FROM FOREST TO GLASS

A Campari Academy Training

CAMPARI ACADEMY

SESSION OVERVIEW

"**MOST** of your bourbons on the market are four or five years old. It hasn't matured enough for me at that age. It's still, I call it green.

I like bourbons from 6 to 12 or 13. A lot of people think the older it is, the better it is. But me personally, if it gets much over 13, and I don't care for it because we have to use a new barrel every time.

You lose a lot of that caramel and vanilla; the white oak wood becomes the dominant flavor. I don't like a lot of woody taste. Now, if you like a lot of woody taste, you'd like an older bourbon.

My personal taste, I want a combination of the caramel, vanilla, sweetness and wood."

Jimmy Russell
Wild Turkey Master Distiller
Discussing Ageing of Bourbon

OUR From Forest to Glass session is an in-depth exploration of the influence of oak not just to the world of alcohol, but throughout human history.

Firstly, we will focus our attention on the broader historical occurrences where Oak has influenced humanities journey through time, along with how the construction of the Barrel changed transportation and storage forever.

Next, we take a take some time getting to know the types of oak that we see used on modern times for the storage and creation of additional flavours across the alcohol world; looking to Europe, Japan and America.

Along the journey you will be introduced to some amazing Whiskies coming from Lawrenceburg, Kentucky made by two of the most important names in Bourbon, Jimmy and Eddie Russell.

Thank you for joining us in uncovering the influence of oak through time and why that Bourbon in your glass today is so special.

The Campari Academy Team

BOOKLET CONTENT

THE BOURBON CATEGORY

CAMPARI ACADEMY

Bourbon is America's Native Spirit. This statement was ratified and protected in law on May 4th 1964, where nearly a century and a half of distilled evolution came together to lay out on paper what is and isn't allowed to be named Bourbon.

With whiskey production being moved from Pennsylvania to Kentucky to avoid taxation in the late 1700s, a new focus on using grains that were available in plentiful amounts saw a change in the profile of the base spirit.

Bring in some ingenuity from a priest realising there was a way to bring more flavour & complexity to his spirit while sending it down river on a boat, and that's how the precursor of Bourbon came to life.

As for the laws and regulations themselves, they cover everything from where it's made, how strong it starts off at, what it spends its life in and for how many years it will be in that barrel.

The main rules that define Bourbon,
state that it needs to be:

MADE IN THE USA (any state)

MADE FROM A MASH-BILL OF AT LEAST 51% CORN

AGED FOR AT LEAST 2 YEARS IN A NEW,
CHARRED OAK BARREL

DISTILLED AT NO MORE THAN 160 PROOF (80% ABV)

BARRELLED FOR AGEING AT NO MORE THAN 125
PROOF (62.5% ABV)

BOTTLED AT MINIMUM 80 PROOF (40%ABV)

BOTTLED WITHOUT THE ADDITION OF COLOURING
NOR FLAVOURING

OAK
AROUND THE WORLD

CAMPARI ACADEMY

OAK THROUGHOUT THE AGES

The Quercus family of trees, better known as Oak, has been present for approximately 65 million on the Earth.

The first documenting of Oak starting to build a level of religious experience was in the 3rd Century BCE where Caesar (you know from the salad) reported about the Druids using the Oak Forests in the modern United Kingdom for religious ceremonies.

The bark of Oak trees contain a compound called TANNIN.
Outside of wine, we see Tannins being used to dye and tan leather.

Oak's primary use of oak throughout history has stemmed from it's incredible strength and flexibility and has seen it utilised across a myriad of applications; ranging from construction to boat building.

FOUR ARE THE MAIN OAK VARIETALS USED AROUND THE WORLD TO AGE SPIRITS AND GIVE THEM THEIR VERY UNIQUE FLAVOUR:

ALBA ROBUR PETRAEA MONGOLICA

MEET:
QUERCUS ROBUR

A.K.A.

