

cuttings”, a collection of 135 different genetic strains of Malbec vines. But even the finest genetic material failed to yield anything approaching an Argentine Lafite. At the 1999 edition of the Spectator event, the Catenas met Baron Éric de Rothschild, the head of Lafite itself. Rothschild told them he wanted to make wine in Argentina, a conversation that led to Caro, a joint Catena-Lafite venture. Crucially, he also stressed the importance of terroir, setting Laura on what would soon become her life’s mission. “He drove Laura crazy talking about soil, soil, soil,” Nicolás recalls. “Nothing but soil.”

**N**one of the great pre-Columbian civilisations made it as far south as Mendoza, which is about as distant from the equator as Dallas. Nonetheless, when building his winery in the late 1990s, Nicolás wanted to assert Catena Zapata’s Latin identity architecturally, and to pay homage to the accomplishments in maths, astronomy and writing of the region’s indigenous peoples. He settled on a terraced Mayan pyramid, cut out of textured local yellow stone. Its two barrel rooms sit on either side of the entrance road, pointing towards the vineyards and mountains like the paws of a sphinx.

One thing Mendoza does have in common with the Mayas’ Central American jungles is the blistering sun. I first arrived at Catena Zapata on a hot day shortly before harvest, and my sunglasses and cap barely offered any respite from the brilliant rays. Standing between the vine rows that point obliquely towards the pyramid, Rodrigo Alonso, from the CIW, handed me a lens, and had me adjust it until it cast the smallest circle of light possible, which meant it was perpendicular to the sun. After some fumbling, he positioned the disk on a pair of hand-held photometers, which measure solar intensity. For photosynthetic active radiation (PAR) – what gives plants energy – the reading was 2,160; for UV-B (a type of ultraviolet light) it was 0.27. I had no



**Pick of the bunch**  
Harvesting Malbec at the Adrianna vineyard

idea how much that was, but since my skin felt like it was roasting on a skewer, they must have been a lot.

Our next stop was a patch of the Adrianna vineyard, named after Laura’s younger sister, which sits in the Gualtallary region, about 40 minutes’ drive towards the cordillera. Our sturdy SUV had climbed some 400 metres, and the air was noticeably cooler. A tuft of grey clouds deposited a light drizzle, rendering our photometer impotent. Suddenly, a sliver of the overcast sky cleared, allowing a lone ray, clearly visible from the side, to illuminate a few lucky plants. “It’s literally a window of opportunity,” Buscema quipped, scrambling to hand me the lens. Shivering in the rain, I wondered whether the photometer would detect the light at all. The numbers said otherwise: par of 2,200 and UV-B of 0.35, 2% and 30% stronger than the brutal sun in the valley.

**“IF I FIND THAT PIECE OF LAND, AND IF WE MAKE THAT ONE WINE, IT WOULD CHANGE THE HISTORY OF MY COUNTRY”**

Hard to believe but impossible to dispute, this finding was the first clue in Catena’s hunt for an enchanted franja – Spanish for a little “strip” of land. In the 1990s, Nicolás, livid over Lurton’s Languedoc comparison, set out to find a cooler climate for vine cultivation. Planting farther south would be risky, as winter frosts could ruin harvest after harvest. The other option was to look upwards. Despite the prevalence of the Andes in marketing materials for Mendoza Malbecs, local winemakers had never actually planted grapes on their relatively frigid slopes. Nicolás decided to try. To his surprise, the vines shrugged off the lower temperatures and served up a perfectly balanced beverage, with fresh, concentrated fruit rich enough to stand up to the brisk acidity and robust, even rugged tannins. At first, he had no idea why. But after field workers kept returning from a long day in Adrianna with sunburns as red as the grapes they tended, the answer became clear: the stronger solar radiation high in the mountains compensated for the cooler air.

Laura soon realised that the blazing Andean sun was literally lighting the way towards her yet-undiscovered franja. Catena Zapata promptly set up weather stations in all of its vineyards. It took fields at different altitudes and covered half of them in plastic that filters out UV-B. In the valley, the shielded grapes were identical to the exposed ones. But above 1,300 metres, the uncovered group had thicker skins and more preservative tannins, presumably as a defence mechanism against the punishing UV-B. To test how far it could push the altitude-temperature trade-off, the firm planted a chain of experimental vineyards as far north as Salta, near the Bolivian border, and as high as 2,000 metres. The optimal band at Mendoza’s latitude ran as high as 1,600 metres or so, far above previous estimates.

