

WINE AND HEALTH THROUGH THE AGES
WITH SPECIAL REFERENCE TO AUSTRALIA

BY

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DEDICATION

This thesis is dedicated to my family - my wife Belinda and my sons Andrew and Alexander for their love and support and to the concept of preventative medicine (the best way to treat a disease is not to get it in the first place) using oenotherapy.

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STATEMENT OF AUTHENTICATION

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

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Dr P A Norrie

ABSTRACT

Wine is man's oldest medicine, having been used as such by the medical profession for over 5,000 years. Until recently the anti-alcohol lobby has had the high moral ground promoting alcohol and wine consumption in terms of doom and gloom. Research over the last decade has turned this view around so that now most members of the medical profession view the consumption of a moderate amount of wine in a favourable way, to the point now that it is not only looked upon as causing no harm, but actually for most being beneficial. If one examines the history of the use of wine as a medicine this is not a new idea, but one that has been rediscovered and given credibility due to current research findings. This thesis will examine this use of wine as a medicine in the past and currently.

Little has been written about the history of the use of wine as a medicine in the past and very little has been written about its use as a medicine in Australia and about the doctors in Australia who established their vineyards to make wine for their patients – Australia's many wine doctors.

This thesis will aim to correct these wine and medical historical deficiencies, thus helping to put the whole question of wine and health into a more balanced and proper perspective, instead of the ill-informed, negative anti-alcohol view.

INTRODUCTION

The aim of this thesis is to document the history of the uses of wine as a medicine, particularly in Australia, and show that it is man's oldest medicine. I will be using a social ecology framework, which is concerned with the interrelationships between the domains of the personal, social and environmental, with a critical, holistic transdisciplinary understanding approach. All of these foci are relevant to both the gaining of a full understanding of the wine and health story and for deciding how to act on that understanding so as to achieve the greatest benefit for the greatest number.

As a family doctor, vineyard owner and historian this thesis is important to me because it provides an opportunity to integrate all these three major interests and influences on my life into one. As a doctor I am interested in and committed to preventing illness, rather than treating it.

The research will challenge the simplistic notion that because wine is a form of alcohol it is therefore bad for you. This thesis will marshal the evidence and show by contrast, that in moderation it can not only be not harmful, but also actually be good for you. Indeed, I will argue that it is our best preventative medicine, because it can reduce death rate from vascular disease from all causes by up to 50%; which is beyond the capacity of any other type of medicine. Furthermore, I will show that consuming wine in moderation is the most important preventative health measure one can take except for giving up smoking. The dominant view of wine as a threat to health because of its alcohol content is typical of modernist approach to understanding. To challenge this, a

postmodernist approach will be used to construct a deep discourse between health professionals, the public, politicians and civil servants, business educators and religious leaders.

This thesis will also review the uses of wine as a medicine in Australia and show the unique relationships between Australia's early medical profession and wine.

In doing this, my research will counter the anti-alcohol lobby's case, which it will be argued is based on misinformation about the effects of wine in our society and also the push for more tax on wine to reduce the relatively minor harm caused by the abuse of wine, compared with its benefits. One of the world's leading epidemiologists, Sir Richard Doll F.R.S., D.Sc., D.M. (Oxon), F.R.C.P., Emeritus Professor of Medicine at Oxford University published a paper called "One for the Heart" in 1997 in the British Medical Journal. At the end of this paper he concluded that even after you allow for the consequences of alcohol abuse, there remains a net health benefit for society from the consumption of alcohol, and public health policy makers should re-evaluate their anti-alcohol views accordingly. One aim of this research will be to change the perception of wine from one of a drink for special occasions to one of a daily health drink taken in moderation with a meal.

The challenge is great, because until recently the anti-alcohol lobby has occupied the high moral ground and preached an opposite view to that taken here. Their position is characterised by sayings such as "lips that touch liquor must never touch mine" from British writer George W. Young (1846-1919).

Fortunately for our health and wellbeing, research over the last decade is beginning to turn this view around so that now an increasing number in the medical profession view the consumption of a moderate amount of wine as being potentially beneficial. The history of the use of wine as a medicine is not a new idea, but rather one that has been rediscovered and given credibility due to current research findings. This thesis will examine this use of wine, throughout history as a medicine, and hopefully contribute to a needed change in perception of the role of wine as a medicine in our society.

The first section of the thesis will review the history of the use of wine as a medicine in the past, especially by the ancients. Wine is man's oldest medicine, having been used as such by the medical profession for over 5,000 years. It will trace the use of wine as a medicine from the time of the Pharaohs through to the Greek Empire, The Roman Empire, the ancient Arab world through the Middle ages to today.

The second section will tell the story of Australia's "Wine Doctors" - those members of the medical profession in Australia who established vineyards. So far there have been over 180 wine doctors and this high proportion, compared with the general winery population, is unique to Australia. Australia's three largest wine companies Lindeman, Penfold and Hardys were founded by doctors, as were other famous labels such as Minchinbury, Angove, Houghton and Stanley, which have become household names and industry icons in Australia.

Who were and are these wine doctors, why did they establish their vineyards and why was this phenomenon unique to Australia? Part of this section will examine the vast contributions made by these wine doctors to Australia's wine industry. These wine

doctors were are at the forefront of new developments and research in Australia's wine industry and have made many significant contributions to Australia's wine industry and Australia's economy and balance of trade.

The third section of the thesis will deal with the current research into wine/alcohol and health, both overseas and in Australia. Studies such as the Copenhagen study, the One for the Heart study and Professor Serge Renaud's latest research will be examined (because of their importance, these papers are included in the appendix of this thesis), along with various strands of current research that are endeavouring to explain the beneficial effects of wine. This research includes the effects of wine on High Density Lipoproteins and Low Density Lipoproteins, how wine acts as an anti-coagulant and as an anti-oxidant and salicylates in wine.

The fourth section will bring all the history and research together to discuss the preventative health aspects of wine and provide an action research model to show how to promote these findings and benefits. It will show that if drinking wine in moderation reduces death from all causes by up to 50%, then it must be considered one of the most significant preventative health measures our society can adopt, an idea that "flies in the face" of the anti-alcohol lobby. The medicinal virtues of consuming wine in moderation are many and varied. Not only does it reduce our society's greatest cause of mortality and morbidity, vascular disease, by up to 50%, but it also can contribute towards the reduction of colds, lowering blood pressure, reducing osteoporosis, gallstones and dementia, and increasing morale and appetite in post operative/convalescent patients and others in nursing homes. Furthermore, it can also act as an anti-carcinogen because of the anti-oxidant effects on free radicals. Wine is also a fat and cholesterol-free source

of proteins and carbohydrates, and a significant source of vitamins, minerals and trace elements.