Common Oak, European Oak

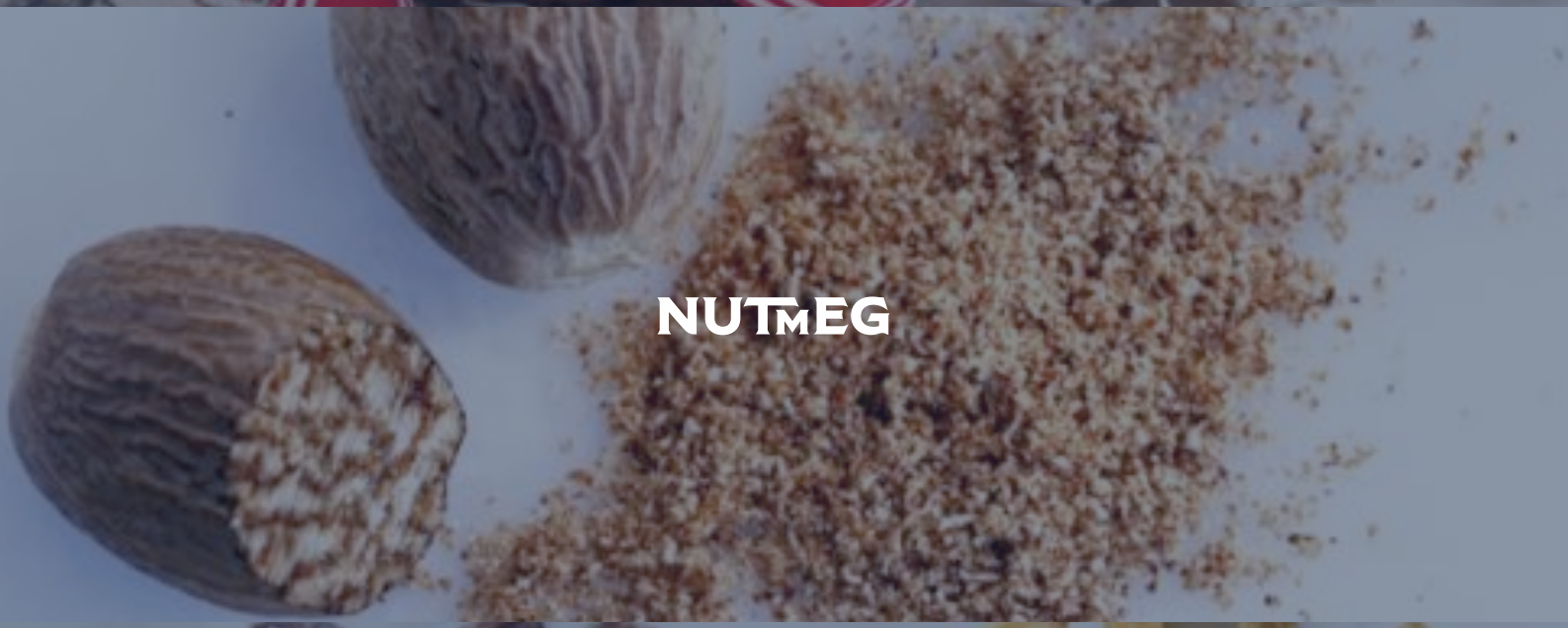
English Oak, Pedunculate Oak

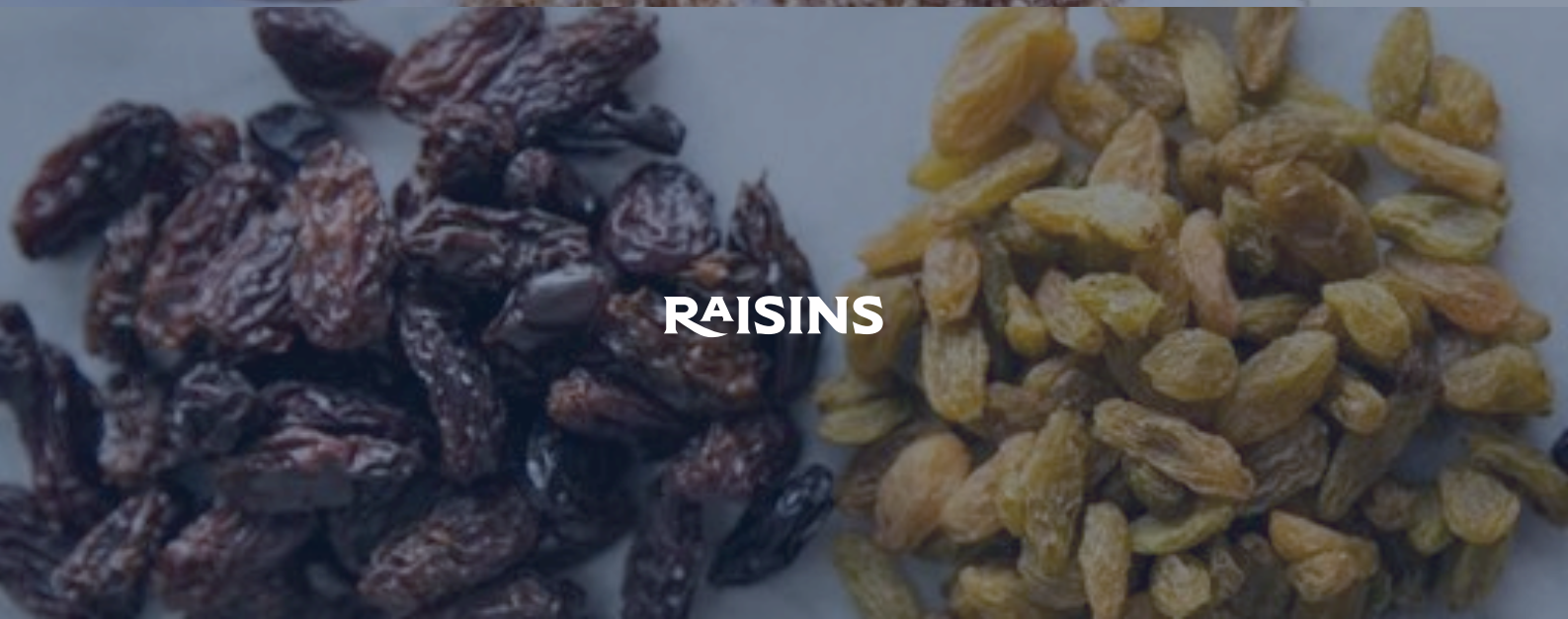
Age at harvest for making barrels 60 - 200 years approx.

Tannin in bark has been used

to tan leather since Roman times.

KEY FLAVOURS: QUERCUS ROBUR





MEET:
QUERCUS PETRAEA

A.K.A.
Sessile Oak
Cornish Oak
Hungarian Oak

Age at harvest for making barrels
80 - 200 years approx.

Official tree of the
Republic of Ireland

KEY FLAVOURS: QUERCUS PETRAEA

MEET:
QUERCUS MONGOLICA

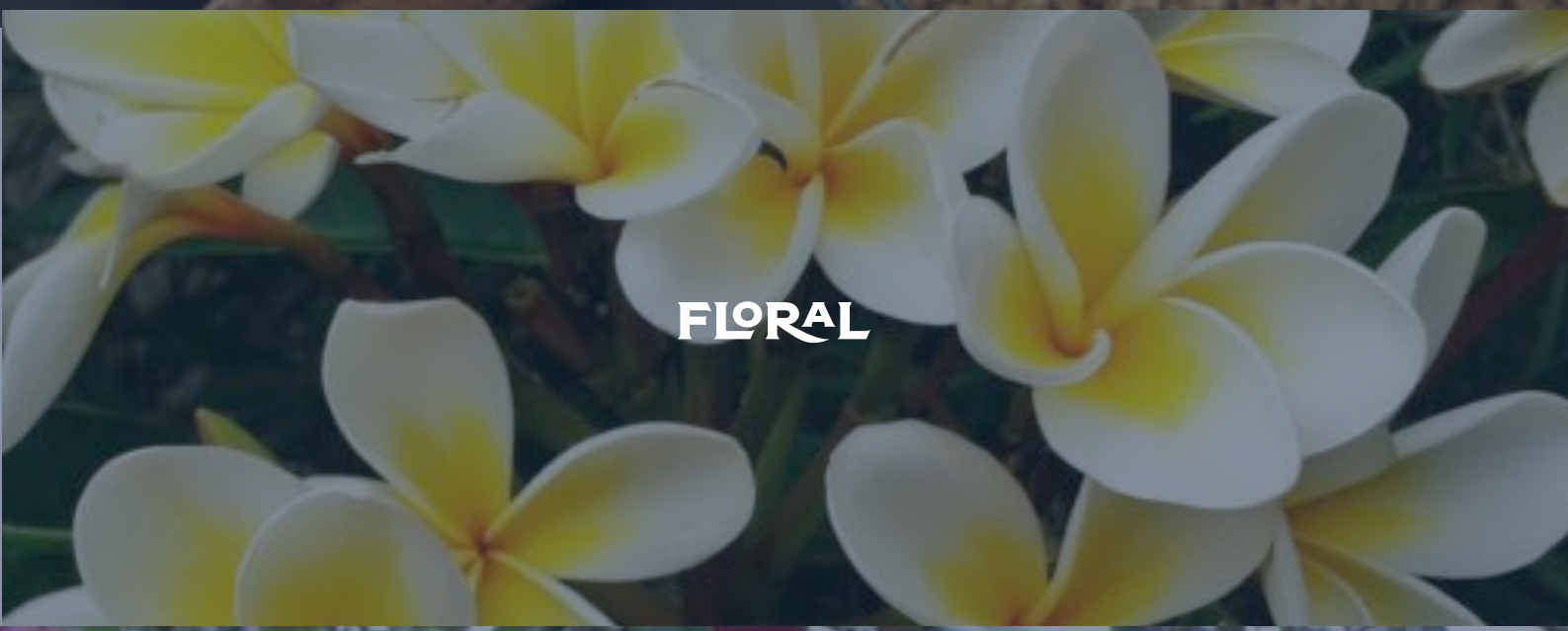
A.K.A.
Japanese Oak
Mizunara Oak, Water Oak

