

HUGH JOHNSON'S **MODERN ENCYCLOPEDIA of WINE**



SECOND EDITION REVISED AND UPDATED/Author of THE WORLD ATLAS OF WINE



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MODERN
ENCYCLOPEDIA

of

WINE

SECOND EDITION
REVISED AND UPDATED

Simon and Schuster
New York



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CONTENTS

INTRODUCTION

6

MODERN WINE

8

In the Vineyard 12

Grape Varieties: The Vine 17 *The Classic Grapes* 18 *France* 20 *Italy* 23 *Germany* 26
Spain and Portugal 28 *California* 30 *Southeast Europe* 32 *From Grapes to Wine* 33 *Making Wine* 34

WINES, VINEYARDS AND WINEMAKERS OF THE WORLD

42

FRANCE 43

Bordeaux 45 *Bordeaux Châteaux Index* 102
Burgundy 104 *Jura* 150 *Savoie* 152
Loire 154 *Champagne* 171 *Alsace* 181 *Rhône* 187
Provence 199 *The Midi* 202 *Corsica* 213
The Southwest 214 *Vins de Pays* 222

GERMANY 227

Mosel-Saar-Ruwer 234 *Abr and Mittelrhein* 245
Rheingau 246 *Nabe* 255 *Rheinbessen* 260
Rheinpfalz 264 *Hessische Bergstrasse* 270
Franken 270 *Württemberg* 274 *Baden* 277

ITALY 282

Piedmont 284 *Valle d'Aosta* 295 *Liguria* 296
Lombardy 297 *Trentino-Alto Adige* 301
Veneto 305 *Friuli-Venezia Giulia* 310
Emilia-Romagna 313 *Tuscany* 317 *Umbria* 327
The Marches 330 *Latium* 332 *Abruzzi* 335
Campania 336 *Molise* 337 *Apulia* 338
Calabria 342 *Basilicata* 343 *Sicily* 344 *Sardinia* 347

SPAIN 350

Northern Spain 352 *Rioja* 354 *Catalonia* 361
Central Spain 365 *Sherry* 367 *Southern Spain* 373

PORTUGAL 375

Portuguese Table Wines 376 *Port* 380 *Madeira* 385

SWITZERLAND 387

AUSTRIA 394

SOUTHEAST EUROPE 400

Hungary 400 *Czechoslovakia* 402 *Yugoslavia* 403
Bulgaria 405 *Romania* 406 *Greece* 406 *Cyprus* 408
Turkey 409

THE LEVANT AND NORTH AFRICA 410

Lebanon 410 *Israel* 410 *Tunisia* 410
Algeria 411 *Morocco* 411

USA 412

California 412 *The Pacific Northwest* 452
Other Regions of the USA 456

AUSTRALIA 462

NEW ZEALAND 477

SOUTH AFRICA 481

CENTRAL AND SOUTH AMERICA 488

Chile 488 *Brazil* 489 *Argentina* 490 *Mexico* 491

ENGLAND 492

ENJOYING WINE

493

Buying 494 *Choosing* 498 *Storing* 504 *Glasses* 510 *Serving* 512 *Corks and Corkscrews* 517 *Tasting* 519

INDEX 524 ACKNOWLEDGMENTS 544



**Other books
by Hugh Johnson**

Wine
The World Atlas of Wine
The International Book of Trees
Hugh Johnson's Pocket Encyclopedia of Wine
The Principles of Gardening
Hugh Johnson's How to Enjoy Wine
The Atlas of German Wines
The Cellar Book
The Wine Atlas of France

Also by Hugh Johnson

Hugh Johnson's How to Enjoy Wine
(audio- and videocassettes)
Hugh Johnson's Wine Cellar
(computer software)



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CONTENTS

INTRODUCTION

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Calabria 342 *Basilicata* 343 *Sicily* 344 *Sardinia* 347

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Lebanon 410 *Israel* 410 *Tunisia* 410
Algeria 411 *Morocco* 411

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California 412 *The Pacific Northwest* 452
Other Regions of the USA 456

AUSTRALIA 462

NEW ZEALAND 477

SOUTH AFRICA 481

CENTRAL AND SOUTH AMERICA 488

Chile 488 *Brazil* 489 *Argentina* 490 *Mexico* 491

ENGLAND 492

ENJOYING WINE

493

Buying 494 *Choosing* 498 *Storing* 504 *Glasses* 510 *Serving* 512 *Corks and Corkscrews* 517 *Tasting* 519

INDEX 524 ACKNOWLEDGMENTS 544

INTRODUCTION

To live in the Golden Age of one of life's great pleasures is something we all do, but few of us seem to realize. There never was a time when more good wine, and more different kinds of wine, were being made.