Vineyards at the same altitude can of course still vary widely. Just as influential is the impact of soil. Although everyone recognises its importance, no one knows what actually makes one parcel better than another, save a few handy rules of thumb (for example, Merlot tends to flourish on clay). In order to choose among the countless sites at the preferred height, the CIW is dissecting its existing vineyards in the hope of mapping soil types to wine attributes. Because the ground under Mendoza’s vineyards was deposited by the shifting paths of ancient rivers and then jostled by frequent earthquakes, its composition changes with every step. That has forced Catena Zapata to puncture its otherwise picturesque fields with around 70 manholes per hectare, each taking about two days to excavate.

Daniela Mezzatesta, the CIW’s soil guru, took me to one typical pit in Adrianna, about 80 centimetres deep. It clearly featured a top layer of brown dirt, followed by somewhat tougher white limestone, a layer of small white pebbles and finally a bed of much larger grey stones – as well as a pair of gigantic, tan-striped spiders. Using rubbing alcohol and a cigarette lighter, she sterilised her equipment, handed me a shovel, pincers and scissors, and had me dig out a gram of soil and 0.1 grams of vine roots.

From the vineyard, we drove to the university in Mendoza where she is getting her PhD, in order to identify the microbes that flourished in “my” samples. “It’s like a cooking show,” explained Mezzatesta, sporting a blonde pony tail and glasses with thick magenta frames. “Mix it up, stick it in and you’ve got your cake.” We dissolved the soil in water and deposited a few drops onto a Petri dish. Like cupcakes in an oven, the lab’s fridge contained plate after plate of cultured soils from various vineyards. Some were overrun with bacteria; others, seeded with lower concentrations, displayed distinct, isolated colonies. The CIW will sequence each colony’s DNA, and then deploy them on plants under lab conditions to determine their effect. One recent study found that vines whose soil was populated with one beneficial strain grew more leaves and were more resistant to drought.

Even if Catena manages to locate a plot with generous sunlight, Malbec-friendly soil composition and a lively microbiome, she still might not find what she’s looking for. Both Laura and her father have

a connoisseur’s appreciation for the complexity that can only emerge with extended cellaring, and Nicolás keeps a dusty vault at the family’s summer home stocked with DRC and first growths from the 1980s. The riddle of age-worthiness is perhaps the most difficult of all to crack, since proper experiments would require bottles to be kept in lab conditions for a century.

But Catena has insisted that the CIW tackle this seemingly intractable problem, by researching “accelerated ageing” – modifying wine in ways that mimic the effects of the slower reactions that occur over decades of slumber. This was the purpose of the revolting fluid Agazzi served to me in the lab: he was heating it in order to determine whether baked wine could serve as a proxy for old wine. Mature wines are easy to identify by their colour: they typically appear a shade of brick or even orange. Do heated bottles undergo a similar process? Just after I nearly choked on my beverage, Agazzi escorted me to his spectrophotometer, a device that measures how liquids absorb light.



**Chapeau Catena**  
Daniela Mezzatesta measures out a soil pit

We put samples of each wine into wafer-thin glass cells, closed the machine’s lid and took the readings. Sure enough, the baked wine’s hue, a measure of its colour, was .793, compared with .566 for the one stored at room temperature. Because it let more green light through, the eye perceived its shade of green’s opposite, red, as less intense.

I was impressed, but also perplexed: how can destroying wine help Catena Zapata make its tipples taste better rather than worse? The answer is that the CIW is using baking as a kind of stress test: all wines subjected to this treatment will suffer, but some will suffer more and others less. If the hue of a wine from one varietal or vineyard increases only slightly after a month in the oven, there’s a good chance it has the stuffing to survive decades in a cellar as well.

**T**he biggest perk of being a wine writer is drinking free wine, and I’m pleased to say I had some pretty good wines in Mendoza. I tried recent vintages of Catena Zapata’s crisp White Stones and White Bones Chardonnays, and its 2011 Mundus Bacillus Terrae Malbec, which offered a mixed-berry-yogurt fruit profile and pleasant floral notes. At a blind tasting of four older vintages, I was particularly impressed with the 1997 Catena Alta Cabernet Sauvignon, which tickled my nose with scents of nutmeg, vanilla and ripe red currants, and went down light and easy on the palate.

