

The Malt Whisky Cluster Vortex -- *Surfing The Flavour Spectrum*



Vertex 2010 Conference
June 8th, 2010

David Wishart
Research Fellow
School of Management

Whisky *the*
water of life
aqua vitae
uisge beatha



19th International Conference on Vertex Detectors
The Lodge at Loch Lomond, Luss, Scotland
Celebrating our 19th year
June 6-11, 2010



Origins of Scotch whisky

- **Irish giant jumped to Scotland with a cask of whisky on his back, from the Giant's Causeway**
- **Irish monks passed their know-how to Scotland and Holland by St. Columba and St. Patrick (whisky and gin)**



King James IV of Scotland



Bought beer at Tullibardine for his coronation on 26th June 1488.





**Medieval monks
made beer ... then
distilled it (*aqua vitae*)**





Whisky is distilled beer

**Tullibardine 1988
Highland Malt Whisky**





The Royal Boar Hunt

King James IV enjoyed hunting deer and boar in Fife Forest, from his summer retreat – Falkland Palace



First whisky record, 1495

**King James IV –
“Eight bolls of malt
to Friar John Cor of
Lindores Abbey, by
which to make *aqua
vitae*”**

(Alchemy)

***Exchequer Rolls of
Scotland, 1495***



Management School Research, 2007

School of
Management
M.Litt fieldwork
at Lindores
Abbey “A wee
dram of *aqua
vita*, with which
to toast Brother
John Cor”