It was 150 years ago that Cyrus Redding, a London wine merchant, wrote his great *History and Description of Modern Wines*. To him the word 'Modern' distinguished the wines of his time from those of the Ancients, still then reverentially supposed to have been, like their architecture, of a quality that could be only humbly imitated.

Redding asserted the new world of nineteenth-century wine, based on the technology of the Industrial Revolution. If the great mass of wine in his day was still made by medieval methods, the leaders were setting the styles and standards and devising the techniques that today we accept as classic.

These methods are now old. Our understanding of wine and our techniques for making it have moved into a new phase, led by sciences that were not dreamed of in the last century. It is time to use the word modern again with a new meaning to describe the brilliant new age of wine that has opened in the past generation.

The nineteenth century closed, and the twentieth opened, with crisis and calamity in the vineyards of the world. Phylloxera, mildew, war, Prohibition and slump followed in a succession that prevented the majority of wine growers from making more than a meagre living. Standards, ideas and technology marked time. For the privileged there were wonderful wines to be had – and cheap, too. But little that was new or exciting developed into commercial reality until the 1960s. Then suddenly the product and the market rediscovered one another.

There were stirrings everywhere, but it was California that led the way. The coincidence of ideal wine-growing conditions and a fast-growing, educated and thriving population were the necessary elements. A generation of inspired university researchers and teachers in California and Europe (and also in Australia) were the catalysts. In the 1970s sudden intense interest in every aspect of wine caught on in country after country. From that moment to this the process has continued to gather momentum.

This book is a portrait of this new world of wine: its goals, its methods, its plant of vineyards and cellars, and above all its practitioners. It is designed to be a practical companion in choices that become more varied and challenging all the time. Like any portrait, it tries to capture the reality of a single moment. The moment is past as soon as the shutter has clicked. The closer the focus and the greater the detail the more there is to change and grow out of date. Yet the detailed record of a single season in wine's long history is as close to reality as it is possible to get. This edition has been revised and updated to reflect the reality of 1987.