But Catena has set the highest of bars – “to compete with the great wines of the world” – and no one could have mistaken even that terrific ‘97 Cab for Lafite. Catena herself is cautious about assessing her progress. “It’s like a treasure hunter looking for a sunken ship,” she says. “When my dad had the vision to do this 20 years ago, he was just playing the lottery. A lot of it was guesswork. But my job is potentially easier, because we have more information. The science tells me that we should be able to make wines here that are extraordinary. We have the conditions: a cool climate, nice winds, poor, shallow, well-drained soils, and the sunlight thing. And we have a unique genetic popula-

tion. And studying the chemical structure of the wine and comparing it to the chemical composition that the literature says age-worthy wines have, they have high tannin concentration and appropriate pH. I think it’s due to this high-altitude heaven, with flavours, concentration, texture and aromatic originality. And I think that somewhere within that high-altitude heaven there is a franja. If I find that piece of land, and if we make that one wine, it would change the history of my country.”

There’s no shortage of external validation for Catena’s claims. The firm’s scores from critics continue to drift up, to the point where they not only consistently top the Argentine rankings but nuzzle up against European heavyweights. And some wealthy buyers seem to agree, as its Estiba Reservada line is far and away Argentina’s most expensive wine. But Catena Zapata was already widely acclaimed long before it launched the CIW. And such plaudits should be taken with a hefty grain of salt: many “cult” Cabernets from California routinely receive ratings of 98 to 100 points and sell for four-digit prices, despite viscous textures and cloying sweetness that would drive anyone with an Old World palate to pour them down the drain.

By her own estimate, Catena says she’s “60% to 70% of the way” to the age-worthy, terroir-driven heights she seeks. I thought that was a bit generous, and though I didn’t say so outright, I sensed she could tell. So on my last day in Mendoza, she took me to her best candidate for franja status: a vineyard in Gualtallary Alto called High G Lot, planted in 2010 and owned directly by her and Adrianna. At 1,550 metres above sea level, it is close to the maximum altitude for grape-growing. Much of the neighbouring scrubland is too rocky to plant on at all, and the ground is littered with white limestone pebbles. A small stone shrine sits by the entrance.

No one talks a better game about Malbec than Catena, but in her own private vineyard, she’s planted Pinot Noir. The wine is still experimental and has not yet been released commercially. But she and Vigil had brought along barrel samples, and we sat on a few log stools next to a fruit orchard and grabbed glasses out of a cardboard box. The wine was nearly transparent, ruby-coloured and like no Argentine red I’d ever had before. Its complex nose featured orange peel, flowers, celery and juniper berries, with cranberries and sour cherries in the background. It had impressive heft in the mouth, and acidity so bracing I feared for the enamel on my teeth. It tasted even cooler-climate than Burgundy – blind, I’d probably have guessed it was from Oregon’s Willamette Valley, or maybe a German Spätburgunder. I certainly wasn’t sure it was a great wine: it will take a few decades of ageing to find out, and in general, grapevines need to get older before they yield fully concentrated fruit. But for the first time since I arrived, I also wasn’t sure it wasn’t.

It was science that led Catena to explore these heights. “This wasn’t like buying extra lottery tickets,” she says. “We had gained information that allowed us to form a more accurate hypothesis. We didn’t have a frost problem in Adrianna, and ripening was fine, so we hadn’t yet reached the limit of vine cultivation. I liked the acidity and the cool-climate aromatics and I thought, ‘What will a little cooler do?’ Because we had studied the sunlight intensity, I knew it wasn’t going to burn my grapes.” She also had a few pits dug to confirm the soil was appropriately shallow and not too rocky.

But there are still thousands of plots in Mendoza that would meet those criteria. No, to truly find her franja, the Stanford MD had to abandon science in favour of homespun local knowledge. “I went to the orchard back there in 2010 and ate the apricots and apples,” she recalls. “They were the best I’d ever had. My grandfather always used to say: if the orchards are good and nature gives you good fruit, it will give you good fruit.”