27 October 2007

Research continued

.... at Tullibardine 1488 distillery





The illicit Highland Whisky Still, Sir Edwin Landseer, 1829

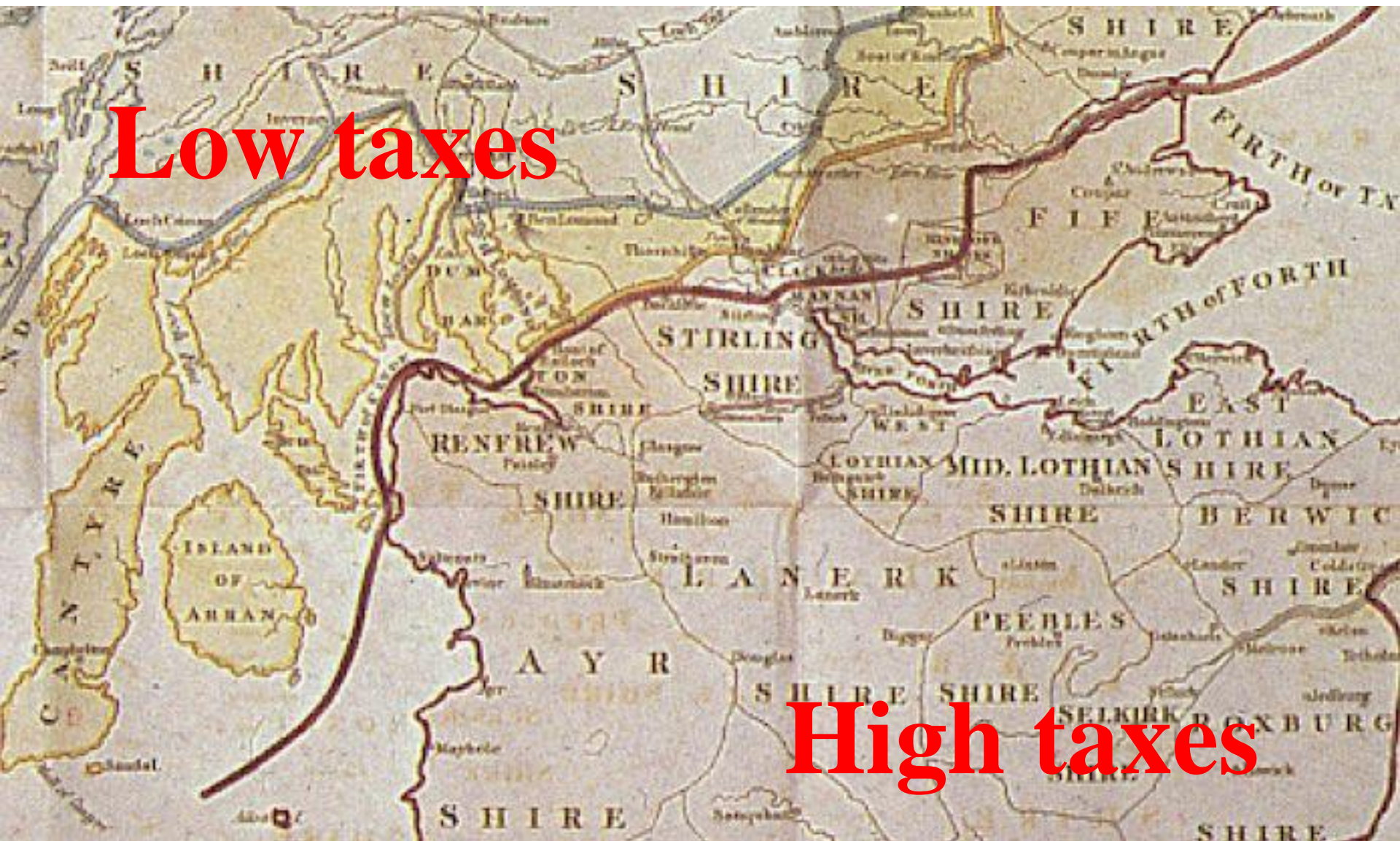
The Sma' Still of Glenlivet





Highland Line 1779

Low taxes



High taxes

Smuggler and pony



The Prince



Prince Regent, 1811

George IV 1820-30

**Visited Edinburgh in
August 1822, the first
monarch in Scotland
for 171 years**

The Storyteller ...

Sir Walter Scott
1771-1832

**The Father of
Historical Fiction**



and the Cellarer ...



**Elizabeth Grant of
Rothiemurchas
1797-1886**

**“The Memoirs of a
Highland Lady”
1797-1830**

George IV lands at Leith 1822



Lady Elizabeth Grant

***Memoirs of a Highland
Lady, 1797-1830 ...***

**“I sent them pure
Glenlivet whisky, long
in the wood, mild as
milk, and the true
contraband goût in it.”**



Lady Elizabeth Grant

Memoirs of a Highland Lady, 1797-1830 ...

**“I sent them pure
Glenlivet whisky,**

- long in the wood***
- mild as milk***
- true contraband goût”***

The first tasting note!