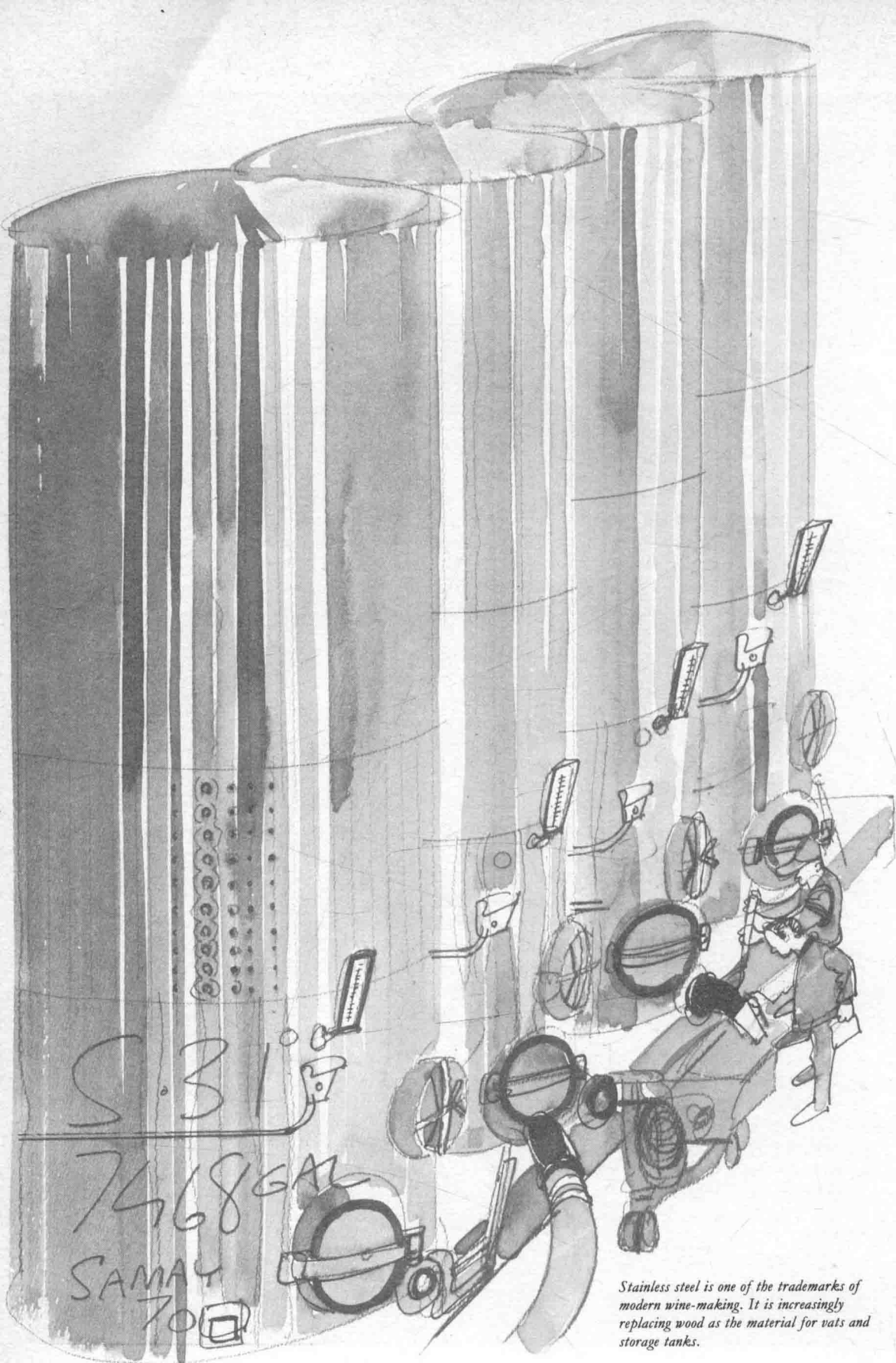
To be a practical companion I have tried to give the essential information about each wine country and wine region you are likely to encounter or which is worth making an effort to know. I have shunned a great catalogue of the legislation that surrounds the wine business increasingly each year. It casts little light and does nothing to add to the pleasure of our subject – which is, after all, either a pleasure or a failure.

The essentials, it seems to me, are the names and as far as possible (which is not very far) descriptions of the world's worthwhile wines, who makes them, how much there is of them, an idea of their price, how well they keep, and where they fit into our lives – which are too short, alas, to do justice to anything like all of them. You will also find answers to the recurring questions about grape varieties, production methods and the ways of the wine trade. You will not find a historical survey or a technical treatise; just enough technical information, I hope, to indicate essential differences and the trends of change in wine-making today.

The heart of the book is arranged by countries on the same system as my Pocket Encyclopaedia of Wine, with the Index as the alphabetical alternative to find a name you cannot immediately place in a national or regional context. This is updated far less frequently than its annual pocket-sized stablemate, leaving to its more ephemeral editions the questions of current vintages, their quality and maturity. Both will be much clearer if you possess the current (third) edition of *The World Atlas of Wine*, in which the regions are graphically displayed.

Each national or regional section gives the essential background information about the wines in question, then lists with succinct details the principal producers. In a few well-trodden areas the lists make themselves. In most others a complete catalogue would be as unhelpful as it would be unmanageable. My method then has been to consult first my own experience, then the advice of friends, local brokers and officials whom I have reason to respect. I have corresponded with as many producers as possible, asking them specific questions about their properties or firms, the methods, products and philosophies. Often, unfortunately, the exigencies of space have forced me to leave out good producers I would have liked to include. In most countries I have also employed intermediaries to research, interview and pass me their findings. I have tasted as many of the wines described as I could (which is why specific tasting notes go back ten years).

The enjoyment of wine is a very personal thing. Yet if you love it, and spend your life among other wine lovers, you will find a remarkable consensus about which wines have the power to really thrill and satisfy us. Prejudice and narrow-mindedness have no place; preferences are what it is all about. I have not tried to hide mine among the fabulous variety described in this book.