The research methodology in this thesis will employ a thorough literature analysis, questionnaires, targeted interviews, facilitation of focus group dialogues and the ongoing meeting of a participatory action research group comprising major representative stakeholders with interests in this area of investigation. It will include investigating primary source material from Australia's leading archival libraries such as the Mitchell Library, Mortlock Library and Battye Library; from the Royal Australian College of Physicians medical history library; from descendants of past wine doctors and interviews and questionnaires with current wine doctors.

1. LITERATURE REVIEW

1.1 INTRODUCTION

The purpose of this literature review is to show the current state of knowledge about the use of wine as a medicine in three areas, namely in the past, in Australia and in the present. The dominant view that in moderation wine is good for you, both in preventing and treating disease and illness, will be supported, and the divergent view presented by the anti-alcohol lobby and Temperance Movement will also be shown. It must be emphasised here that what is being advocated is the consumption of wine in moderation and not abuse of alcohol. This thesis in no way condones the abuse of alcohol or underage consumption of alcohol. Moderation is defined as per the Australian National Health and Medical Research Council's recommendations of a maximum of four standard drinks per day for a male and a maximum of two standard drinks per day for a female, with a standard drink being the equivalent of ten grams of alcohol. The emergent view of current thinking about the medicinal virtues of alcohol and especially wine in moderation will be discussed by referring mainly to several landmark medical epidemiological quantitative research papers including Professor Serge Renaud's "French Paradox" paper (1992), Dr. Marten Gronbaeks' "Copenhagen Study" paper (1995) and finally Sir Richard Doll's "One for the Heart" study (1997). All relevant papers up to and including 2000 will be included in this thesis, and only wine made from grapes (not any other fruit or vegetable) will be discussed.

1.2 ANCIENTS

The relatively limited literature on the use of wine as a medicine in ancient times provides little detail. Most books on ancient medicine give scant reference to wine as a therapy from a paragraph here or there to a few pages at best. Nurm's "Ancient Egyptian Medicine"(1) for example devotes a paragraph to the use of wine as a vehicle or menstruum and shows wine in three example lists of drugs used for various symptoms from the papyri (aperients, cough and to contract the uterus).

Hippocratic medicine contains several of his aphorisms on wine (2). There are also a few pages in Chapter IV "Of Wounds and Ulcers" in Dr. Riollay's book on Hippocrates (3). Galen's Hygiene (4) devotes only a three-page chapter to wine (Chapter V "A Chapter on Wines"). Dioscorides' views on wine cover five pages in a book of his teachings (5). These references are derived directly from the writings and teachings of these famous Greek physicians, whereas an authoritative work on Greek medicine (6) only devotes a few pages to the use of wine as a medicine. Similar limited coverage is found in Roman, Arabic, Indian and Chinese medical histories. Thus, no major in-depth history of the use of wine as a medicine has been written, only brief mentions.

Recently, however, several papers have been written about the use of wine as a medicine by the ancients, the most notable being by Professor Beaver (7), Dr. Peter Bourke (8) and Dr. Eric Skovenborg (9); yet these papers provide only a broad coverage of the subject. The only work to give a detailed history of the use of wine as a medicine over the centuries was written by Dr. Salvatore Lucia (10). Dr. Lucia has written many books on the subject of wine as a medicine including 'Wine as a Food and

Medicine' (1954), 'Wine and the Digestive System' (1970) and 'Wine and Your Well-Being' (1971). His most comprehensive 234-page history of wine as a medicine, 'A History of Wine as Therapy' sadly neglects Australia and America and is 40 years out of date, being published in 1963.

This thesis will address these two major deficiencies, as well as other minor omissions and provide an action plan for implementing the findings of this thesis to help promote the use of wine as a preventative medicine.

1.3 AUSTRALIA

Very little has been written about the use of wine as a medicine in Australia. One of the aims of this thesis is to address this.

The standard reference books on Australia Wine have been written by Australia's two leading wine writers Len Evans and James Halliday. Len Evans' 'Complete Book of Australian Wine' (1) first appeared in 1973 and has been revised and reprinted with new versions appearing in 1974, 1975, 1976, 1977, 1978, 1984 and most recently in 1990. This shows how popular and dominant this book has been, yet nowhere is the use of wine as a medicine by Australia's many wine doctors discussed.

The other standard book is James Halliday's 'The Australian Wine Compendium' (2). This appeared in 1985 and was followed up by his 'Australian Wine Guide' in 1986 (3), which led to his famous series of annual 'Australian and New Zealand Wine Companions', first published by Angus and Robertson in 1995 and now by Harper Collins. Again, nothing was included about the history of the use of wine as a medicine in Australia.

Many other extensive texts have been written about the Australian wine industry, such as by Andre Simon, founder of the International Wine and Food Society, in 1966 (4) and Robert Mayne in 1985 (5), but still with no mention of wine as a medicine.

These are recent reference books about the Australian wine industry, but what about past reference books? Professor A.J. Perkins, the Principal of the Roseworthy

Agricultural College (Australia's first wine school) until 1914, referred to Dr. A.C. Kelly's two books as "the best standard works available"(6). The two books he was referring to were 'The Vine in Australia' (7) published in 1861, and 'Wine Growing in Australia' (6), published in 1867 by Dr. A.C. Kelly M.D. of Adelaide. For many years after their publishing, until well into the Twentieth Century, these two books reigned as Australia's leading wine books, and yet there is no mention of wine as a medicine. Another Australian wine reference book of this period was written by Hubert de Castella, a Victorian wine authority originally from Switzerland. His famous descendant is Robert de Castella, the Australian marathon runner. His book 'John Bull's Vineyard' (8), published in 1886, spoke about how Australia had the potential to be England's (John Bull's) vineyard colony, hence England would not have to be so dependent on Europe, and especially France, for its wine supplies. Again, there was no mention of wine as a medicine.