George IV, Sir Walter Scott and Lady Elizabeth Grant

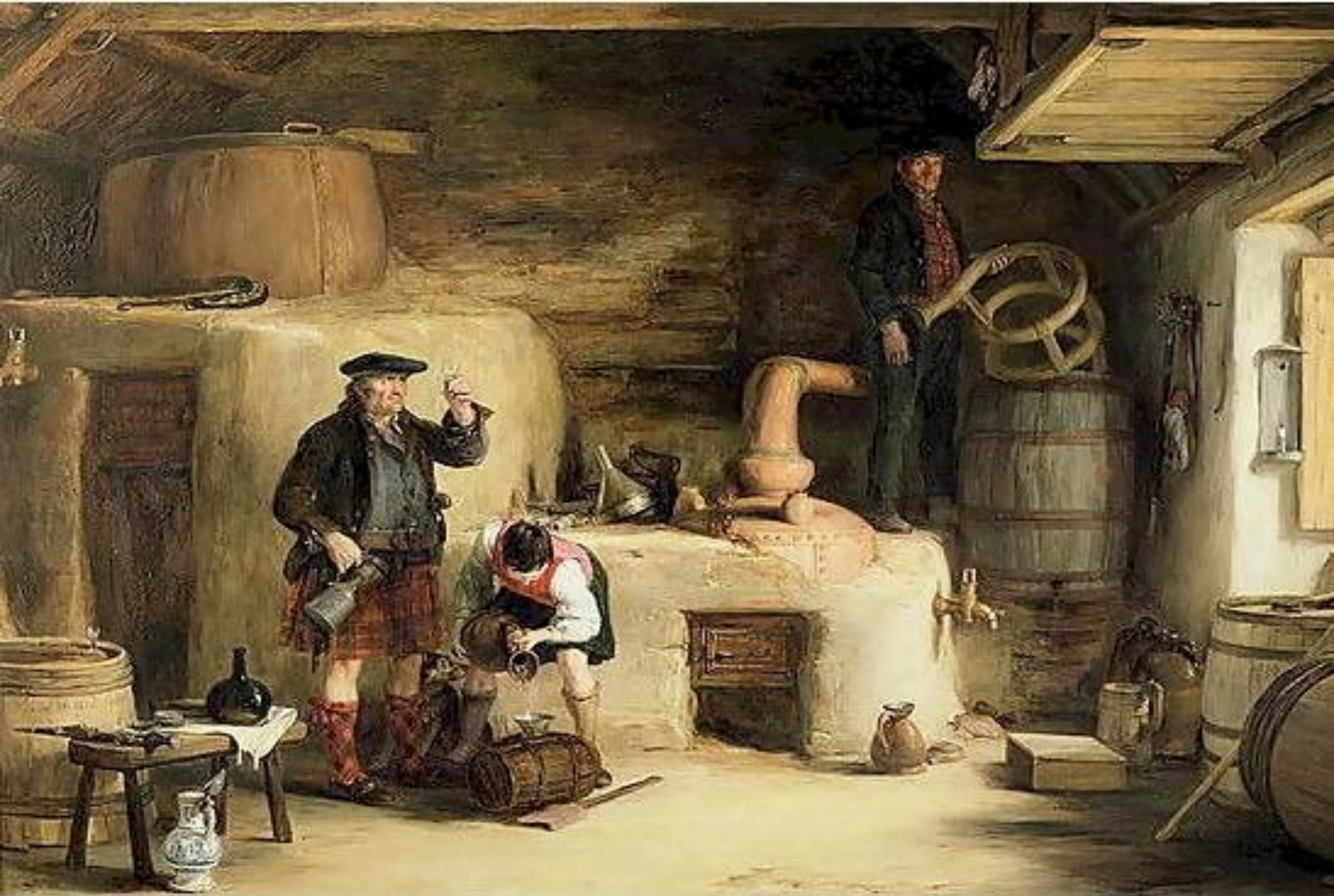


Whisky Wars

**Battles between
smugglers and
excisemen**

**“Tussle for the
keg”, by John
Petrie**





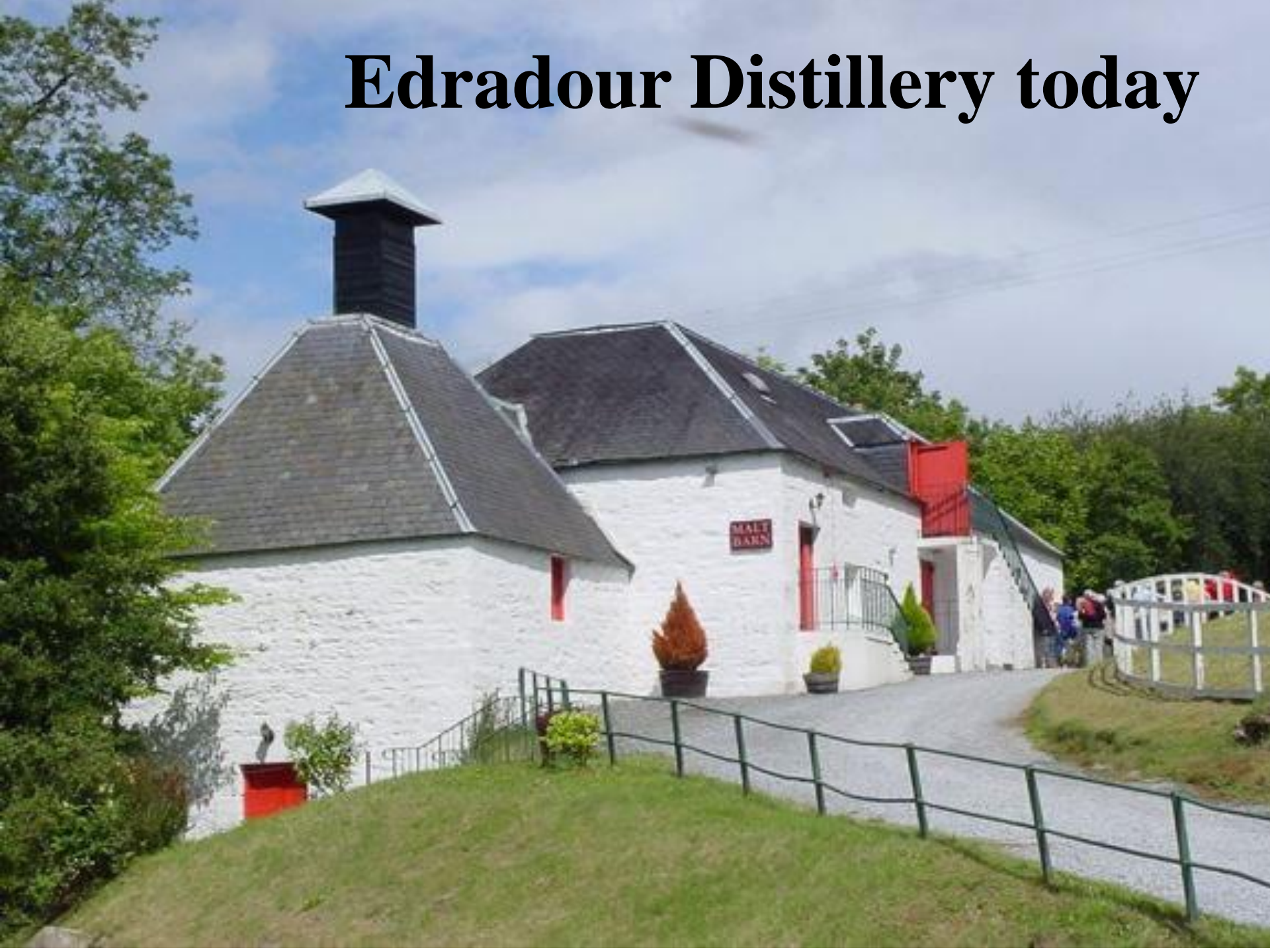
The Whiskey Still at Lochgilphead, Sir David Wilkie 1819