Stainless steel is one of the trademarks of modern wine-making. It is increasingly replacing wood as the material for vats and storage tanks.

Modern Wine

At its simplest, wine is made by crushing grapes and allowing the yeasts naturally present on the skins to convert the sugar in their juice to alcohol. This is the process of fermentation. No more human intervention is needed than to separate the juice from the skins by pressing. Crushed and fermented like this, white grapes make white wine and red grapes red.

The art of the wine maker can be equally simply expressed. It is to choose good grapes, to carry out the crushing, fermenting and pressing with scrupulous care and hygiene, and to prepare the wine for drinking by cleaning it of yeasts and all foreign bodies. For some sorts of wine this entails ageing it as well; for others the quicker it gets to market the better.

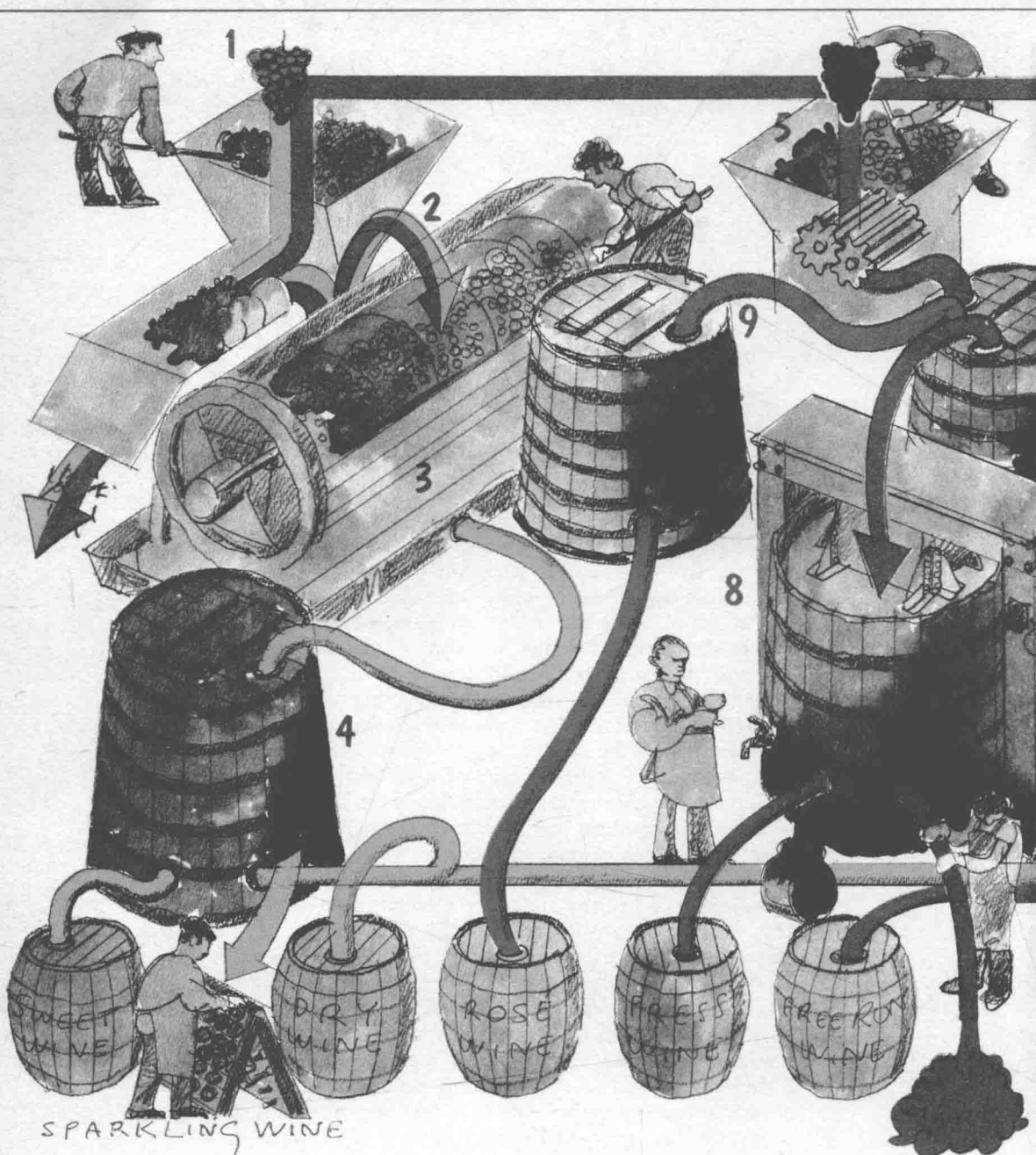
These are the eternal verities of wine and wine-making, well understood for hundreds of years. They can be carried to perfection with no modern scientific knowledge or equipment whatever – with luck. Great wines came to be made in the places where nature, on balance, was kindest. Given a ripe crop of grapes in a healthy state, the element that determined success more than any other was the temperature of the cellar during and after the fermentation. France (but not the south), Germany, the Alps, Hungary, had these conditions. The Mediterranean and places with a similar climate did not.