Going even further back in Australia's wine history we come to James Busby, often referred to as the "Father of the Australian wine industry", because of the many books he wrote about growing grapes and making wine in Australia. He wrote the first books about wine in Australia and established the famous Busby collection of vines, which he had brought out to Australia after his tour of the famous vineyards of Europe in 1831. These many different types of vines arrived in Sydney in 1833 and provided cultivars for the colony's early wine industry.

Busby's first book was published in 1825 and titled 'Treatise on the Culture of the Vine and the Art of Making Wine' (9). This was followed in 1830 by 'A Manual of Plain Directions for Planting and Cultivating Vineyards and for Making Wine in New South

Wales' (10). In 1833 he published his final book 'Journal of a Tour through some of the Vineyards of Spain and France'. There is no mention of the use or history of wine as a medicine in any of Busby's books.

The first book to mention the use of wine as a medicine in Australia was Surgeon John White's 'Journal of a Voyage to New South Wales' (11) published in 1790. White was the surgeon in charge of the First Fleet to Australia in 1787. His journal describes how he considered wine as a "necessity" for the voyage and how he used it to treat scurvy and dysentery.

The next reference to the use of wine as a medicine in Australia comes from Dr. William Redfern who was asked by Governor Lachlan Macquarie, the Governor of the colony of New South Wales, to investigate the ill fated voyage of the convict ship "Surrey" in 1814, on which approximately a quarter of the people on board the ship (convicts, sailors and soldiers) died of 'gaol fever'. Redfern reported back to Macquarie in a letter dated 30th September 1814 (12). An extensive correspondence between Redfern and Macquarie detailed how further such disasters could be avoided, and this resulted in Macquarie's directives in 1815. Central to the new directives to improve conditions for convicts on their long voyage out to Australia, and to prevent disease and death on board convicts transport ship was the use of wine as a medicine. This was discussed many times in detail in this correspondence. Eventually these recommendations resulted in the publication of one of Australia's first public health documents 'Instructions for Surgeon Superintendent on board Convict Ships proceeding to New South Wales or Van Dieman's Land and for the Masters of These Ships' (13) in 1838. Thus, interestingly, one of Australia's earliest public health

booklets is about keeping convicts alive with wine during their long voyage to Australia.

The next reference to the use of wine as a medicine in Australia occurs in 1871 with Dr. Henry John Lindeman's letter to the Editors of the New South Wales Medical Gazette, 'Pure wine as a Therapeutic agent and why it should become our National Beverage' (14). In the letter, Lindeman espouses the virtues of pure, unadulterated wine as a counter to the harm caused by "King Rum" and adulterated spirits. This letter was followed in 1880 by a paper presented to the Royal Agricultural and Horticultural Society by Dr. William Lennox Cleland, the Medical Superintendent of the Parkside Lunatic Asylum in Adelaide, called 'Some remarks upon wine as a food, and its production' (15). In the paper Cleland talks about wine as a food, not as a poison as the Temperance Movement would have us believe, and how it could be used as a medicine to treat scurvy and help as a contribution to a healthy life.

In 1906 Dr. Thomas Fiaschi, a leading surgeon at Sydney Hospital addressed the Australian Trained Nurses' Association with a lecture titled 'The Various Wines used in Sickness and Convalescence' (16). This is a comprehensive ten-page lecture listing all the different types of wine, what conditions they are suitable for, dosages, and prices. It is the first comprehensive document on the subject of the use of wine as a medicine in Australia.

Many hospitals issued their own pharmacopoeia for their staff. These included prescriptions involving the use of wine as a medicine. Various Australian cook books in the late nineteenth century also had medicinal recipes using wine.

All these references, from Surgeon John Whites' book to the cook book recipes noted above, have been discovered and brought to the attention of the wine industry by myself. Prior to my research they had been lost and hidden from general knowledge.

In 1967 Dr. Max Lake, a hand surgeon at Sydney Hospital and founder of Lake's Folly winery, published a book called 'Vine and Scalpel' (17), which was allegedly the complete history of all the medical doctors in Australia who had established vineyards. Unfortunately the book was significantly incomplete, listing only about 40 of the over 180 wine doctors I have discovered. Also, it contained inaccuracies concerning some of the wine doctor histories, especially in the biography of Dr. Lindeman. He also listed as medical doctors two Doctors of Divinity and one Doctor of Law and Letters. Otherwise his book provided a valuable start. This now needs to be corrected, expanded and put into proper historic and medical context and perspective, which is one of the purposes of this thesis.

Only two other books have contributed to the history of the use of wine as a medicine in Australia. In 1975 a very brief history of the Penfold wine family was published by Oswald L. Ziegler for Penfold Wines Australia Pty. Ltd. 'The Penfold Story' (18) mentions the work of Louis Pasteur and his comment that "wine is the most healthful and hygienic of beverages", and how that influenced Dr. Christopher Rawson Penfold to make wine for his patients when he came to Adelaide in (1844). The only other significant Australian book to discuss wine as a medicine, prior to the writing of myself, was written by a learned horticultural historian Dr. Geoffrey C. Bishop: 'Mining, Medicine and Winemaking - a History of the Angove Family 1886-1986'

(19). This was published in 1986 to celebrate the centenary of the Angove Wine Company. It is a well researched and detailed history of a company founded by Dr. William T. Angove, a medical doctor at Tea Tree Gully, an outer suburb of Adelaide. It tells of his many and varied interests, including photography, geology, ornithology and sailing, and how he established his vineyard and used his wine as a medicine.

It can be seen that, until I commenced my research, very little critical material had been written about the use of wine as a medicine in Australia. This thesis will aim to provide a complete history of this use of wine as a medicine in Australia.

1.4 CURRENT RESEARCH

Interestingly, in modern times (early 1900's), it was the Insurance Industry that was most active in drawing our attention to the health benefits of consuming alcohol in moderation. Statistics derived from Insurance Company life expectancy data (1) had shown that moderate consumers of alcohol lived longer than both teetotallers and heavy drinkers. However, this information was suppressed until recent times as part of an ongoing medical 'conspiracy' by the editors of medical journals. The medical hierarchy feared that making these facts public knowledge would encourage, and even be seen to condone, alcohol abuse.