Whisky production at the farms



Edradour Distillery, Perthshire

Edradour Distillery today



Hieronymous Braunschweig

The alchemist's art of turning barley into liquid gold – *aqua vitae* as a medicine “purifying of the grosse from the subtyll, and the subtyll from the grosse”

Alchemy - transmutation

Das Buch zu Destillieren,
1519

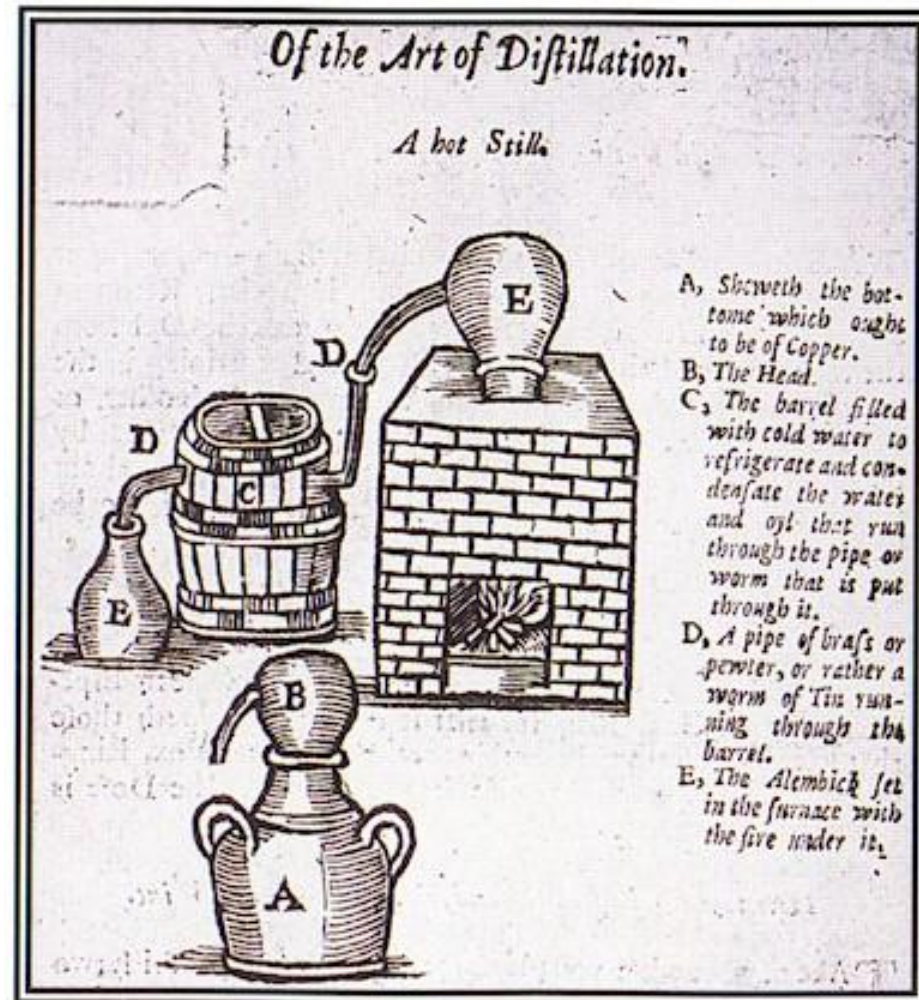
Vertuose Boke of
Distyllacyon, 1527



Primitive still – 1664

- Copper kettle
- Peat furnace
- Brass/tin worm
- Condenser
- Water barrel

John French, The Art of Distillation, 1664



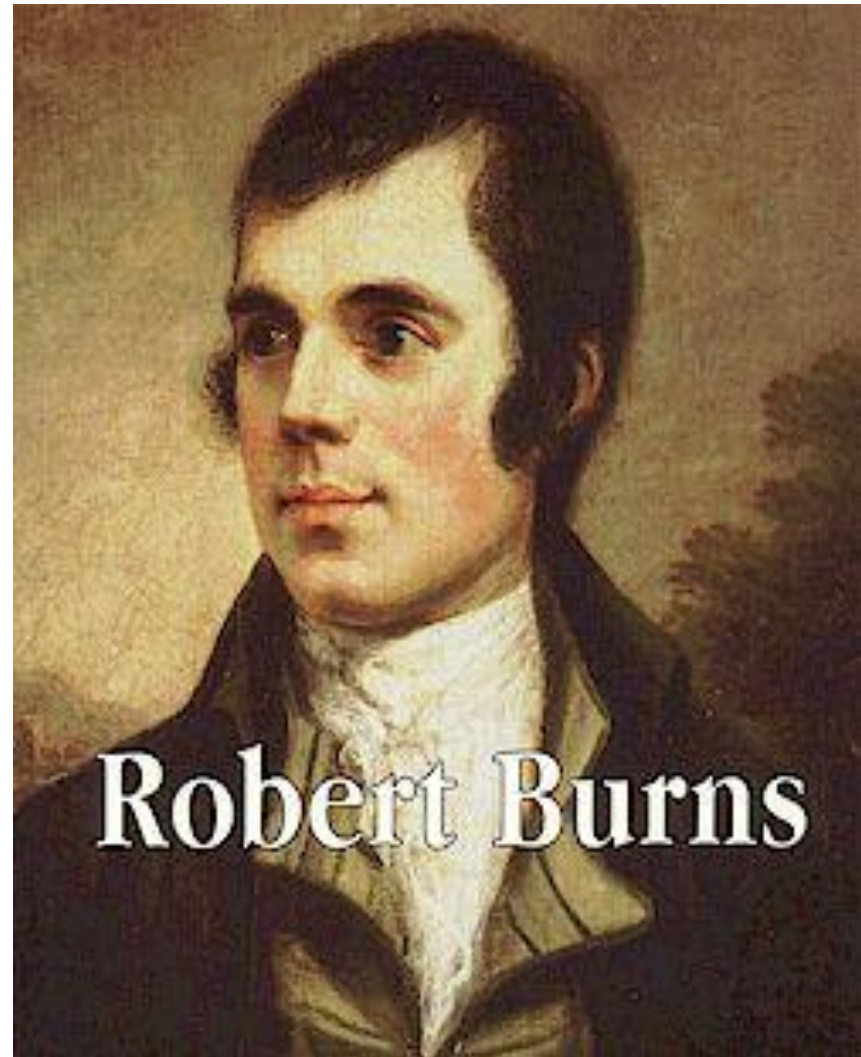
Robert Burns, 1759-1796

**Burns Night – 26th January
Scottish Homecoming 2009**

**John Barleycorn was a hero bold,
Of noble enterprise;
For if you do but taste his blood,