Dan Rosenheck is The Economist’s data editor and writes about wine for 1843

PHOTOGRAPHS SARA MATTHEWS



Reprint of:

**The Economist** **1843**  
THE ECONOMIST UNWINDS

# HIGH HOPES IN THE ANDES

Can science help an Argentine heiress produce a New World wine as complex as a Bordeaux? Dan Rosenheck visits the vineyards and laboratories of Catena Zapata

DAN ROSENHECK | DECEMBER/JANUARY 2017

It is one of wine’s cruellest ironies that there seems to be no perceptible relationship between the beauty of a landscape and the beauty of the beverages it bequeaths. The “first growth” reds of Bordeaux, revered since the 18th century, spring from martially spaced rows of grapevine monoculture parked on a featureless plain. In contrast, Spain’s Canary Islands offer a surreal panorama of deep pits dug into ebony-coloured volcanic ash, surrounded by crescent-shaped stone walls that each protect a lone, hardy plant from the fierce trade winds. The resulting tippie is a testament to nature’s resilience and man’s perseverance – and is generally consigned to supermarket discount racks.

Nowhere is this dissonance more jarring than Mendoza, in west-central Argentina. Nestled at the base of the jagged Andes mountains, its vineyards seem to run right up to the edge of the cordillera (Spanish for “chain”), which rises as much as 5,000 metres (16,400 feet) off the valley floor in just 50km (30 miles). On a clear day, it is hard to resist clichéd musings on the smallness of mankind while craning one’s neck to admire their majestic, serrated peaks; when it’s overcast, it’s easy to confuse the snow-capped summits for clouds. When you’re walking through the vineyards on a slight incline, a one-metre-tall T-shaped plant can obscure the view of a 6,000-metre mountain.

Cypress-like alamos trees shield the fields from the zonda, the biting gusts that blow off the peaks whenever someone flouts the



#### Terroir tactics

Malbec grapes in the Adrianna vineyard

wishes of Pachamama, the Mother-Earth deity of indigenous Andeans. With vast distances muffling human noise, the calls of the chimango, a brown bird of prey, reverberate across the vineyards, ranging from the rat-tat of machine-gun fire to the squeaks of a toy dog. Condors occasionally swoop across the sky on the world’s largest wingspan, over three metres across. And copper-skinned, moustachioed gauchos mutter at their horses in unintelligible Spanish as they clop along dirt roads, strewn with boulders and pockmarked with dried rivulets, that defeat all but the sturdiest four-wheel-drive SUVs.

The sun beats down fiercely in this high desert, making leaf canopies seem to glow from within. To quench the vines’ thirst, discreetly laid irrigation pipes release fresh Andean glacier melt one drip at a time. In its native France, the Malbec varietal coughs up a tough, gnarly wine. Here, flourishing in its adopted home, it yields plump berries that practically burst on the vine. The first time you yank in the scenery, swipe a pitch-black grape or two from an unsuspecting owner and bite into its juicy flesh, it seems that, as sure as the sun sets behind the Andes, the resulting wine must be spectacular.

And yet. It’s not that Argentine Malbec is plonk. It’s ripe, voluptuous and a bit spicy, perfect for washing down a tender bife de

chorizo steak. But there’s a reason that the most coveted Argentine bottles sell for around \$100 a pop rather than \$1,000, and it’s not just European snobbery: they’re not fine wine. They don’t shape-shift as a night goes on, recapturing the drinker’s attention with each unexpected sip. They don’t unfurl layer after layer of complexity after a 30-year nap in a dank cellar. They betray no hint of their origins – good luck distinguishing Malbecs from Tunuyán and La Consulta in a blind tasting. For that matter, good luck distinguishing high-priced Argentine reds from their counterparts anywhere else in the New World. If you dig the plum-smoothie style, grabbing an Argentine Malbec is a perfectly defensible choice. But if you’re the heiress to the first family of Argentine wine and all you want is a beverage that expresses a unique sense of place and can last a century – like, say, a great Bordeaux first growth – then you’ve got a problem.

Laura Catena is an emergency-room doctor with a glittering resumé. She graduated magna cum laude from Harvard College in 1988, and from Stanford Medical School four years later. In 1997 she started practising at the University of California at San Francisco (UCSF), ranked by U.S. News as one of America’s ten best hospitals. Today, she splits her time between UCSF, where she primarily treats heart attacks, strokes, overwhelming bacterial infections and the occasional walk-in gunshot victim, and California Pacific Medical Centre, where she often handles newborns suffering from meningitis or seizures.