In the late 1950s the scientists conducting the Framingham Study in Massachusetts (see Section 3.3) discovered that moderate drinkers were less likely to die from heart disease. Carl C. Seltzer, who was one of the principal investigators, describes submitting their original findings to their federal granting body in Washington in order to obtain clearance for publication. To his surprise, they forbade its publication on the grounds that it might give the wrong message to the always-vulnerable American public. Truth took a back seat to the political stance that science could only be used to discourage drinking. The results were published years later, and the fact that alcohol can promote cardiovascular health is no longer disputed. Such censorship merely slowed down the acceptance of this view (2).

The last 20 years has seen a plethora of medical papers being published showing the medicinal virtues of consuming alcohol, and especially wine in moderation. This has come about due to the pressure of the pro-alcohol medical lobby, backed up by their

research papers, which they have been endeavouring to publish in reputable medical and scientific journals. No longer could the medical journal editors say no to their learned medical colleagues; especially when they were some of the world's leading epidemiologists, and their research was showing significant health benefits from *oenotherapy*; as the use of wine as a medicine has become known.

Because there have now been so many quantitative scientific papers published after the "flood gates had opened", this thesis will concentrate on the main papers from Australia and overseas and on the main books written on the subject - including some by doctors and others by wine writers and journalists.

Research papers on alcohol can be divided into two main groups. The first group investigated alcohol consumption in general and divided their populations into abstainers, moderate drinkers and heavy drinkers and abusers. The second group focused on the form of the alcohol, dividing it into its constituent groups of beer, wine and spirits drinkers, as well as consumption levels.

The main examples of the first group include the 'Harvard Nurses Health Study' (3) by Professor Charles Hennekens the Professor of Epidemiology at Harvard University; the 'Health Professionals Follow-up Study' (4) by Dr. Eric Rimm, epidemiologist at Harvard University; the 'Auckland Heart Study' (5) by Dr. Rodney Jackson, epidemiologist at Auckland University; the 'British Doctor's Study' (6) by Sir Richard Doll, questionably the world's leading epidemiologist from Oxford University; the 'Busselton Study' (7) - Australia's own equivalent of the famous 'Framingham Study' by Dr. Kevin Cullen and the Dubbo Study (8) by Professor Leon Simons Associate

Professor of Medicine at the University of New South Wales and Head of the Lipid Research Department at St. Vincent's Hospital Sydney, N.S.W.

Results of these studies showed significant health benefit (8) from moderate consumption of alcohol, with conclusions such as: "These findings support the hypothesis that the inverse relation between alcohol consumption and risk of coronary disease is causal" (4).

"Among British men in middle or older age the consumption of an average of one or two units of alcohol a day is associated with significantly lower all cause mortality than is the consumption of no alcohol, or the consumption of substantial amounts" (6).

"Alcohol intake in the Dubbo elderly appears to be independently associated with a significant increase in life expectancy" (8).

A divergent view to those found in these studies has been expressed by the British epidemiologist Dr. A.G. Shaper (9). He argues that the group of alcohol abstainers and low consumers in these studies is typically contaminated with subjects who have reduced alcohol consumption because of pre-existing disease. He argued that these former heavy drinkers skewed the morbidity and mortality figures of the non-drinker category in favour of the moderate drinker category.

All modern researchers are aware of this potential problem and allow for it in their research methodology. Such studies have consistently demonstrated the health benefits of moderate alcohol consumption.

Dr. Eric Rimm, for example, concluded that "Our findings provide additional evidence to support the hypothesis that moderate alcohol consumption reduces the risk of coronary artery disease. The inverse association was not an artefact due to pre-existing disease or differences in dietary habits. The magnitude of the association, consistency with results from other studies, and plausible biological mechanisms strongly suggest that the inverse association between moderate alcohol intake and risk of coronary disease is causal" (4).

Also, Dr. Rodney Jackson's research was expressly designed to confirm or deny Shaper's 'challenge'. In his 1991 paper, Jackson notes that the purpose of the research was "To investigate the hypothesis that the apparent protective effect of habitual alcohol consumption on coronary heart disease is due to drinkers at high risk of coronary disease becoming non-drinkers" (5). The conclusion states that "The results support the hypothesis that light and moderate alcohol consumption reduces the risk of coronary heart disease. This protective effect in this population was not due to the misclassification of former drinkers with a high risk of coronary heart disease as non-drinkers" (5).

The following year a landmark paper was published that gained instant attention and fame when its author Professor Serge Renaud, Head Epidemiologist at the Nutrition and Vascular Physiopathology Research Unit in Bordeaux France, was interviewed on the popular television current affairs program "60 minutes" in the U.S.A. This became known as the 'French Paradox' paper (10). The paradox is explained in its introduction: "In most countries, high intake of saturated fat is positively related to high mortality

from coronary heart disease. However, the situation in France is paradoxical in that there is high intake of saturated fat but low mortality from coronary heart disease. This paradox may be attributable in part to high wine consumption". The paper then goes on to explain the possible pathophysiological mechanisms for this. These will be examined in greater detail in the main body of this thesis.

The first research paper to divide alcohol into its constituent groups of beer, wine and spirits (i.e. the second main group of alcohol research papers as discussed earlier) has become known as the 'Copenhagen Study' (11). This comprehensive study involved 6051 men and 7234 women aged 30 to 70 over a 10 to 12 years, with follow-up of mortality. It showed a significant reduction in mortality from all causes for moderate wine drinkers compared with beer and spirits drinkers. The risk of dying steadily decreased with an increasing intake of wine - from a relative risk of 1.00 for the subjects who never drank wine to 0.51 (95% confidence interval 0.32 to 0.81) for those who drank three to five glasses a day. Intake of neither beer nor spirits, however, was associated with reduced risk. For spirits intake the relative risk of dying increased from 1.00 for those who never drank to 1.34 (1.05 to 1.71) for those with an intake of three to five drinks a day. The effects of the three types of alcoholic drinks seemed to be independent of each other, and no significant interactions existed with sex, age, education, income, or body mass index. Wine drinking showed the same relation to risk of death from cardiovascular and cerebrovascular disease as to risk of death from all causes.

Low to moderate intake of wine was associated with lower mortality from cardiovascular and cerebrovascular disease and other causes. Similar intake of spirits implied an increased risk, whereas beer drinking did not affect mortality.