'Twill make your courage rise.**

.....

**Then let us toast John Barleycorn,
Each man a glass in hand;
And may his great posterity
Ne'er fail in Old Scotland!**



Medicinal properties

“If a body could find out the exac’ proper proportion and quantity that ought to be drunk every day, and keep to that, I verily trow that he might leeve for ever, without dying at a’, and that doctors and kirkyards would go oot o’ fashion” - *James Hogg, Ettrick Shepherd (circa 1825)*

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Sadly, he died in 1835 aged 65.



DISTILLERY GIFT SHOP



HIGHLAND PARK
SINGLE MALT SCOTCH WHISKY
ORKNEY + ISLANDS

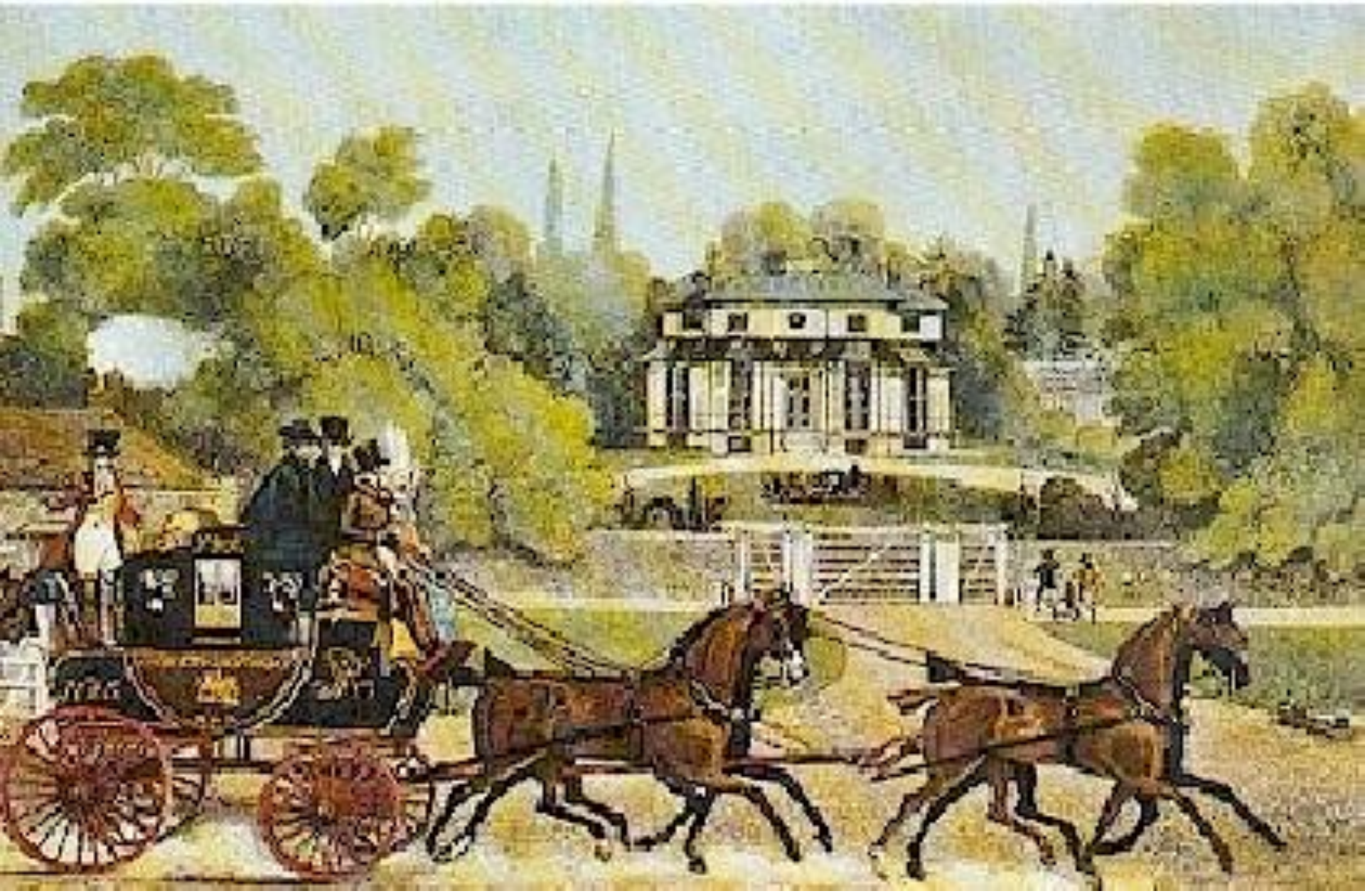
**“The best spirit in
the world” ...
F. Paul Pacult:
Spirit Journal
2006-2009.**



