refined and deeply expressive, combining concentrated dark fruit with savoury spice, mineral tension and exceptional ageing potential. Widely regarded as one of South Africa's greatest wines, Columella is a benchmark expression of Swartland terroir.

MACHARNDO

SPAIN > ANDALOÍA > BREZ > MACHARNDO (A LEGENDARY PAGOS (SINGLE VINEYARD AREA)) > SAN CAYETANO VINEYARD (PLANTED IN 1988)

By Finn McCabe

The soil

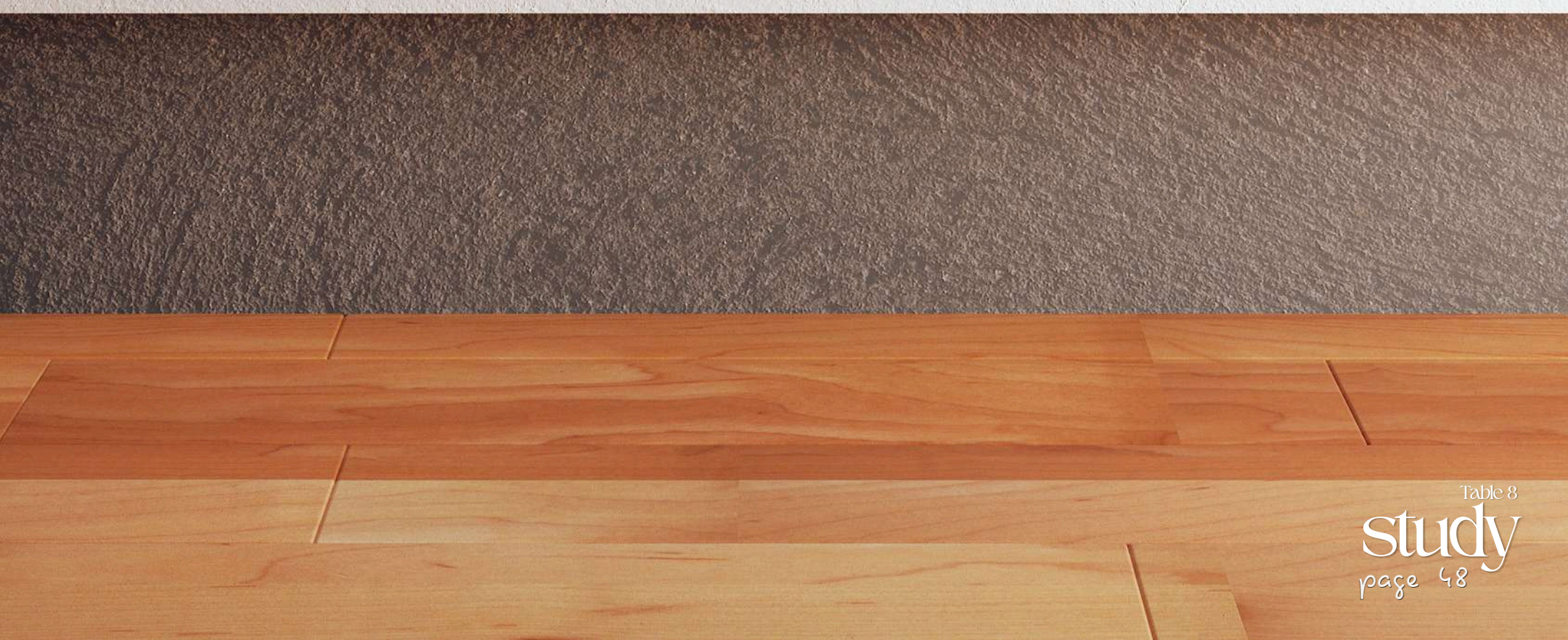
San Cayetano Vineyard is planted in Albariza de Barajuelas, one of the six recognised types of Albariza found in Jerez. This bright white chalky marl contains 60–70% limestone and is exceptionally rich in fossilised diatoms—microscopic marine organisms that bear witness to the region's ancient seabed origins. Distinctive laminated layers of white chalk create a dense structure that restricts root penetration, naturally reducing vine vigour and yields while producing smaller, thicker-skinned grapes. Like all Albariza soils, it acts as a natural sponge, absorbing winter rainfall before forming a protective surface crust during the hot, dry summers. This remarkable ability to capture and conserve water provides the vines with a vital source of moisture throughout the growing season.

The wine

The naturally low yields produced by Albariza de Barajuelas result in Palomino Fino of remarkable concentration and structure. Antonio de la Riva's San Cayetano expresses the power and precision for which Macharnudo is renowned, combining savoury depth with chalky minerality, vibrant freshness and impressive texture. Although bottled as an unfortified Vino de la Tierra de Cádiz, it offers a compelling expression of one of Jerez's most celebrated vineyard sites and its distinctive limestone-rich terroir.

What is the soil?
What is the grape variety?

The Dragon Bones Vineyard is planted on soils in New Zealand's Waitaki Valley. The vineyard sits on ancient marine soils rich in fossil deposits, reflecting the region's geological history when it lay beneath the sea. These free-draining calcareous soils are a defining feature of Waitaki and contribute to the region's reputation for producing this grape variety with remarkable purity, vibrant natural acidity, and a distinctive mineral expression. See the next page for the answers, and for an exquisite wine from this remarkable vineyard and region.



LIMESTONE
LIMESTONE
LIMESTONE

2025 FREQUENCY

Botrytis Riesling

Dragon Bones Vineyard

North Otago

by Sierra Reed

Reed Wines

$55.00 @ Great Little Vineyards

Every effort has been made to ensure the accuracy of the information contained in this publication at the time of publication. As research into wine, geology and viticulture continues to evolve, readers are encouraged to consult primary sources where appropriate.

Thank you for supporting independent wine education and helping us foster a more knowledgeable, curious and connected wine community.

2026 is your year