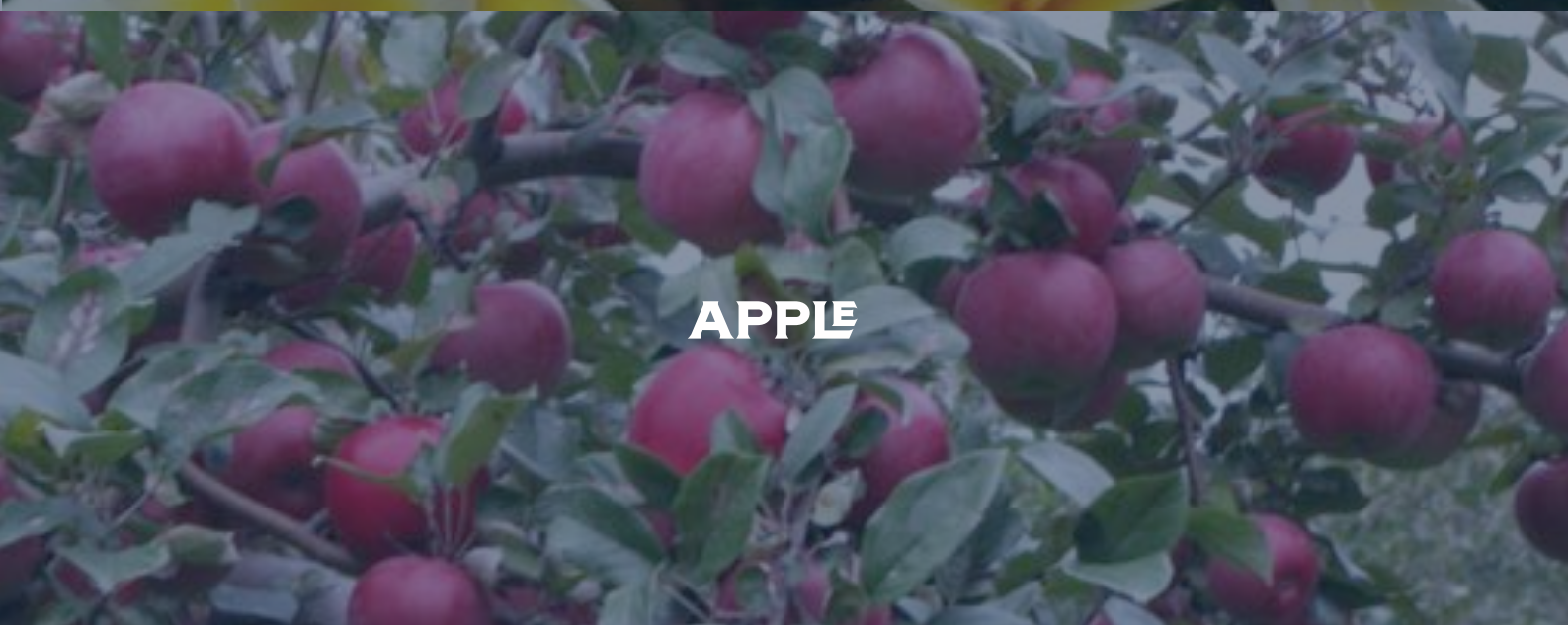
Native to Japan (Hokkaido)

Age at harvest for making barrels 200 years approx.

Used primarily for carpentry work until WW2 where it was used to make barrels for ageing whisky

KEY FLAVOURS: QUERCUS MONGOLICA





THE STAR OF OUR SHOW: QUERCUS ALBA

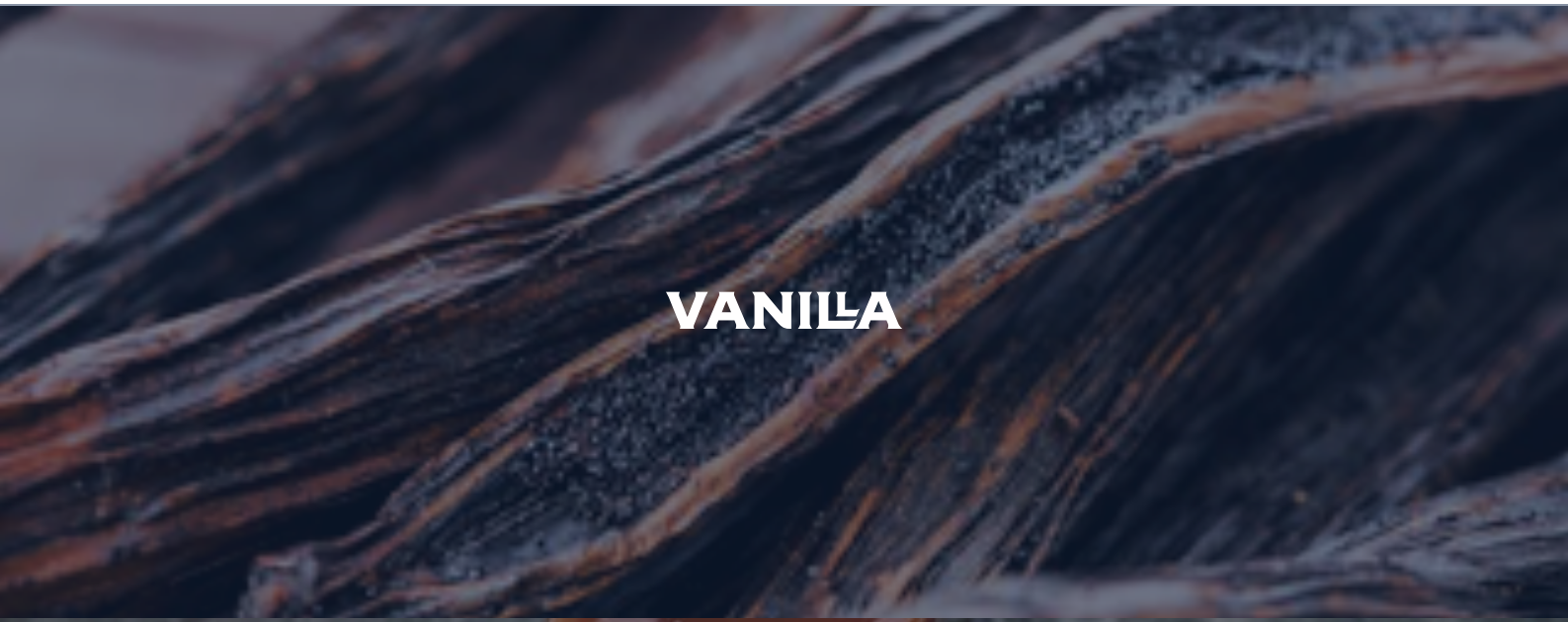
A.K.A.
American Oak

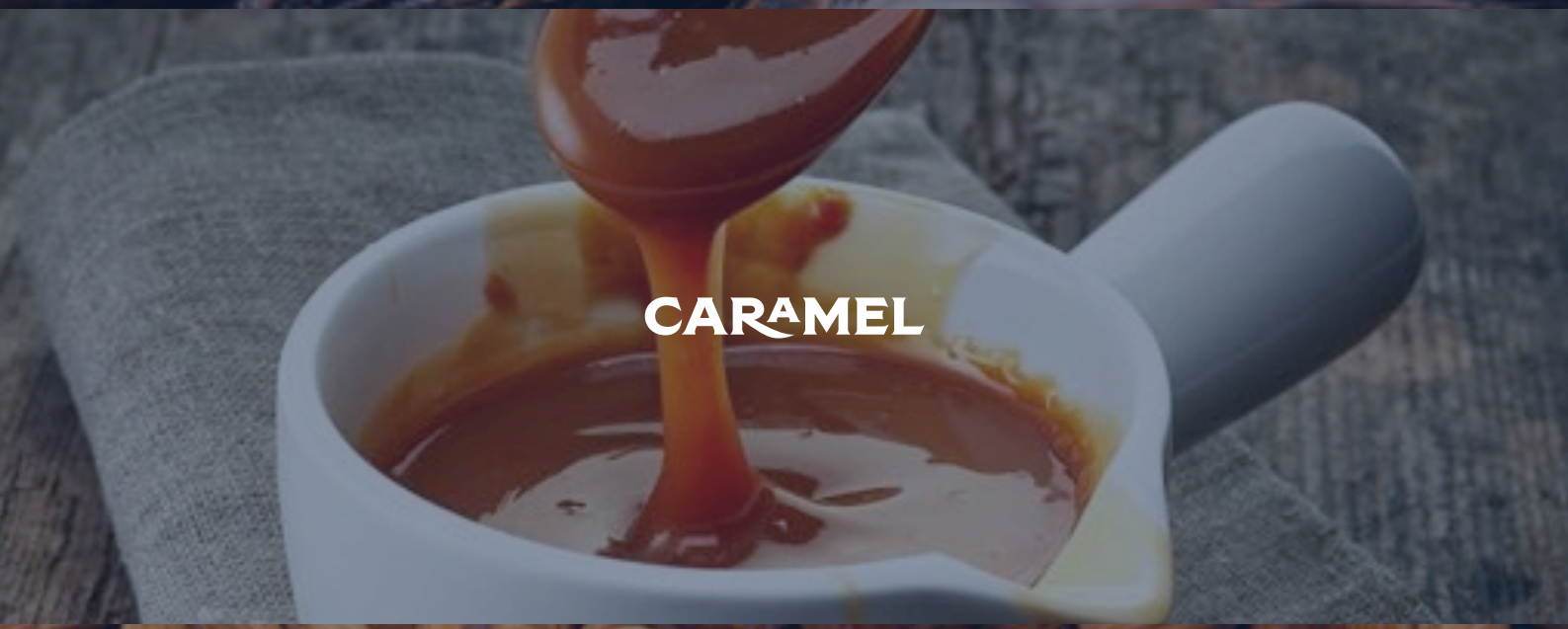
Age at harvest for making barrels
80 - 200 years approx.