Some researchers have criticised these findings claiming that the health benefits of moderate wine consumption could also have been due to the fact that wine drinkers are usually in the higher socio-economic category, which has more awareness of health issues, a better diet and engages in less smoking. However, Professor Serge Renaud has responded that in France it is the lower socio-economic group who smoke heavily, have a high saturated fat diet and that drink, and they still have a coronary heart disease rate one third that of the U.S.A. So it is a function of the wine, not the socio-economic group.

Although much has been written about the effects of alcohol on the body, relatively little has focused separately on the effects of wine, and most writing on alcohol is devoted to the effects of its abuse. This thesis is concerned with the consumption of wine in moderation and its health benefits, not about the abuse of alcohol in general. Alcohol abuse is not condoned under any circumstances. Thus, the literature on this latter topic falls outside of the bounds of this research.

The most prolific modern day writer about the health benefits of wine was the late Dr. Salvatore Lucia, Professor of Medicine at the University of California School of Medicine. His first book was 'Wine as Food and Medicine' (12), published in 1954 and his last book was 'Wine and Your Well-Being' (13), published in 1971. Other books included 'Wine and the Digestive System' published in 1970 and his famous 'A History

of Wine as Therapy' published in 1963 and already discussed in the 'Ancients' section of this Literature Review. In these books Lucia describes the health effects of wine consumption in moderation on diverse array of the systems of the body, its use in relation to numerous diseases, such as infections and diabetes mellitus, as well as how it may be used as a vehicle for medication. His books are helpful and interesting, but they lack the benefit of the extra knowledge generated by the research of the past 10 to 20 years, which provide up-to-date physiological explanations for the benefits of wines.

Three other noteworthy books about wine and health have been written recently. Jancis Robinson is one of the World's leading wine writers and a Master of Wine. Because of her extensive exposure to wine, she wanted to know more about what affects wine might have on her body. In her book 'The Demon Drink' (14), published in 1988, Robinson discusses the benefits of drinking wine in moderation in her chapter "Alcohol can be good for you". She sums up her views by stating (opposite the title page) "...hoping that this book encourages a move towards quality rather than quantity" i.e. moderation not abuse gives benefit. A brief history of wine (and alcohol in general) as a medicine is provided in the chapter entitled "Drink Throughout the Ages". Sadly, no mention is made of Australia's Wine doctors.

Dr. E. Maury, a French Homeopathic doctor, wrote a book entitled 'Your Good Health - The Medicinal benefits of Wine Drinking' (15). First published in French in 1989, the English edition was first published in 1992. In the book Dr. Maury prescribes a different wine for every ailment - all French of course. Again, the history of wine as a medicine is given only brief coverage, with a bias towards France and with no mention of Australia's contributions.

In 1997 Dr. Thomas Stuttaford, the Medical Correspondent for the Times published 'To Your Good Health' (16). The dedication "To all moderate drinkers" in the front sums up the tone of the book. Again, Dr. Stuttaford's book covers the effects of alcohol on most of the body's systems. He provides a brief history of alcohol in a chapter entitled 'A Brief History of Alcohol' and in another entitled 'Alcohol as Medicine'. The history of wine as a medicine in Australia is mentioned, which is an advance on all the other books cited above, although only two pages are devoted to this.

In summary, it can be seen that little has been written on the full history of wine as a medicine, especially anything incorporating the latest research findings, and virtually nothing has been written (except for the two pages in Dr. Suttaford's book) about the role of Australia in this history. This thesis will correct this situation.

2. RESEARCH METHODOLOGY

2.1 INTRODUCTION

This thesis will use a multiple methods approach using a combination of both qualitative and quantitative research methods. This is necessary because in order to cover the full scope of this thesis' subject, not only will qualitative research methods such as historiography and case study methods have to be used, based on Thomas Carlyle's (British Historian 1795-1881) view of history as being based on biography, but all the latest medical epidemiological quantitative research findings about the medicinal value of alcohol and wine in moderation will need to be examined. It will be presented within a post-modern framework with an examination of the social and ethical implications of the consumption of wine in moderation and its effects on health.

Sociology, according to Gerhard Lenski, is "the study of human societies" (1) and human groups. Lenski's study resulted in a growing awareness that humans are destroying their home and thus eventually themselves. Hence the need for the expansion of the definition of sociology to social ecology to encompass the inter-relationships of the needs of the environment, the community and the individual.

Sociology has been criticised for calling itself a science because it cannot experiment as science can and hence cannot predict an outcome. As such it is subject to the criticism of observer bias. Samuel Koenig, however, has referred to science as "organised commonsense", and he noted that "the approach rather than any particular set of methods or techniques" should be used to determine whether or not any particular discipline could be regarded as a science. Such a scientific procedure "consists

primarily of objective observation followed by cautious interpretation of the observed facts. In so far as sociology does this it is a science" (2). Sociology primarily uses two scientific methods of investigation, namely observation and comparison, and as sociology develops and better understands the principles underlying human behaviour, and applies quantitative measurements to social phenomena, so it will be able to predict more accurately, thus fulfilling another criterion for being regarded as a science.

If sociology is the study of human societies and social ecology is the study of the inter relationships of these societies and the environment on the one hand and the individual on the other - what then is the purpose of society? That is the crux of the matter. Coming from a medical background as a doctor and medical historian, to me the purpose of a society is to increase the chances of that group of humans surviving (healthily) to reproduce and multiply their kind (3). This survivalist perception is the basis for all our human behaviour, from eating the right foods (including wine) to be healthy to survive, to wearing make-up and appropriate clothing to attract a partner to reproduce, to having law and order to provide a stable community environment in which to do all these things.

Humans are, however, animals, although highly sophisticated ones. The behaviour of male humans is dominated by the hormone testosterone. Males are to some extent prisoners to the effects of testosterone, which drives their capacity for aggressive behaviour to fight and dominate as well as driving their libido. We sniff, then taste food (and wine), just as animals do to see if it is contaminated or fresh and thus fit to eat. These primitive, mid-brain functions, though tempered by the higher centre cortex, are still basic to our instincts and an integral part of our survivalist strategy.