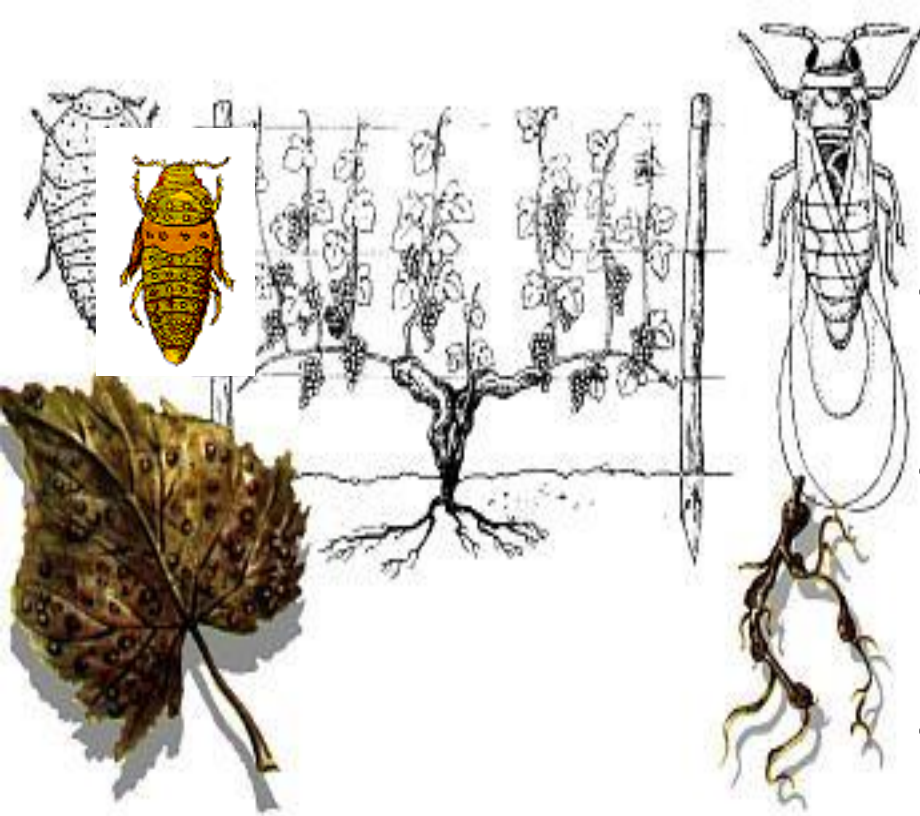
Queen Victoria loved whisky



The coachman's dram



French phylloxera plague



- **The phylloxera aphid devastated the French vineyards from 1863...**
- **Imported into France on root stocks from America**
- **Solved by grafting French vines on to American root stocks**
- **But ... cognac drinkers had already turned to Scotch whisky**

Robert Louis Stevenson

“The king o’ drinks, as I conceive it, Talisker, Isla, or Glenlivet!”