Native to Missouri

Has incredible water retention characteristics

KEY FLAVOURS: QUERCUS ALBA





BRINGING TEXAS ONBOARD

CAMPARI ACADEMY

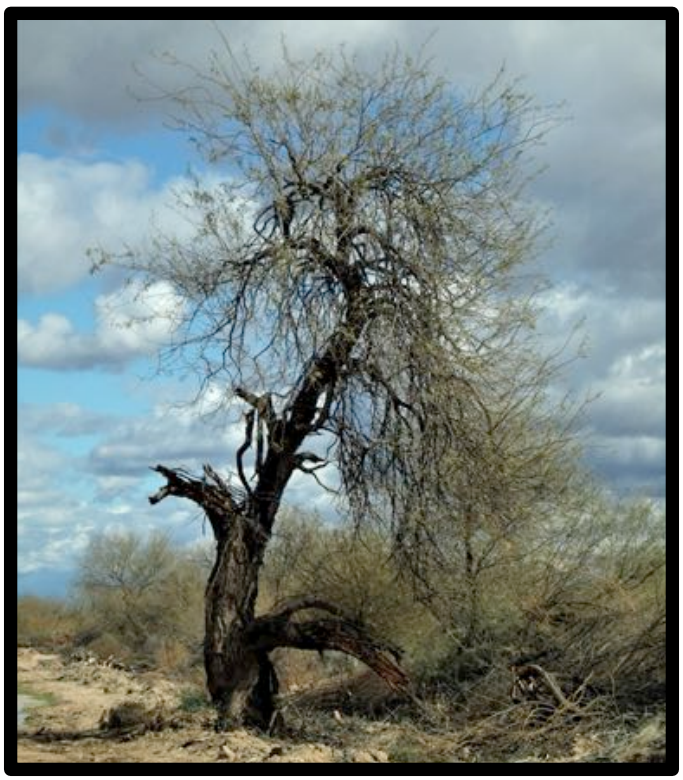
MEET:
PROSOPIS

A.K.A.
Mesquite, Honey Mesquite

Native to Southern Texas & North-Eastern Mexico

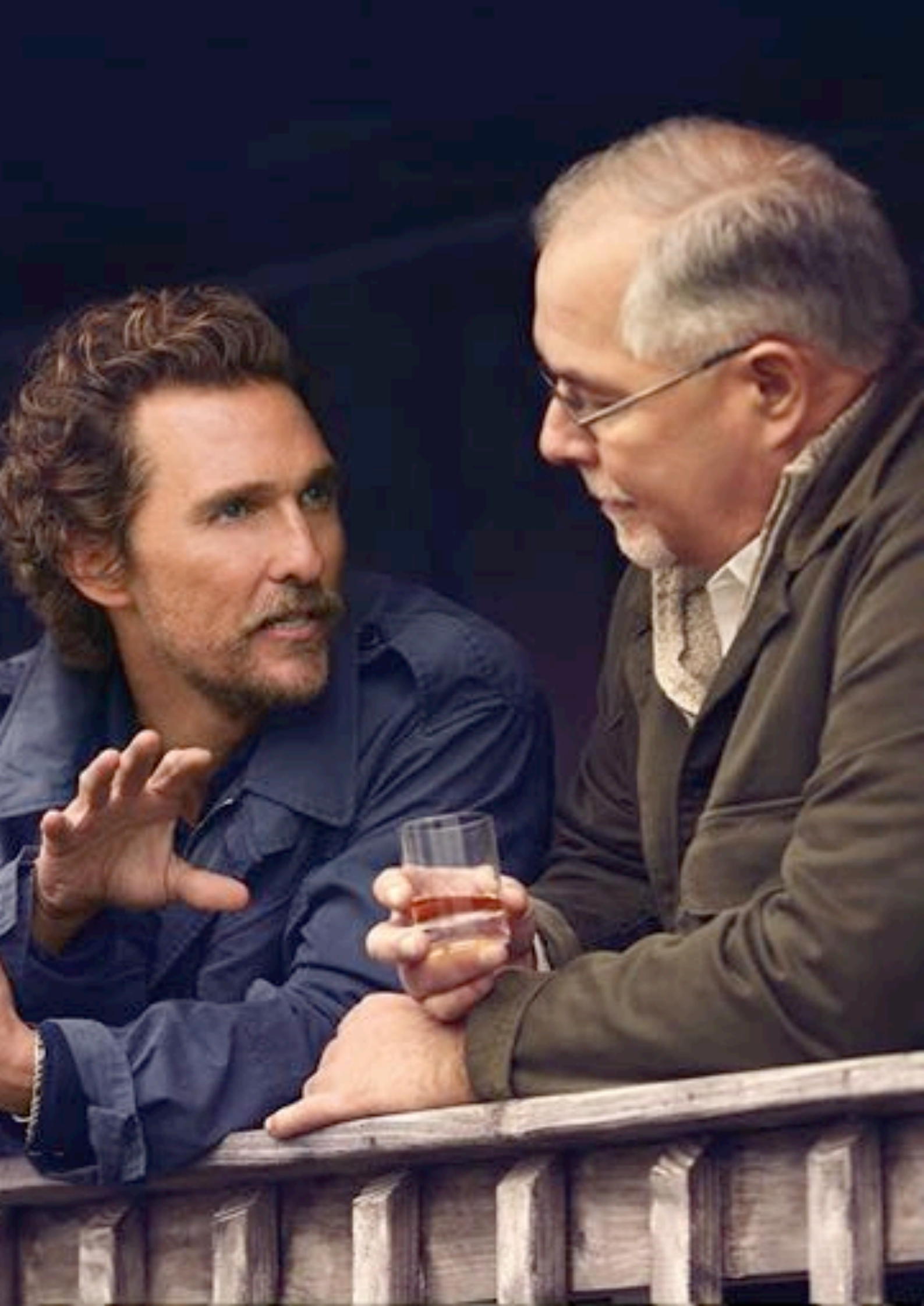
THE flavour of Texan BBQ (Brisket Anyone?)

The bean of the tree is edible and
can be processed to make bread



WILD TURKEY LONGBRANCH

CAMPARI ACADEMY



The story of Longbranch lives with the ideas of our creative director, Matthew McCaugheney being harnessed and brought to life by Wild Turkey's Master Distiller Eddie Russell.

This Bourbon caters to Matthew's palate with some help from oak and Mesquite charcoals, but is turkey through and through.

8 year old Kentucky Straight Bourbon Whiskey Small Batch. Refinement process using American Oak & Mesquite Charcoals. Wonderfully smooth and spicy just like every Wild Turkey.

THE LIFE OF A BARREL

CAMPARI ACADEMY

HARVESTING

Oak is harvested all over the United States; with many different varieties being harvested and transformed into usable materials for a myriad of applications.