Bringing people back from death’s door is Catena’s moonlight gig – she is on shift from 6pm to 2am six to eight times a month. By day, she is the managing director of Catena Zapata, the flagship brand of a family-owned company that sells bottles worth over \$140m a year, making it Argentina’s second-biggest wine exporter. The firm was founded in 1902 by her great-grandfather Nicola Catena, and she assumed the reins from her father Nicolás in 2009. She spends four months a year in Argentina overseeing the winery’s operations, and two more as the olive-skinned, pony-tailed “face of Argentine wine”, promoting her products at tastings and dinners across the globe. She manages her staff of 120 via Skype and WhatsApp. She also has three well-adjusted children, aged 11, 15 and 18.

Boundlessly energetic, Catena is used to questions about how she fits it all in. “The way I do everything is my one-day rule,” she says. “Any country in the world that wants a tasting, I’ll go for one day. I’ve been to Japan for one day. When I go over, I get a ton of work done. It’s the only time I can read. Then, when I go back, I sleep all the way, and don’t have to pay for a hotel.” Unless she gets a frequent-flyer upgrade, she rides economy. Svelte and petite, the former aerobics instructor eschews most bread and cheese, in order to maintain both her physique and her glass-and-a-half-a-day wine habit. She looks a good decade younger than her 49 years, and can curl up and doze off even in today’s cramped aircraft cabins.

Catena moved to California with her family at the age of 13, when Argentina’s brutal military dictatorship shuttered her boarding school, on ill-founded suspicions that it harboured guerrilla sympathisers. She speaks English like a native, and by now is probably more culturally American than Argentine. Nonetheless, she waxes patriotic when laying out her mission. “Running a successful business and helping Argentine wine prosper is helping my country,” she says. “Do you know how many people have jobs and can send their kids to college? If we weren’t here, it would be a different story.”

Yet unlike most flag-waving Argentine vintners, Catena’s enthusiasm for her country is tempered by an exceedingly cosmopolitan palate. When she was an undergraduate at Harvard, her father gave her a set of premium Riedel stemware, an American Express card exclusively for wine purchases and a fake ID. She made a table out of

a wooden wine box, and when Nicolás came to visit they would conduct rigorous blind tastings in her dorm room, focusing on the French first growths. Her friends considered this “weird”.

The elder Catena had already transformed his company from the volume business he inherited into a premium brand. During his exile in the early 1980s, he began taking regular trips to Napa, discovered for the first time the calibre of wines made abroad, and became determined to replicate the California formula at home. He bought state-of-the-art fermentation tanks, imported the finest Cabernet Sauvignon and Chardonnay cuttings and invested in exorbitant French oak barrels. In 1992 he invited Jacques Lurton, a globe-trotting consultant, to his parents’ home in the tiny Mendoza village of Libertad, and proudly poured what he hoped would be a masterpiece. “Excellent wine,” Lurton opined approvingly. “It reminds me of...a good Languedoc.”

Nicolás was devastated. The Languedoc is among the humbler French wine regions, with a reputation for mass-market volume and single-digit prices. If all his efforts to grow Bordeaux in Argentina were yielding merely a quaffable Languedoc, that meant there was no technique or technology that could substitute for terroir – the French word for the unique signature of a vineyard’s soil and climate. The only way to make world-class wine, he concluded, was to find a world-class vineyard. That assumed, of course, that lurking in the shadows of the Andean summits was a terroir worth revealing. Maybe no one had ever tried to make such ambitious wine there for a reason.

My first sip of wine at Catena Zapata was among the vilest beverages I’ve ever tried in my life. It tasted like a stewed berry compote left to fester a few weeks too long, and only a strategically located spittoon saved me from the indignity of gulping it down. I gave a half-pained, half-quizzical look to Federico Agazzi, the employee who had served up this heinous concoction, as I pointed to the offending glass. “Good job!” he said, shaking my hand.

Agazzi had a good excuse for this disastrously poor showing: he had just removed it from an oven where it had spent an entire month sweating at 50°C, and wanted to see if I could identify the baked wine blind in a flight with two others. A newly minted PhD in chemistry, Agazzi is a recent addition to the team of whiz kids at the Catena Institute of Wine (CIW), which bills itself as the world’s leading corporate R&D department focused on publishing basic academic research about the biochemistry of fine wine. Laura had tasked him with determining which of the company’s vineyards would yield the most age-worthy fruit, and he was searching for answers by heating wine to cruel and unusual temperatures.