If there is one innovation that has made the most difference between old and modern wine-making it is refrigeration. Refrigeration and air conditioning have added the whole zone of Mediterranean climate to the world of potentially fine wine.

But technology has advanced on a broad front. Every aspect of grape-growing and wine-making is now under a degree of control undreamed of before. These controls are now common practice in almost all the bigger and newer plants where wine is made. Its scientific basis is widely understood even in traditional areas and among small properties.

One California professor confesses that wine makers now have more controls than they know how to use. In California white-wine making is so clinically perfected that one of the main problems is deciding what sort of wine you want to make.

On the other hand, as Professor Peynaud, the leading consultant wine maker in Bordeaux, says, 'The goal of modern oenology is to avoid having to treat the wine at all.'



HOW WINE IS MADE

Wine is simply fermented grape juice. The basic techniques are explained above, variations on the theme are listed on the right.

White wine

- 1) Red or white grapes are put through a crusher-stemmer that crushes the grapes and tears off the stalks.
- 2) The broken grapes are pumped into a horizontal press.
- 3) The juice falls into a trough from which it is pumped into a fermenting vat.
- 4) Fermentation may be arrested to produce sweet or

sparkling wine, or allowed to continue until all the sugar is consumed to make dry wine.

Red wine

- 5) Red grapes are fed through a crusher or crusher-stemmer and pumped into a vat.
- 6) The grapes ferment (usually with skins) until all the sugar is consumed.
- 7) The free-run wine runs off.
- 8) The skins are pressed in a hydraulic basket press. Some

VARIATIONS

DRY WHITE WINES

Plain dry or semi-dry wine of no special character, fully fermented, not intended to be aged. Usually made with non-aromatic grapes, especially in Italy, southern France, Spain, California. Outstanding examples are Muscadet and Soave. Wine-making is standard, with increasing emphasis on freshness by excluding oxygen and fermenting cool.

Fresh, fruity, dry to semi-sweet wines for drinking young, made from aromatic grape varieties: Riesling, Sauvignon Blanc, Gewürztraminer, Muscat Blanc, for example. Extreme emphasis on picking at the right moment, clean juice, cool fermentation and early bottling.

Dry but full-bodied and smooth whites usually made with a degree of 'skin contact', fermentation at a higher temperature, sometimes in barrels. Bottled after a minimum of 9 months and intended for further ageing. Chardonnay from Burgundy is the classic example. Sauvignon Blanc can be used in this way.

SWEET WHITE WINES

Fresh, fruity, light in alcohol, semi-sweet to sweet in the German style. Now made by fermenting to dryness and 'back-blending' with unfermented juice.

The same style but made by stopping fermentation while some sugar remains. Usually has higher alcohol and more winy, less obviously grapey flavour. Most French, Spanish, Italian and many New World medium-sweet wines are in this category.

Botrytis (noble rot) wines with balance of either low alcohol with very high sugar (German style) or very high alcohol and fairly high sugar (Sauternes style).

Very sweet wines made from extremely ripe or partially raisined grapes. Italian vin santo is the classic example.

ROSE WINES

Pale rosé from red grapes pressed immediately to extract juice with very little colour, sometimes called Vin Gris ('grey wine') or Blanc de Noirs.