*The Scotsman’s Return
from Abroad, Underwoods,
1887*



Whisky as a comfort

The wounded soldier returns from war to the comforts of home



Prohibition USA, 1920-33



Capt. William McCoy
The "Real McCoy"

Whisky as a medicine



- **Whisky was good for the health, according to the British medical lobby.**
- **During US prohibition, whisky could be prescribed by doctors “for medicinal use” (Laphroaig)**

Prince of Wales loves whisky



Cue: Let's try the whisky!



Problem – how to choose

Flavour profiling and classification

Nose Heather-honey sweetness and peaty smokiness.

Taste Medium-bodied, sweet and smoky with layers of mint toffee, heather, malt and honey, and a pinch of cumin seeds.

0		Not present
1	●	Low Hints
2	● ●	Medium Notes
3	● ● ●	Definite Notes
4	● ● ● ●	Pronounced

Feature	Profile
● ●	Body
● ●	Sweetness
● ● ●	Smoky
●	Medicinal
	Tobacco
● ●	Honey
●	Spicy
●	Winey
●	Nutty
● ●	Malty
●	Fruity
●	Floral



Cluster I - Similar to Bowmore, Springbank, Bruichladdich

Whisky flavour spectrum



The Dalmore 12yo

Body	***	Spice	**
Sweetness	**	Winey	**
Smoky	**	Nutty	*
Medicinal	*	Malty	**
Tobacco		Fruity	***
Honey	*	Floral	*



Award-winning Christmas cake “cigar” malt

Edradour 10yo

Body	* *	Spice	*
Sweetness	* * *	Winey	*
Smoky	*	Nutty	* * * *
Medicinal		Malty	* *
Tobacco		Fruity	* *
Honey	* *	Floral	* *



Nutty malt from Scotland's smallest distillery

The Glenlivet 12yo

Body	**	Spicy	**
Sweetness	***	Winey	**
Smoky	*	Nutty	*
Medicinal		Malty	**
Tobacco		Fruity	**
Honey	**	Floral	***



The king o' drinks as I conceive it - RLS

Tullibardine 1993

Body	**	Spicy	**
Sweetness	***	Winey	*
Smoky		Nutty	*
Medicinal		Malty	**
Tobacco	*	Fruity	**
Honey		Floral	*



Same source as Highland Spring

Highland Park 12yo

Body	**	Spicy	*
Sweetness	**	Winey	*
Smoky	***	Nutty	*
Medicinal	*	Malty	**
Tobacco		Fruity	*
Honey	**	Floral	*



Orcadian dream award-winning malt

Laphroaig 10yo

Body	****	Spice	
Sweetness	**	Winey	*
Smoky	****	Nutty	*
Medicinal	****	Malty	*
Tobacco	*	Fruity	
Honey		Floral	



Peaty medicinal full-bodied malt, Islay

Clusters

Illustrates the range of flavours of malt whiskies at 10, 6 and 4 clusters

Use to select the number of malts for your collection, or for a tasting

10 CLUSTERS

Cluster Sample whiskies

- A Mortlach
- B Strathisla
- C Glenlivet
- D Auchentoshan
- E Glenkinchie
- F Tomatin
- G Arran
- H Oban
- I Bowmore
- J Lagavulin

6 CLUSTERS

Cluster Sample whiskies

- A Dalmore
- B Glenfarclas
- C Dalwhinnie
- D Glen Grant
- E Glen Moray
- F Deanston
- G Speyburn
- H Old Pulteney
- I Springbank
- J Ardbeg

4 CLUSTERS

Cluster Sample whiskies

- A Macallan
- B Aberlour
- C Balvenie
- D Glengoyne
- E Bunnahabhain
- F Glenrothes
- G Glenfiddich
- H Glenmorangie
- I Highland Park
- J Laphroaig