By the time Catena took over the firm in 2009, no one could accuse it of making Languedoc. Under Nicolás’s stewardship, the brand had already become the flagbearer for serious Argentine wine abroad, routinely receiving stratospheric scores from critics. Alejandro Vigil, the firm’s goateed, cargo-short-sporting winemaker, seemed satisfied with the accolades. Catena wasn’t. “In Argentina, people said French wine was for snobs,” she says. “I said, ‘That’s crazy. French wines are incredible.’ I liked my wines when we started, but I liked DRC and Lafite more.” (DRC is Domaine de la Romanée-Conti, the most exalted name in Burgundy; Lafite is Lafite Rothschild, historically the priciest of the Bordeaux first growths.)

In principle, charting a wine’s ageing curve should be straightforward: you just open one bottle a decade, and see how it tastes. In Burgundy, probably the most popular region among connoisseurs, vintners have been doing just that for centuries. As a result, mere centimetres can separate a terroir whose bounty lasts a century from one whose wines are mostly consumed within a decade. Unfortunately, unlike their Burgundian predecessors, modern producers can’t wait for their grandchildren to find out which plots are the sturdiest.

Trained in academic medicine, Catena wondered if her background might enable her to resolve this quandary. Her father had tried and failed to compensate for inferior terroir with fancy equipment. But perhaps geology, climatology and biology might still help her hunt

for whatever oenological gold already lay along the Andean slopes. Catena insists she sees her role as that of a detective, not an inventor. And she has modelled the CIW not after the development arm of a pharmaceutical firm, synthesising precious new compounds from scratch, but rather the upstream division of an oil company, searching for natural treasures the Earth has hidden away.

For a \$300-billion-a-year industry, wine science is in a remarkably pitiful state. Although mass producers have boosted their volumes using R&D, prestigious European winemakers simply harvest from the same fields they have cultivated for centuries. Moreover, even if they were using science, they probably wouldn’t tell you: their marketing relies on the fantasy of the hardscrabble yeoman farmer faithfully carrying out traditions handed down by his ancestors.

As a result, precious little is known about what makes wine taste and smell the way it does. The biochemistry is mindbogglingly complex. One recent study of the genomes of microbes in fermenting grape must found that a third had never been identified. Every glass of wine contains thousands of different substances – no one can even estimate how many.

Researchers have taken a few baby steps at mapping molecules to smells. They boil off aromatic compounds one by one, have trained tasters describe each scent, and then determine their chemical signature using gas chromatography and mass spectrometry – the same process used to detect explosive residue at airports. For example, methoxypyrazines are associated with the bell-pepper note in Cabernet Sauvignon, and thiols with the passionfruit character of Sauvignon Blanc. But many smells are produced by combinations of compounds, and humans can perceive a chemical differently when it enters the nose pure rather than as a small element of a sniff of wine.

All of this research is still in its infancy, and requires experienced scientists and fancy equipment: a gas chromatographer with an olfactory port costs \$160,000. Catena Zapata could hardly justify such an outlay. Instead, the firm made a far more versatile investment: it sent Fernando Buscema, a winemaker, to study at the University of California, Davis, America’s leading graduate programme in wine studies.

Buscema duly devoted his research project to Catena’s quest for terroir. He took Malbec grapes from 41 different sites in Argentina and California, vinified them under identical conditions, analysed them chemically, and set up a “sensory panel” of 15 tasters to describe them. In 2014 the journal Food Chemistry published the study. It found that Mendoza Malbecs had higher alcohol and lower acidity than Californian ones, and were characterised as sweeter with more red fruit and chocolate character. Within Argentina, the rainier Luján and San Carlos regions yielded wines that tasted more astringent and contained higher concentrations of floral-smelling linalool, while those from warmer Tupungato tasted saltier and were rich in alpha-pinene, a compound plentiful in pine trees and rosemary. The comprehensive study linked every node in the chain of wine knowledge: terroir, chemical composition and human sensory perception.

Buscema’s study was proof of Catena’s core concept: that good terroir was not distributed randomly across the Earth, but instead followed predictable patterns. By discovering them, the firm could make better-educated guesses about where to plant. When Buscema returned to Mendoza in 2013, Catena Zapata formally established the CIW and named him director. He proved an eager convert. “How did Burgundy get the knowledge of their vineyards?” he asks. “Trial and error. They had three centuries to understand them. We don’t. But science lets you reach conclusions faster. Via science, we can fast-track.”