When talking about Quercus Alba, the ash-grey barked variety synonymous with the production of America's National Spirit, the major forestry's are located within Missouri and the surrounding stretches of the Ozark Mountains.

These mountain ranges have the perfect microclimate to produce the best quality oak which will produce the best flavours in your bourbon.

HARVESTING

Oak is harvested all over the United States; with many different varieties being harvested and transformed into usable materials for a myriad of applications.

When talking about Quercus Alba, the ash-grey barked variety synonymous with the production of America's National Spirit, the major forestry's are located within Missouri and the surrounding stretches of the Ozark Mountains.

These mountain ranges have the perfect microclimate to produce the best quality oak which will produce the best flavours in your bourbon.

PROCESSING

Before the oak itself makes its way to the cooperage, there are several steps that are used to take this beautiful raw material and have it prepared to be shaped, charred and finished before making its way to your favourite distillery.

IN THE FOREST

Once the trees are at the correct age to be harvested, the tree is felled safely, branches removed and any imperfections are identified before being loaded onto the haulage truck to be transported to the next phase.

THE LOG YARD

This stage sees further assessment of the wood to asses quality and begins the multiple stages of customising the finished product for their customers.

THE STAVE MILL

This stage sees the larger oak being broken down from full logs into quarter bolts and rough staves. This processing will make it possible to cure and age the oak.

LOG CUT UP → **QUARTER SAWN** → **EDGING**

STAVE MILL STORAGE

Besides the time it takes grow the tress themselves, the time spent curing and storing the rough staves is the next longest part of the entire process.

Having the staves exposed to the elements of months or years changes the structure and flavour of the oak.

Over time, the exposure to these elements stiffen the oak, and with the evaporation that occurs throughout this time, as the water evaporates out of the wood it takes with it some unfavourable compounds, such as tannins, and allows for the vanilla flavours to be amplified.

AT THE COOPERAGE

Like Willy Wonka's factory, the Cooperage is a place where magic happens; cured rough staves come in and out come beautifully prepared barrels ready to age the best spirits in the world.

One such cooperage is the Independent Staves Company, started by T.W. Boswell in 1912, ISC is a name synonymous with the Bourbon industry. ISC is the lead supplier to some of Kentucky's stalwart producers such as:

Four Roses
Jim Beam
Wild Turkey
Heaven Hill
Buffalo Trace
Maker's Mark

Every aspect of the processes we have seen so far (along with those at the cooperage itself) are managed by ISC and its associated companies.

STAVE FINISHING

This step is critical to ensure that the staves themselves are shaped correctly to be able to raise the barrel. The rough staves are planed and jointed to create the curves needed to make the barrels able to be brought together to be watertight without the use of adhesives.

BARRELS AROUND THE WORLD

The barrel itself is first mentioned around the times of Babylon and Mesopotamia.

The modern vision of the barrel is most likely to have come to life in around 350 BCE and was popularised by the Celts.

Due to the shape, it became the best option for transporting liquid and solid goods; such as nails, fish, flour and oil.

Do you know what liquids commonly go in the below vessels?

DID YOU KNOW?

All of the above vessels are casks, but only one is called a barrel!

BARREL ASSEMBLY

Since the staves are ready now, we are able to take them and start assembling the barrel.

This first step takes the staves, lines them up with a temporary ring to hold it in place before it moves onto the steam tunnel.

STEAM TUNNEL

The staves are moved through the steam tunnel which hydrates and heats the wood in a manner that will make it malleable enough to shape the barrel without breaking the staves.

Once it has passed through, the heads of the staves are squeezed into place before going through a dry-fire machine called the windlass to set the shape.

AT THE COOPERAGE

TOASTING

A very much under-appreciated part of the process, a long, low-temperature toasting of the barrels to creates an initial foundation of flavour.

The “low-and-slow” method is primarily used to prime the barrel and start to assist in making some of the wood sugars develop before they will be heaving charred in later processes.

It is interesting to note that the use of toasted barrels for finishing and other experimental projects is beginning to become more visible from both craft and traditional distillers.

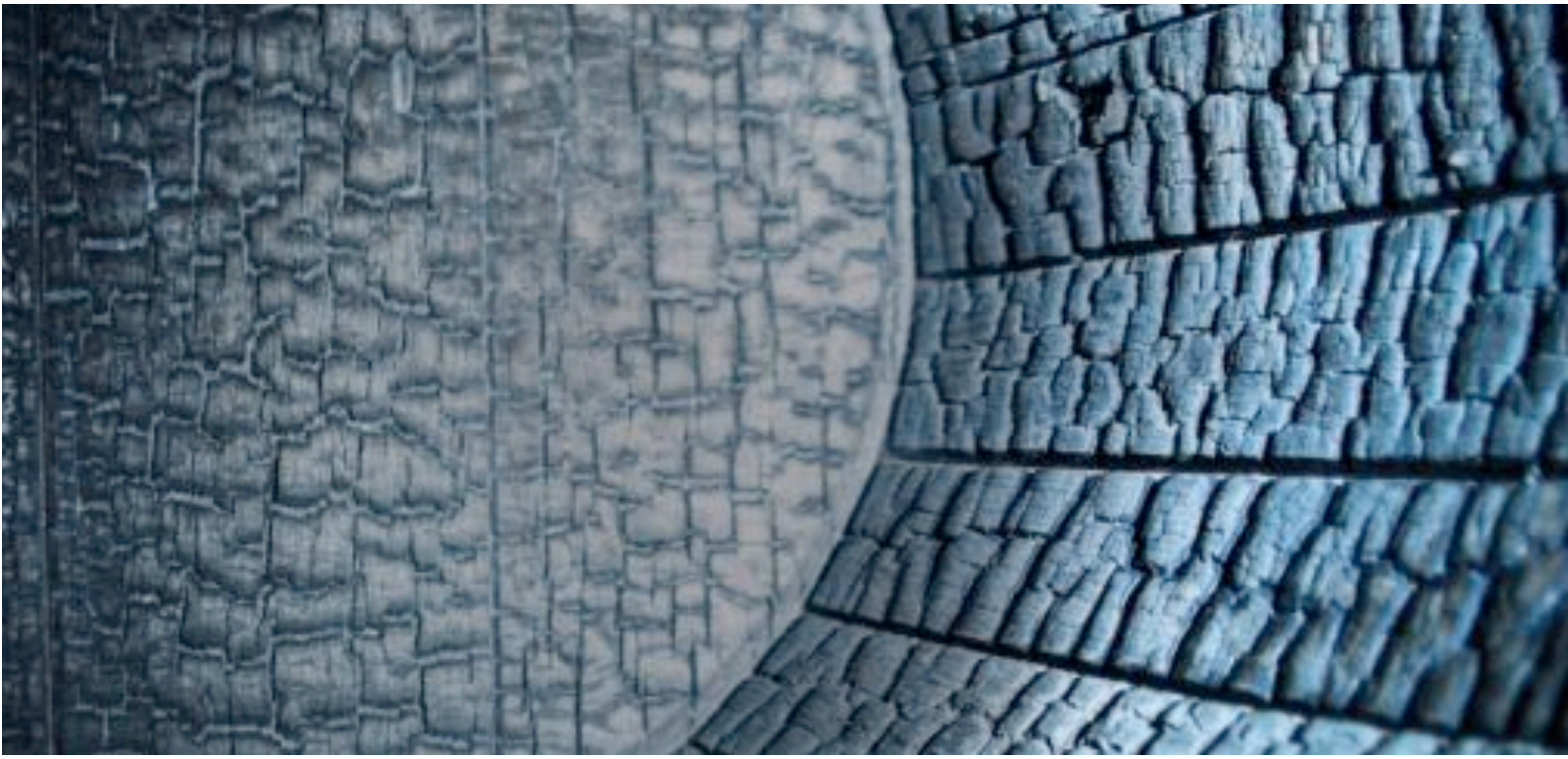
ALL ABOUT THAT CHAR

The practice of charring barrels for the ageing of spirits has been a very unique building block to creating the flavours we know with Bourbon.