Rosé with more colour made from red grapes crushed and saignes or 'bloomed' by a short red-wine type maceration or vatting, then pressed and fermented like white wine. The more common method used for Tavel rosé, Anjou rosé, Italian Chiaretto and vin d'une nuit. Champagne rosé is the only

rosé traditionally made by blending red and white wines.

RED WINES

Light, fruity wines made with minimum tannin by short vatting on the skins. Should be drunk within a year or two as the extract, pigments and tannin necessary for maturation are absent. Can be made with aromatic grapes but are more commonly made of varieties with a simple fruity smell (e.g. Gamay) or with neutral grapes.

Softer, richer, more savoury and deep-coloured wines (but still low in tannin) made by macération carbonique or interior fermentation of the grapes before pressing. Heating the must is another method of producing colour and smoothness.

Full-blooded reds for maturing (vins de garde) made by long vatting of the skins in the juice to extract pigments, tannins, phenols, etc. All great red wines are made this way.

FORTIFIED WINES

Vin doux naturel is naturally very sweet wine fermented to about 15% alcohol, when further fermentation is stopped (muté) by adding spirits.

Port follows the vin doux naturel procedure, but fermentation is stopped earlier, at 4–6°, by a larger dose of spirits: a quarter of the volume.

Sherry is naturally strong white wine fully fermented to dryness. Then a small quantity of spirits is added to stabilize it while it matures in contact with air.

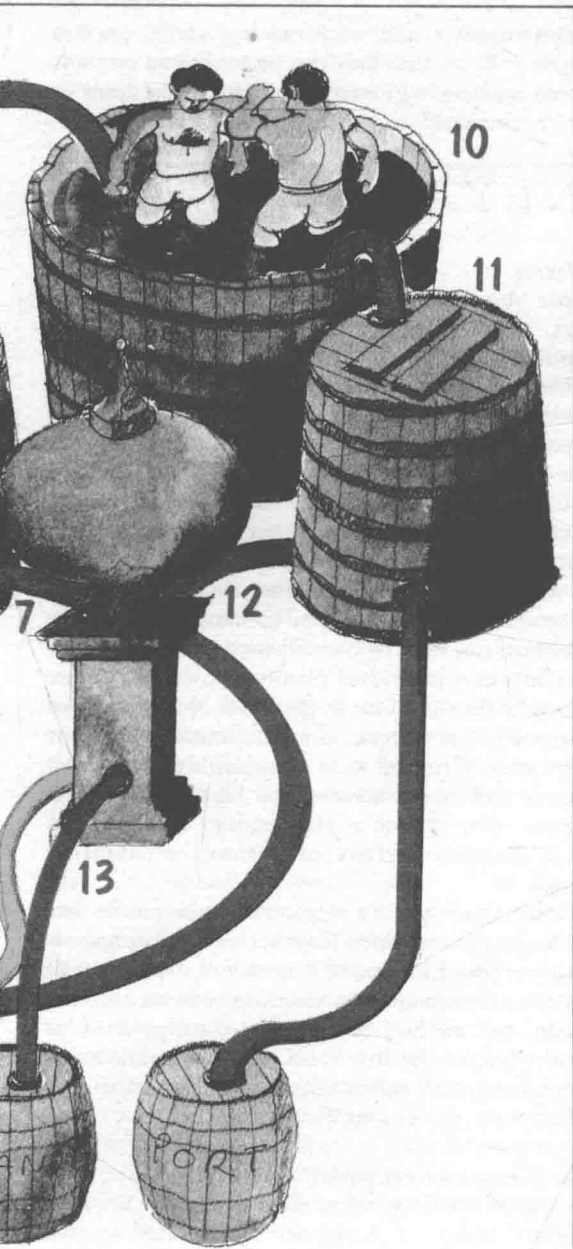
Madeira is white wine with naturally high acidity stopped with alcohol before fermentation has stopped. Then it is baked in 'stoves' before ageing in barrels or big glass jars.

SPARKLING WINES

White (or sometimes red) wines made to ferment a second time by adding yeast and sugar. The gas from the second fermentation dissolves in the wine. In the classic champagne method the second fermentation takes place in the bottle in which the wine is sold, involving complicated and laborious processing (see page 174). Less expensive methods are:

The transfer process. The wine is transferred, via a filter, under pressure to another bottle. **Cuve close.** The second fermentation takes place in a tank; the wine is then filtered under pressure and bottled.