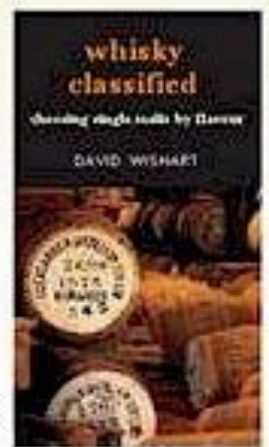
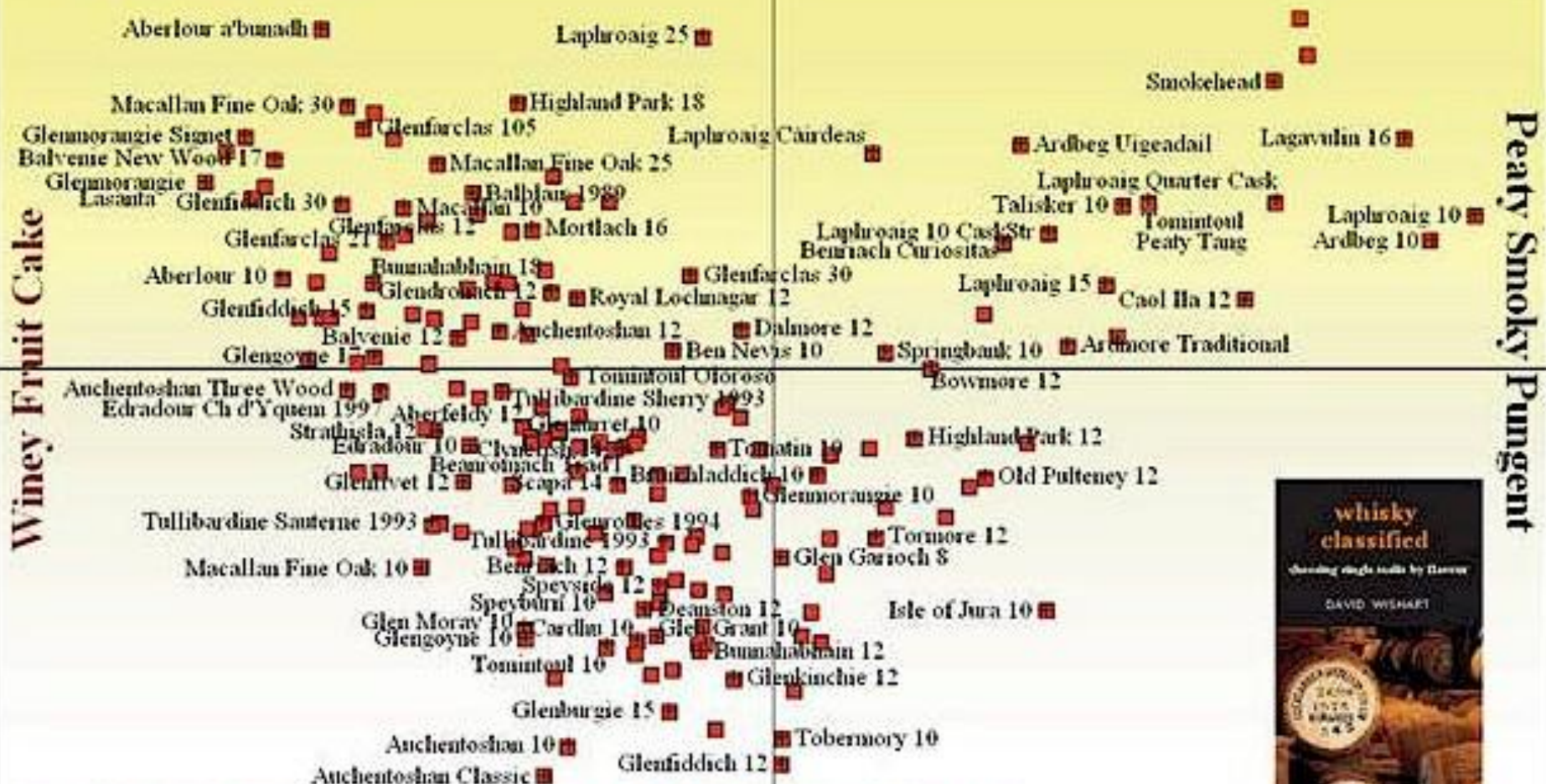
Principal Components Analysis

Whisky Classified Flavour Chart

Rich Full Bodied

Winey Fruit Cake

Peaty Smoky Pungent



In summary

- **Whisky Classified helps you choose a single malt whisky that suits *your* palate, not someone else's**
- **You don't have to taste them all to discover which malts you like best**

Today's Vertex 2010 Tasting

Aberfeldy, Aberlour, An Cnoc, Ardbeg, Ardmore, Auchentoshan, Balblair, Balvenie, Ben Nevis, BenRiach, Benromach, Bowmore, Bruichladdich, Bunnahabhain, Connemara, Dalmore, Deanston, Dufftown, Edradour, Glen Deveron, GlenDronach, Glenfarclas, Glenfiddich, Glen Garioch, Glengoyne, Glenlivet, Glenrothes, Glenturret, Highland Park, Isle of Jura, Inchmurrin, Laphroaig, Ledaig, Loch Lomond, Macallan, Old Pulteney, Penderyn, Royal Lochnagar, Scapa, Smokehead, Speyburn, Strathisla, Talisker, Tobermory, Tomintoul, Tullibardine and Tyrconnell.



whisky classified

choosing single malts by flavour

DAVID WISHART



Whisky Classified

*Choosing Single Malts by
Flavour*

David Wishart

Pavilion Books, London,
Second Edition May 2006

Price £14.99

whiskyclassified.com

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