The CIW’s staff has already burgeoned to double-digit numbers and international recognition. But if you ask about the institute in Nicolás’s hometown of Libertad, only blank stares await you. The hamlet of 582 people is an old-school company town: Catena Zapata funds the one-room school where Nicolás studied as a child, and still sends all of its broken equipment to a machine shop in Libertad for repair.



#### Crack team of tasters

Laura Catena with one of the sheep whose manure is used to fertilise her vineyards

On the main drag, the back of a concrete shelter at a bus stop is painted with a mural depicting rows of grapevines leading up to a building labelled “Catena”.

Laura has visited 41 countries, but nowhere seems to excite her like Libertad. Driving past the pink church where her grandparents were married set off a Proustian flashback. “That’s it!” she exclaimed, pointing at a nondescript storefront that once housed a sweetshop. “After we moved to BA [Buenos Aires], I used to spend the summers here. The whole day consisted of playing in the forest, which to me was like Robin Hood’s Sherwood Forest. And the most exciting moment of the day was when you would cross to buy a Kinder egg at the candy store.”

Such sepia-toned nostalgia might seem like the last place one would look for the roots of Catena Zapata’s effort to demystify wine through science. But, rocking in a chair on the back porch of the family’s summer residence, its patriarch traces the birth of the CIW all the way back to his own origins. The Catena side of Catena Zapata, who departed Italy’s northern Adriatic coast in 1898, were immigrant strivers. “They were Italian migrants who came with a Protestant ethic,” recalls Nicolás, a slim, regal, soft-spoken 77-year-old. “My grandfather saw this as the promised land...He brought a culture of a lot of work, 12 or 14 hours a day including Saturdays, and really extreme savings.”

The Zapatas, on the other hand, were Argentine aristocrats descended from the country’s original Spanish colonisers, and owned vast tracts of the pampas surrounding Buenos Aires. But unlike their fellow rentiers, they eschewed polo ponies and conspicuous consumption in favour of the life of the mind. Nicolás’s mother, Angélica Zapata, ran a private school in Mendoza, where she was renowned for haranguing the parents of absentee children for their insufficient

commitment to education. Much to her husband’s dismay, she forbade Nicolás from going into business; instead, she said, he should become an academic.

After Angélica died in a car accident when Nicolás was 18, he did his best to honour her directive. He won a PhD scholarship at the University of Chicago’s economics department to study under Milton Friedman, and though he turned it down to help his father in the wine business, he later did graduate work at Columbia. When he returned to Argentina following the kidnapping of his brother-in-law in 1972, he effectively brought his studies with him by founding CEMA, a graduate school of economics in Buenos Aires. It remains one of the country’s leading higher-education institutions today.

As a student, the young Laura absorbed her father’s inquisitive, empirical bent. But she had no interest in following in his footsteps professionally. “I became a doctor because I wanted to help people,” she says. “Making wine was first of all a business for me. I didn’t see the farmer side in it. And wine can cause alcoholism. I wanted to do my own thing.” But nothing makes an Argentine reconsider like a dose of wounded pride. In 1995, she accompanied Nicolás to Wine Spectator magazine’s biennial tasting in New York, where hundreds of vintners pour choice vintages for the public. At that point, Argentine wine was still little-known – and it showed. “Everyone’s at the Bordeaux lines, or California,” she recalls, reliving the moment. “I’m standing in the booth, and no one is drinking my wine. They’re just spitting in my spittoon. All my life, my dad was my hero. I had him on a pedestal. Now I thought he’d be a big failure. The next day, I said, ‘Dad, I’m coming to work with you.’”

Combining Catena work ethic with Zapata intellectualism, Laura simultaneously took over vineyard research and the United States export market. Her first contribution was assembling the “Catena

**IN ITS NATIVE FRANCE, THE MALBEC VARIETAL COUGHTS UP A TOUGH, GNARLY WINE. HERE, FLOURISHING IN ITS ADOPTED HOME, IT YIELDS PLUMP BERRIES THAT PRACTICALLY BURST ON THE VINE.**

**AT THE TIME, THERE WAS NO PARTICULAR REASON TO BELIEVE THERE WAS EVEN AN INCH OF LAFITE-CALIBRE TERROIR TO BE FOUND IN ARGENTINA**