Carbonization. Carbon dioxide is pumped into still wine.



press wine is usually mixed with free-run wine.

Rosé

9) Red grapes are crushed, pumped into a fermentation vat, and almost immediately the juice is run off into another vat, having taken a pink colour from the skins.

Port

(The process is similar for other fortified wines.)

10) Red grapes are trodden

in a stone trough.

11) The juice ferments in a vat until half the sugar is converted to alcohol.

12) Brandy, from a still, is added to stop fermentation.

Brandy

13) White wine is made in the normal way and distilled to produce brandy.

The following pages summarize some of the more important modern techniques and currently held views on the many factors that affect the qualities of wine. They follow the processes of

grape-growing and wine-making more or less sequentially so that they can be read as an account or referred to as a glossary. Some processes apply to white wine only, some to red, some to both.

IN THE VINEYARD

Grape Varieties

The choice of grape varieties is the most fundamental decision of all. The subject is covered, in colour and with a number of detailed distribution maps, on pages 17–32.

Source of Grapes

There are arguments both for and against growing your own grapes. Those in favour are that you have total control over the management of the vineyard and thus decide the quality of the grapes. The argument against is that an independent wine maker can pick and choose among the best grapes of specialist growers in different areas.

In France and throughout most of Europe almost all quality wine (except for most champagne) is 'home-grown'. In California the debate is more open. Wine makers who buy their grapes (almost always from the same suppliers) include some of the very best.

Virus-free Vines

Certain authorities (notably at the University of California) are convinced that the only way to achieve a healthy vineyard is to 'clean' the vine stocks in it of all virus infections. It was not appreciated until recently that the beautiful red colouring of vine leaves in autumn is generally a symptom of a virus-infected, and therefore possibly weakened, plant.

Plants can now be propagated free of virus infection by growing them very fast in a hot greenhouse, then cutting off the growing tips and using them as mini-cuttings (or micro-cuttings, growing minute pieces of the plant tissue in a nutrient jelly). The virus is always one pace behind the new growth, which is thus 'clean' and will have all its natural vigour.

It must be said on the other hand that virus elimination is not a substitute for selection of the best vines for propagation. The Office International du Vin officially declared in 1980 that 'it is a fantasy to try to establish a vineyard free of all virus diseases' and recommended its members to 'select clones resistant to dangerous virus diseases and which will still be capable, after infection, of producing a satisfactory crop both as to quality and quantity' (see Cloning).

Cloning

Close observation in a vineyard will tend to show that some vine branches are inherently more vigorous, bear more fruit, ripen earlier or have other desirable characteristics. These branches (and their buds) are 'mutations', genetically slightly different from the parent plant. The longer a variety has been in cultivation the more 'degenerate' and thus genetically unstable it will be, and the more mutations it will have. The Pinot family is extremely ancient and notoriously mutable.

A recent technique is to select such a branch and propagate exclusively from its cuttings. A whole vineyard can then be planted with what is in effect one identical individual plant – known as a clone. There is thus not one single Pinot Noir variety in Burgundy but scores of clones selected for different attributes. Growers who plant highly productive clones will never achieve the best-quality wine. Those who choose a shy-bearing, small-berried clone for colour and flavour must reckon on smaller crops.

One advantage of a single-clone vineyard is that all its grapes will ripen together. A disadvantage is that one problem, pest or disease will affect them all equally. Common sense seems to indicate that the traditional method of selecting cuttings from as many different healthy vines as possible (known as 'mass selection') rather than one individual, carries a better chance of long-term success.

The Choice of Rootstocks

The great majority of modern vineyards are of a selected variety of European vine grafted on to a selected American rootstock which has inbuilt resistance to the vine-killing pest phylloxera. Compatible rootstocks have been chosen and/or bred and virus-freed to be ideal for specific types of vineyard soil. Some are recommended for acid to neutral soils (such as most in California) while others flourish on the limey or alkaline soils common to most of Europe's best vineyards.