Survivalist theory encompasses the law of natural selection, as proposed by Charles Darwin (1809-1882) and Alfred Russell Wallace (1823-1913). In 1864, the English sociologist and philosopher Herbert Spencer (1820-1903) used the phrase "survival of the fittest" in his work "Principles of Biology" to characterise this law. According to this perception, societies have to adapt and change according to circumstances in order to survive. Thus, a differentiating and developing or evolving society with lots of variety is preferable to a monotonous and static one. So the form of organisation known as society is a mode of adaptation to increase that society's chances of survival and reproduction.

2.2 QUANTITATIVE ANALYSIS

This thesis will evaluate current quantitative scientific research into the effects on humans of consuming alcohol, and especially wine, in moderation. Over the last decade there have been many scientific and medical research papers showing the medical benefits of consuming alcohol and wine in moderation and explaining the biochemical mechanisms for those benefits. One of the greatest tools used by the physicians of the past was that of observation. The medical profession over the past 5,000 years has observed the medical benefits of consuming wine in moderation, but was unable to offer valid biochemical explanations due to the lack of scientific knowledge. Today's medical profession has the advantage of modern scientific analytical skills, which allow the pathophysiology of these benefits to be examined, explained and understood.

Papers from the leading medical journals, such as the Australian Medical Journal, the British Medical Journal, the Lancet, the New England Journal of Medicine, Epidemiology and the Australian and New Zealand Journal of Medicine, will be reviewed to document the medicinal benefits of alcohol and wine consumption in moderation.

Articles in the British journal A.I.M. ('Alcohol in Moderation', which promotes the sensible and responsible consumption of alcohol), of which I am the Australian representative on the International Editorial Board, will also be reviewed for findings of the pro-alcohol and wine in moderation authors.

2.3 QUALITATIVE ANALYSIS

Six complementary qualitative methodologies will be used in this research project.

Qualitative research is a field of research that is interdisciplinary and transdisciplinary, covering the humanities and the social and physical sciences. "It is multi paradigmatic in focus. Its practitioners are sensitive to the value of the multi method approach" (4). A qualitative researcher must use multiple methodologies, hence they become a bricoleur or Jack of all trades or professional do-it-yourself man. The result of this research is a Bricolage or integrated solution(s) to a problem approach.

According to Nelson "The choice of research practices depends upon the questions that are asked, and the questions depend on their context" (5) and according to Brewer and Hunter: "Qualitative research is inherently multi-method in focus" (6) reflecting on attempts and desires to find an in-depth understanding of the question.

2.3.1 HISTORICAL METHOD

Koenig describes historical method as "the study of events, processes, institutions of past civilisations, for the purpose of finding the origins or antecedents of contemporary social life and thus of understanding its nature of workings" (7).

Historiography will be one of the main qualitative methods used in this thesis. Since 1986 I have been conducting research on all the doctors in Australia who have established vineyards and on the history of wine as a medicine through the ages. This research was largely bibliographic, drawing on documents in the Mitchell Library at the

State Library of N.S.W., the Medical History Library at the Royal Australian College of Physicians in Macquarie Street, Sydney, the Mortlock Library at the State Library of South Australia, the Battye Library at the State Library of Western Australia, and on the works of fellow medical historians such as Dr. Eric Skovenberg of Denmark, Dr. Salvatore Lucia of U.S.A., Dr. Peter Burke of Australia and Professor D.W. Beaven of New Zealand.

This research has resulted in the publication of several books namely 'The Vineyards of Sydney - Cradle of the Australian Wine Industry' (1990), 'Lindeman - Australia's Classic Wine Maker' (1993), 'Penfold - Time Honoured' (1994), 'Australia's Wine Doctors' (1994), 'Leo Buring - Australia's Wine Authority' (1996), my 'Wine and Health Diaries' (1998 onwards), 'Wine and Health - A New Look at an Old Medicine' (2000) and 'Dr. Philip Norrie's Advice on Wine and Health - Thinking and Drinking Health' (2000). It has also resulted in the publication of several articles including 'Some Most Unusual Vineyards - The Vineyards in Australia's Lunatic Asylums' in the Australian Journal of Psychopharmacology (1994), 'Wine and Health' a booklet for McWilliams Wines (1994), 'Australia's Three Leading Wine Doctors' in the Royal Society of Medicine's Journal of Medical Biography (1995) and 'Corrupt Captains and Convicts - or why Australia has so many Wine Doctors' (1998) in Winestate magazine.

This research has also led to two Masters Degrees by thesis: 'A Study of Original Documents on Viticulture in early N.S.W. and the role of the Macleay Family 1788 to 1883' for a Master of Science with the Department of History and Philosophy of Science at the University of Sydney (1992); and 'Leo Buring, his life and his influence

on Australia's wine industry' for a Master of Social Science (Honours) in the School of Humanities and Social Sciences, Faculty of Arts at Charles Sturt University (1998).

This thesis will build on this previous work.

Many earlier historians were mostly concerned with names and dates, which is of limited relevance to gaining a deep understanding of society and social processes. Modern historians are generally more concerned with basic social patterns and processes that have contributed to historic events. Consequently there is developing a greater relationship between history and sociology.

2.3.2 CASE STUDY METHOD

Case study methods involve using such research resources and skills as interviews, questionnaires, documents and life histories to gain a profile of the person(s) or event that is being studied. The case is a unique "functioning specific"(8) according to Robert Stake, while Louis Smith describes it as a "bounded system"(9) that results in a product that may be called a "case record"(10) according to Lawrence Stenhouse, more so than a case study. As indicated above (in the Historiography section), I have carried out case studies on Australia's Wine Doctors and, as a Doctor myself, was also able to conduct participant observations. In 1986 I became an Australian Wine Doctor when I established my own vineyard, which is called 'Pendarves Estate' at Belford, in the lower Hunter Valley to the north of Sydney. This has given me greater insight into the trials and tribulations encountered by Australia's wine doctors when they established their vineyards.

The case study part of this research on Australia's wine doctors will provide details of who they are, why they established their vineyards (including the medical reasons) and why they are unique to Australia - again for historical and medical reasons. Because this case study is of interest in itself, showing the unique use of wine as a medicine by Australia's early doctors, it may be regarded as an 'intrinsic' case study according to Robert Stake, as distinct from the other types of case study namely 'instrumental' and 'collective'.

2.3.3 BIOGRAPHICAL METHOD

Biographical methods involves the "written record of the life of an individual", according to the Oxford English Dictionary. (11) Leon Edel in his 1984 work 'Writing Lives' (1984) described it as "Biographers write lives" (12) and Thomas Carlyle said in 1839 "History is the essence of innumerable biographies"(13), showing the importance he placed on biographies in history.