The charring process, which can take anywhere from 15 seconds for Grade 1 to 55 seconds for Grade 4, sees the interior of the barrels being fired with a flame running around 900 degrees Celsius.

This process makes it easier for the liquid to make its way into the wood and pull those good flavours we know in whiskies.

ALLIGATOR CHAR



Grade 4 char, colloquially called " 'gator", is the result of charring the barrel at 900-1000 degrees centigrade for a period of 55 seconds.

Grade 4 char gets its nickname of alligator char from the way in which the surface mimics the look and feel of the alligator's skin. This level of char has very desirable effects on the spirit and every barrel that comes from the Wild Turkey distillery in Lawrenceburg, KY is done at Char 4.

In most cases, this is as far as distillery would want a cooper to char the barrels, but there have been experiments done by some newer craft distilleries seeing char going as far as Grade 7 which exposes the barrels to straight flame for three and a half minutes.

WILD TURKEY 101

CAMPARI ACADEMY

A true legend amongst bourbon, wild Turkey 101 is the original and true Bourbon expression from the Wild Turkey Distillery.

This Bourbon marries together every single core belief that was handed down to Matser Distiller Jimmy C. Russell, resulting in a bold and powerful bourbon.

Bottled at 101 Proof (50.5% ABV)

Made from 100% Non-GMO Grains

Distilled at Low Proof

Aged between 7-8 years

WHY DO WE AGE BOURBON?

CAMPARI ACADEMY

The Tale of Father Elijah Craig

As the tale goes, a Pastor based in Georgetown, KY was looking for ways of reusing and recycling barrels to transport his corn whiskey down river from Lexington, KY to New Orleans, LO.

The barrels had housed some very unsavoury items like oils and fish. Father Craig would treat them with fire to help remove the smell and disinfect the wood.

This treatment changed the interior of the barrel and as it was discovered at the end of its month long journey, the resulting whiskey had seen quite a dramatic change which elevated and relieved some of the rawness of the spirit, turning it into what would have been referred to as "red whiskey" from Bourbon County.

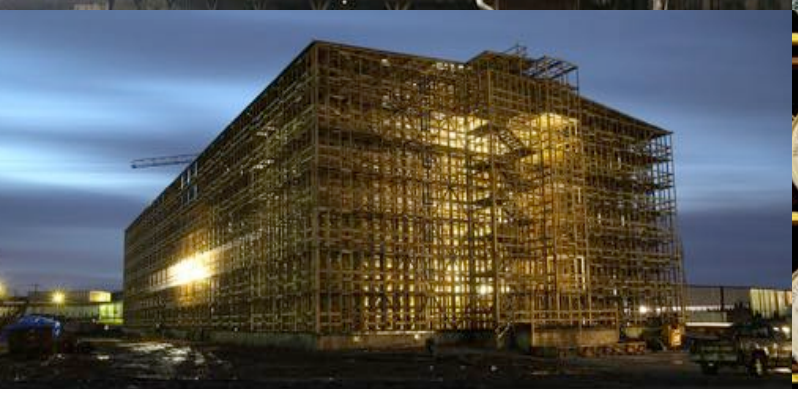
Having identified this as an opportunity, ageing his whiskey in charred oak barrels became general practice, and as they say, the rest is history.

WHERE DO WE AGE BOURBON?

CAMPARI ACADEMY

Whether it goes by the name rickhouse, rackhouse or warehouse, the word is describing the storage facilities for barrels of bourbon.

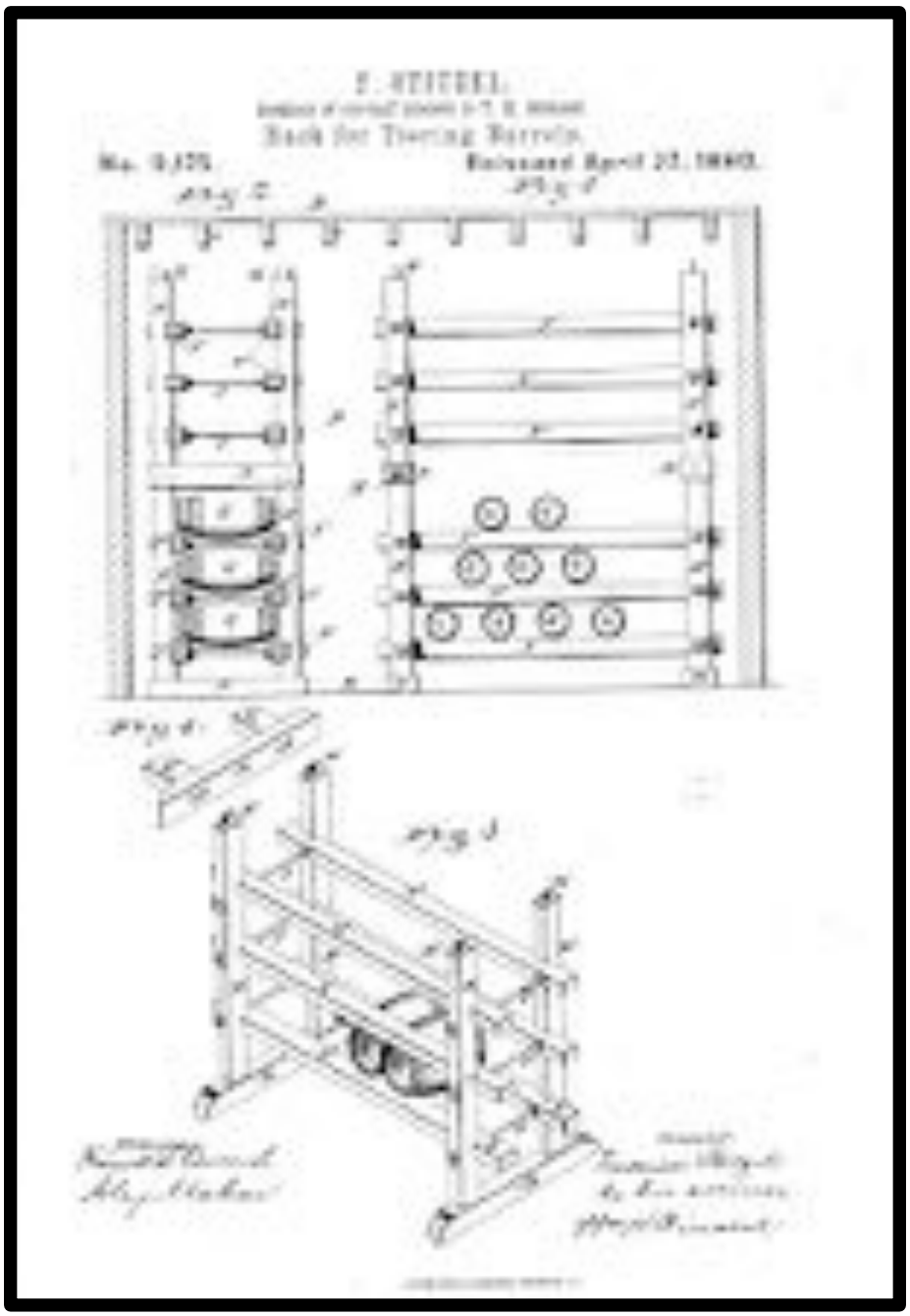





Traditionally, these structures would all be constructed from an oak interior (or skeleton) and sheeted with iron. These colloquially have been referred to as Ironside Rickhouse. Today, brick, cement and even more modern palletised warehouses have been used.