Grafting

The grafting of a 'scion' of the chosen vine variety on to an appropriate rootstock is either done at the nursery before planting ('bench grafting') or on to an already-planted rootstock in the vineyard ('field

grafting'). In California recently it has become common practice for a grower to change his mind after a vine has been in production for several years, deciding that he wants (say) less Zinfandel and more Chardonnay. In this case he simply saws off the Zinfandel vine at rootstock level, just above the ground, and 'T-bud' grafts a Chardonnay scion in its place. Within two years he will have white wine instead of red.

Hybrid Vines

After the phylloxera epidemic in Europe a century ago a number of France's leading biologists started breeding hybrid vines by marrying the European classics to phylloxera-resistant American species. Once the technique of grafting the French originals on to American roots was well established the French establishment rejected these '*producteurs directs*', or 'PDs' (so-called because they produced 'directly' via their own roots). Good, hardy and productive as many of them are they are banned from all French appellation areas for fear of altering their precious identity. Their American parent-hood, however, has made them highly suitable for use in the eastern United States, where hardiness is a perpetual problem (see page 459). They are also very popular in the new vineyards of England and New Zealand.

New Crossings of European Vines

Germany is the centre of a breeding programme quite distinct from 'hybrid' vines. Its object is to find within the genetic pool of varieties of *Vitis vinifera* a combination of desirable qualities which could supplant, in particular, the Riesling, Germany's finest vine but one that ripens relatively late, thus carrying a high risk element at vintage time. So far no cross has even remotely challenged the Riesling for flavour or hardiness – though many have for productivity, strongly aromatic juice and early ripening. The Müller-Thurgau was the first and is still the best-known example.

The University of California also has a *vinifera* breeding programme which has produced some useful additions, particularly among high-yielding grapes for hot areas which retain good aromas and acidity. The best-known examples are Ruby Cabernet (Cabernet Sauvignon × Carignan), Canelan and Centurion (Cabernet Sauvignon × Grenache), Carmine (Cabernet Sauvignon × Merlot), Emerald Riesling (Riesling × Muscadelle) and Flora (Gewürztraminer × Semillon), all produced by Dr. Harold Olmo at Davis.

South Africa has produced the Pinotage, said to be a cross between Pinot Noir and Cinsaut (though unfortunately with none of the qualities of the for-

mer). With more than 3,000 named varieties already in circulation to choose from there seems to be a limited point in breeding for the sake of breeding.

Soil

Soil is always given pride of place in French discussions of wine quality. It is considered from two aspects: its chemical and its physical properties. Current thinking is that the latter is much the more important. Most soils contain all the chemical elements the vine needs. The physical factors that affect quality are texture, porosity, drainage, depth and even colour. In cool climates anything that tends to make the soil warm (i.e. absorb and store heat from the sun) is good. Stones on the surface store heat and radiate it at night. Darker soil absorbs more radiation. In Germany vine rows are oriented to expose the soil to the sunlight for as long as possible.

Dry soil warms up faster. Another important advantage of good deep drainage (e.g. on Médoc gravel) is the fact that it makes the vine root deep to find moisture. Deep roots are in a stable environment: a sudden downpour just before harvest will not instantly inflate the grapes with water. On the other hand experiments at Davis, California, recently have shown that where the soil is cooler than the above-ground parts of the vine the effect can be good for the grape pigments and give deep-coloured red wine. (Château Petrus on the iron-rich clay of Pomerol would seem to bear this out. St-Estèphe also has more clay and its wines often more colour than the rest of the Médoc.)

In California clay also seems to produce stable white wines that resist oxidation and therefore have a greater ability to mature. But in California over-rapid ripening often leads to wines that are low in acid and easily oxidized. The cool of clay may simply be slowing the ripening process: the very opposite of the effect required in, say, Germany.

A reasonable conclusion would be that the best soil is the soil that results in the grapes coming steadily to maturity: warm in cool areas, reasonably cool in hot areas. It should be deep enough for the roots to have constant access to moisture, since a vine under acute stress of drought closes the pores of its leaves. Photosynthesis stops and the grapes cannot develop or ripen.

Expert opinion seems to be that if the soils of the great vineyards (e.g. Bordeaux first-growths) have more available nutrients and minerals (especially potassium) it is because their owners have invested more in them. The closest scrutiny of the Côte d'Or has not revealed chemical differences between the soils of the different crus which would account for their acknowledged differences of flavour.