In this Thesis the biographies of several doctors who advocated the use of wine as a medicine will be presented. These will include Hippocrates, Dr. William Redfern and Dr. Henry John Lindeman. The descendants of Dr. Lindeman, for example, will be interviewed to provide more in-depth background material on the subject in question.

The social scientist's perspective of biography is that it should be more than just the telling of the story of someone's life. It also requires analysis, interpretation and explanation. Becker in 1966 and 1970 has argued that life histories are part of a

"mosaic" of community and institutional investigations. Denzin refers to "interpretive biography" (14) or the creating of literary and narrative accounts and stories of lived experience. Bertaux, who in 1981 edited a collection of essays called 'Biography and Society: The Life History Approach to the Social Sciences', claimed that through this approach Sociology was reclaiming one of its important roots.

2.3.4 GROUNDING THEORY

Grounded Theory methodology was first proposed by Glaser and Strauss in 1967 in their book 'The Discovery of Grounded Theory'. The purpose of the theory was to contribute towards "closing the embarrassing gap between theory and empirical research"(15), hence making legitimate careful qualitative research, which at that time was of low status because of its inability to be adequately verified. The theory was called grounded because it was a theory "generated and developed through interplay with data collected during research projects"(16) Strauss and Corbin in 1994, or as Glaser and Strauss in 1967 suggested, "a general method of (constant) comparative analysis" hence its alternative name is the "constant comparative method" (17).

Grounded theory can be easily adapted to a diverse range of subjects because it is a general methodology and way of thinking about and conceptualising data. In this thesis grounded theory will be used to explain why doctors used wine as a medicine.

2.3.5 COMPARATIVE METHOD

Comparative method involves the comparing of diverse sub groups within a larger group. In this thesis the comparative method will be used extensively to compare abstainers, moderate drinkers and heavy drinkers and abusers of alcohol within the broad spectrum and range of alcohol consumption. Another way the comparative method will be used is to compare the three different types of alcoholic beverages: namely wine drinkers, beer drinkers and spirits drinkers within a level or band of alcohol consumption, but mainly moderate consumers of alcoholic drinks, as this is the most healthful level of alcohol consumption.

2.3.6 ACTION RESEARCH

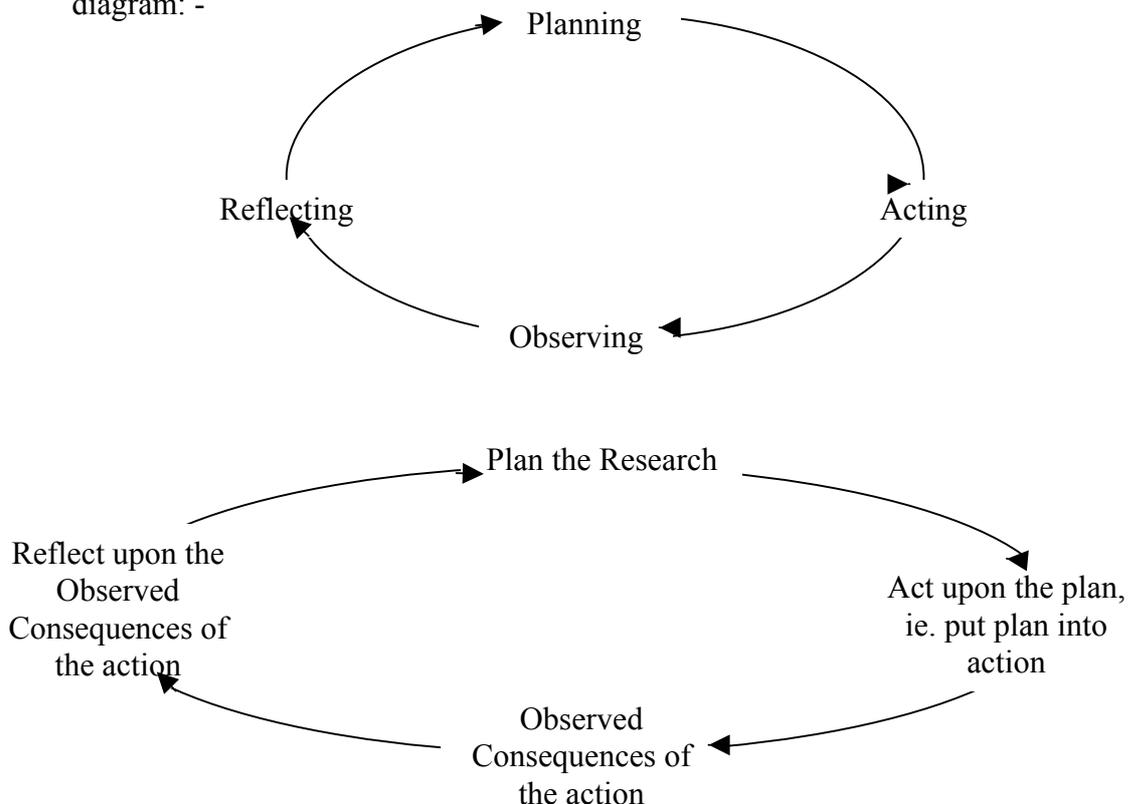
The term “Action Research” was first used by Kurt Lewin in the late 1930's. It was a new form of research that is very applicable to this thesis because one of its purposes is to convert the research about how good wine is for you in moderation into action, so that the good health and the preventative health message is disseminated as far and as wide as possible.

"Action research is social research carried out by a team encompassing a professional action researcher and members of an organisation or community seeking to improve their situation. Action research promotes broad participation in the research process and supports action leading to a more just or satisfying situation for the stakeholders.

Together, the professional researcher and the stakeholders define the problems to be examined, co-generate relevant knowledge about them, learn and execute social research technique, take actions, and interpret the results of actions based on what they have learned.

... “the first step professional action researchers and members of a community or organisation take is to define a problem that they seek to resolve. They begin by pooling their knowledge. Action research democratizes the relationship between the professional researcher and the local interested parties" (18).