WHO THE HELL IS RICK?

The system of Ricks used in bourbon warehouses was an innovation dating back to 1879, where Fredrick Stitzel registered a patent which allowed for the barrels to be stored on their side, reducing stress on the barrel staves and allowing for a great volume of barrels to be stored in the ware/rick/rackhouses.



MATERIALS MATTER

Each of these different construction types will have a different effect on the whiskies being aged.

BRICK WAREHOUSES

Age slower and show a more consistent ageing between floors.

IRONSIDE WAREHOUSES

Feel the full effect of the seasons; temperature, humidity and airflow changes dramatically over the floors.

MODERN PALLETISED WAREHOUSES

Can influence ageing with heating, cooling and humidity controls in ageing.

SINGLE STORY WAREHOUSES

Create a consistent ageing with some influence from nature to update the approach of Scotland's Dunnage houses.

RUSSELL'S RESERVE 10YO

CAMPARI ACADEMY

THE SWEET SPOT

Just like the fable of Goldilocks and the Three Bears, the warehouses have some dramatic changes in temperature and some places are too hot (the top floors), some are too cold (the lower floors) and some are just right (the middle floors.

We call this The Sweet Spot.

Every single bottle that comes from the Russell's Reserve label is sourced exclusively from the sweet spots of our seven story wood and metal warehouses.

These floors of the warehouses (being three, four and five) offer the most consistent ageing and we select very few barrels (less than 200) that are mingled per batch.

Minimum 10 year old Bourbon (up to 13 years depending on batch). Same mash bill as all Bourbons from Wild Turkey. Flavours expertly paired to Eddie's specifications, displaying white pepper, spice, caramel and light coconut notes throughout.

WHAT HAPPENS DURING AGEING?

CAMPARI ACADEMY

CHANGE IS INEVITABLE

Throughout the many years that Bourbon spends in its new home, many changes occur to the colour, flavour, smell and texture compared to when it entered the barrel.

EXTRACTION

Flavours, textures, colours and sweetness is extracted from the barrel as the liquid is moving in and out of the layers of the oak. We see around 70-80% of the flavour in Bourbon coming from the Oak.

EVAPORATION

The cell wall of American Oak is very unique, where it will allow for the evaporation of water molecules (and volatile compounds bonded to it) but not the ethanol. This means that some barrels (usually those on the top 2-3 floors) will go up in proof as the water leaves the barrel.

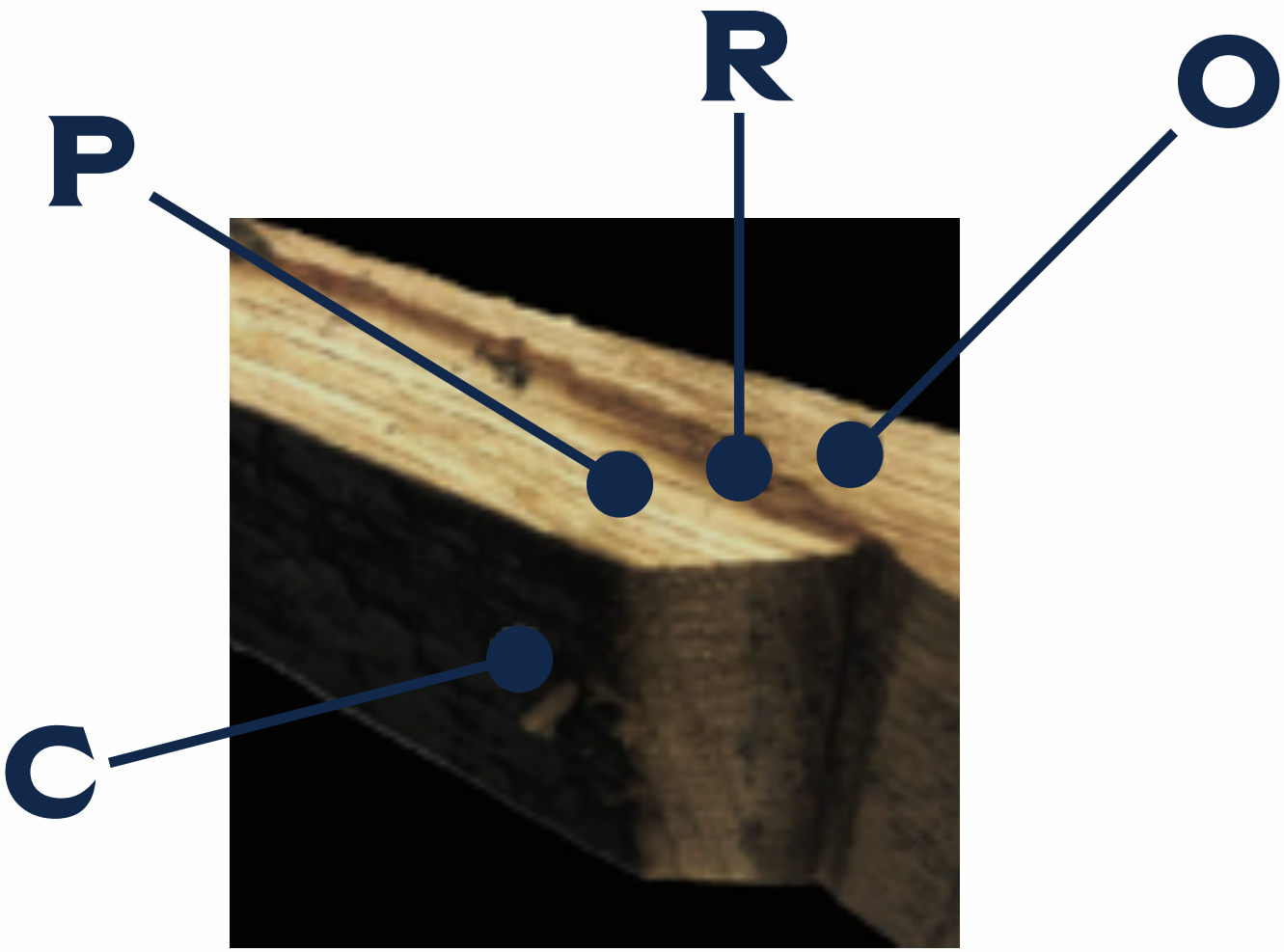
AERATION

The movement of air across the barrels assists with changing some characteristics, specifically with oxidising some compounds related to butter flavours.

LIQUID MOVEMENT

The example below is from a 10 year old barrel (care of Buffalo Trace) and this shows the journey the liquid has had from the charred interior (C) to the red line (R).

The area that has been penetrated (P) shows the layers of oak that have had the bourbon move through, soaking up all the flavours of the oak along the way.



LIGNIN

One good way to think of Lignin when talking about Oak is that it's the glue holding the fibres together.

It is vitally important when creating the flavours in bourbon, where not only does it contribute its own chemical compounds, but also is the cell wall material responsible to holding into the sugars contained within the hemicellulose.

Main flavour profiles extracted from Lignin are:

VANILLA

CLOVES

CINNAMON

SMOKE

DID YOU KNOW

The crunch of a carrot is only possible with presence of Lignin.

HEMICELLULOSE

Hemicellulose are the Polysaccharides (compound sugars) that exist within the cell walls of plants.

Once the intense heat of the flame is done throughout the charring process (Pyrolysis if you want to be scientific) makes those develop and free those sugars of the hemicellulose to be accessed by the bourbon in the barrel.

We see the sweet, caramel and toasted/bread flavours coming from this characteristic of the oak.

Main flavour profiles extracted from Hemicellulose are:

CARAMEL

TOASTED

ROASTED

FLAVOUR OVER TIME

It's one thing to let the oak do most of the heavy lifting when it come's to generating flavours in your spirits, but it takes a true master to understand where these flavours will work best for their releases.

Below is a summary of flavours over a spectrum from 0-18 years as observed by Eddie Russell at the Wild Turkey Distillery.

DID YOU KNOW

The bourbons from Wild Turkey are generally selected from 6-12 year old stock and look where the flavours are at their best above . . .

THE HUMAN TOUCH

CAMPARI ACADEMY

MINGLING

Mingling is the art of marrying different barrels together to make (hopefully) tasty Bourbon and Rye Whiskies.

Since the Bottled in Bond act of 1897 came into effect, many distillers stopped using the 'dirty' word of blending which was synonymous with poor quality and unknown additions.

Even to this day, you call it blending in front of Eddie and he will give you very stern talking to.

MEET: JIMMY C RUSSELL

A.K.A Buddha, Mimmy (if you're his grandchildren)

He's been working at Wild Turkey since 1954

Longest serving Master Distiller in any discipline

Inducted into the Kentucky Bourbon Hall of Fame (2001)

IWSC Whiskey Judge

Known hater of Rye Whiskey

WILD TURKEY RARE BREED

CAMPARI ACADEMY

Launched by Jimmy in 1992, Rare Breed became the first constantly available Barrel-Proof release from the distillery.

Jimmy got the idea from his good friend, Booker Noe, who released Booker's in the late 1980's.

Combination of 6, 8 & 12 year old Bourbons.
Barrel-Proof — meaning that no water is added after the barrels have been dumped. Since this is a true Barrell-Proof Bourbon, it has changed in ABV% since its releases, following changes that we have done regarding barrel-entry proof. Think of this as the most Wild Turkey Bourbon you can get.

MEET: EDDIE RUSSELL

A.K.A boy

He's been working at Wild Turkey since 1981

Inducted to the Kentucky Bourbon Hall of Fame (2010)

Appointed as Co-Master Distiller in 2015

Creator of the Master's Keep Series

Has been fired several times by Jimmy

MASTER'S KEEP REVIVAL

CAMPARI ACADEMY

The fourth release of Eddie's Master's Keep series saw him return to a formula his father played around with in the early 2000's; marrying the flavours of sherry with Bourbon.

His way of tackling this idea was to use 20 year old ex-oloroso sherry casks to finish the bourbon; as such not to disturb the classification as a Bourbon.

BOURBONS AGED 12-15 YEARS

The finishing is a technique Eddie used to let the mingled bourbon rest in the ex-Oloroso casks for 6 weeks
The resulting flavour is our known Wild Turkey flavours paired with a little more of a dessert finish.

MASTER'S KEEP CORNERSTONE

CAMPARI ACADEMY

The fifth release of Eddie's Master's Keep series has seen him try something a little bit different; and that is releasing a beautiful, bold and incredible well aged Rye Whiskey.

Rye is not the favourite whiskey of Jimmy, but Eddie has been influenced heavily by his son Bruce along with bartenders around the world to appreciate Rye in a whole new way!

RYE WHISKEY IS 9 TO 11 YEARS OLD

This is the oldest Rye Whiskey ever released from the Wild Turkey Distillery

Bottled at 109 proof (54.5% ABV)

Non-Chill Filtered

COCKTAIL RECIPES

CAMPARI ACADEMY

BARREL AGED COCKTAILS

Even though we are now a decade since Jeffrey Morgenthaler popularised the use of small barrels to age and influence classic cocktails such as the Negroni, the Manhattan and the Old Fashioned, has spread to every corner of the world.

The idea behind this process is to allow the spirits to get to know each other better and take on influences from the oak itself; including the characteristics of what has been held in the barrels before it.

But when we are discussing who has taken these ideas to an entirely new level, it is hard to go past Singapore's bastions of the barrel , The Manhattan Bar.

We were lucky enough to get some pointers from Cedric Mendoza, a Manhattan Bar alumni who is bringing those practices he worked hard on while at the Manhattan Bar at Sydney's Grain Bar.

TIPS & TRICKS WITH CEDRIC

CHOOSE A BARREL

There are many different barrels that are available to the public; think first of the type of oak flavours you want in there, then look to the level of char.

Char #3 is a great place to go for cocktails, and if you can, get a brand new barrel to get the most out of it!

SEASONING THE BARREL

You will need to sanitise the barrel, using hot purified water, shaking the barrel and repeating the process three timses; upon the last rinse you will want to let it sit for about 12 hours to expand the wood

You can then fill ¼ volume with vodka, shake and empty to give it a proper clean

Using a liqueur/fortified wine is a great choice to set a base of flavour; fill ¼ and let it sit for 1-2 weeks then rotate and drain

TIME TO FILL IT WITH THE COCKTAIL YOU WANT!

CHOOSE A COCKTAIL

Cedric prefers using cocktails that have a good level of fortified wine, liqueur or Bitter/Amaro as part of the formula.

The combination of citric compounds and sugar elements assists with ageing the drink
NEVER use aromatic bitters in the barrel; the aromatic compounds in them are too volatile and they will be lost during the ageing.

AGEING

WHEN IT'S READY IT'S READY!
The best way to know is to tatste it as it's going along
Depending on the size of your barrel, there will be some variables for time; smaller barrels age faster while bigger barrels age slower.

RESTING IN GLASS

After decanting your cocktail into glass bottles, do the right thing and let it relax for a few days; this will let the liquid breathe together for a moment and settle down any possible bottle shock.

COFFEE-AGED BOULEVARDIER

By Cedric Mendoza | Makes a 4.5L Batch

INGREDIENTS

1500ml Russell's Reserve 10yo

1500ml Campari

1500ml 1757 Vermouth di Torino Rosso

METHOD

In a barrel that has been seasoned with a Coffee Amaro (as per Cedric's Tips) rest the batch for 3-6 weeks depending on the size of barrel and rest in glass bottles.

Combine 90ml of your mix into a mixing glass.

Stir down and served over a large, clear ice block

and garnish with an orange twist.

THE FIRE BIRD

By Jay Lambert, Campari Australia Brand Ambassador, 2017.

INGREDIENTS

45ml Wild Turkey 101

10ml Grand Marnier Cordon Rouge

10ml Maraschino

10ml 1757 Vermouth di Torino Rosso

2 Dashes Angostura Bitters

METHOD

Express the oils of an orange peel in a large old fashioned glass.

Light a piece of American whiskey stave on fire with a blowtorch.

Position the glass over smoke while stirring the drink.

Introduce large ice cube and strain drink into glass.

THE JEREZ SPRINGER

Tristram Fini, Campari Australia Brand Ambassador, 2020.

INGREDIENTS

45ml Wild Turkey 101

15ml Manzanilla Sherry

30ml Lemon Juice

15ml Barrel Aged Maple Syrup

2 Dashes Angostura Bitters

METHOD

Combine ingredients in shaker.

Shake hard and fine strain into a Nick and Nora glass.

Express lemon peel and discard.

NON-BARREL AGED BOULEVARDIER

By Hideyuki Saito, 2017.

INGREDIENTS

30ml Wild Turkey 101

20ml 1757 Vermouth di Torino Rosso

10ml PX Sherry

30ml Campari

METHOD

Combine ingredients in vacuum seal bag

(or zip-lock bag) along with a couple of rectangular

pieces of toasted American white oak

Sous-vide at 55c for 1 hour.

Let cool and filter.

Stir cocktail down over ice and strain onto a large cube

of clear block ice & garnish with an orange wedge.

THANK YOU

The Campari Academy Team

CAMPARI ACADEMY