Lewin described action research as "a spiral of steps" (19), as shown in the following diagram: -



“Action Theorists are concerned with both human action and interaction, which is why this perspective is often referred to as “interactionism”. “Interactionists” seek to understand the process of interaction between individual human beings ... (beginning) from the assumption that humans attach meaning to their actions, and that this meaning is a central aspect of their action Understanding of action requires an interpretation of the meanings that human actors give to their activities" (20).

Social actionists regard society "as the product of human acting" and “they stress the meaningfulness of human behaviour”. They take an opposite view to that of structural sociologists, who regard "human behaviour as largely determined by the structure of society" (21).

More succinctly, "Action Science is an inquiry into how human beings design and implement action in relation to one another.... It is a science of practice" and "action scientists engage with participants in a collaborative process of critical inquiry into problems of social practice in a learning context” (22).

The various ways to "action" the research for this thesis will be discussed in more detail later in the thesis.

SUMMARY

"The use of multiple methods or triangulation reflects an attempt to secure an in-depth understanding of the phenomenon in question" (23). In other words, the combination of multiple qualitative methods, empirical materials, perspectives, observations, and quantitative methods is a strategy that adds rigor, breadth and depth to the investigation.

3. FINDINGS – CHRONOLOGY OF WINE AS A MEDICINE

(Modified from Dr. Salvatore Lucia's 1963 book "History of Wine as Therapy"). Following is a list of the significant dates in the history of wine and its use as a medicine.

First wine produced in Georgia and China (indigenous grapes) ca. 7000 BC

MESOPOTAMIAN CULTURE

(ca. 5000-1400 BC)

Introduction of Wine ca. 4000 BC

Invention of writing as pictograms ca. 3300 BC

First representation of wine drinking in Standard of Ur ca. 3000 BC

Use of wine as medicine as illustrated by Summerian Pharmacopoeia inscribed on a clay tablet at Nippur in cuneiform script ca. 2100 BC

ANCIENT CHINA

(ca. 3800 BC – 220 AD)

Ancient grey clay pottery wine cups ca. 3800 BC

Wines were incorporated in the materia medica and appeared as menstruums in the ancient Chinese writings.

Wine was used in libational ritual in the Chang Dynasty ca. 1766–1122 BC

Wine was used in sacrificial rituals in the Chou Dynasty ca. 1122–222 BC

EGYPTIAN CIVILIZATION

(ca. 3000 – 332 BC)

Ancient Egyptian medical papyri forebearers to the current known medical papyri	ca. 3000 BC
Earliest depiction of winemaking in the pictographs of the tomb of Ptah-Hotep at Thebes	ca. 2400 BC
Medical Papyri:	
Kahun	ca. 1900 BC
Edwin Smith	ca. 1650 BC
Ebers	ca. 1500 BC
Hearst	ca. 1500 BC
London	ca. 1350 BC
Berlin	ca. 1350 BC
Brugsch	ca. 1350 BC

BIBLICAL TIMES

(ca. 1220 BC – 70 AD)

Use of wines as sedatives, antiseptics and vehicles for other medicines is illustrated in the Sacred Writings:	
Talmud, written after	536 BC
Old Testament written before	400 BC
New Testament, first recorded	ca. 1st Cent. AD

ANCIENT INDIA
(ca. 2000 BC – 1000 AD)

Verdic period: ca. 2000-200 BC
Soma, the supreme deity of healing was conceived as a being in liquid form. In the Vedas the healing potential of wine was made equal to the power of Soma.

Brahmanic period: ca. 200 BC
Use of wine in medicine is illustrated in the Charaka Samhita ca. 1000 AD

EARLY GREEK MEDICINE
(ca. 900 – 100 BC)

Homeric Times:
In the Iliad and the Odyssey wine was described as antiseptic and sedative and as a staple food ca. 850 BC
Hesiod described wine as nutrient and tonic 8th Cent. BC

Hippocratic Times: ca. 450–300 BC
Hippocrates used wine as an antiseptic, diuretic, sedative and menstruum as described in his medical text “Regiment” ca. 460–370 BC
Diocles of Carystus wrote on the use of sweet wines in medicine 375 BC
Theophrastus of Eresus described plant embellished wines 372–287 BC
Mnesitheus wrote of wine in “Diet and Drink” 320–290 BC

The Alexandrians: CA. 300–50 BC
The centre of medicine moved to Alexandria. The judicious use of wines in therapeusis was stressed in the teachings of the medical school founded by Erasistratus 300-260 BC
Nicander used wine as a menstruum for his theriacs and Alexipharmics 190–130 BC
Mithradates, King of Pontus, used wine as the menstruum

for his antidote Mithradatium	132–63 BC
Hikesios wrote a treatise and commentary on wine “De Conditura Vini”	ca. 1st Cent. BC
Apollonius of Citium wrote on the medicinal value of European wines in a letter to Ptolemies	ca. 81–85 BC

GREEK MEDICINE IN ROME (ca. 100 BC – 100 AD)

With the establishment of the Greek physicians in Rome, the therapeutic use of wine became a vital question. Physicians who adopted the medical use of wine were known as *Physikos oinodotes*:

Cato the Elder described wine as a medicine	234–149 BC
Asclepiades, leader of the wine-prescribing physicians	
Zopyrus used wine as the menstruum for a mithradatium called “Ambrosia”	ca. 80 BC
Menecrates of Tralles used wine clinically	ca. 1st Cent. BC
Celsus wrote on wine as a medicine in “De re Medicina”	25 BC–37 AD
Pliny the Elder described therapeutic uses of wine in “Naturalis Historia”	23–79 AD
Columella emphasised wine as a medicine	4 BC–65 AD
Sexitus Niger advocated the use of natural wine in medicine	ca. 40 AD
Dioscorides recommended wine as <i>Materia Medica</i> for many diseases in “De Universa Medicina”	ca. 77 AD

THE ERA OF GALEN (ca. 100 – 400 AD)

After the death of Asclepiades, independent medical schools were established.

The School of Eclecticicism:

Athenaeus of Attalia taught that wine in small doses rouses

the “pneuma” and restores vitality	ca. 41–54
Galen used wine based mixtures called Galenicals and wrote about wine as a medicine in “De Sanitate Tuenda” (Galen’s Hygiene)	ca. 131–201
Aretaeus of Cappadocia recommended Italian wines	2nd–3rd Cent.
Athenaeus of Naucratis, the encyclopaedist, recorded valuable information on the medicinal uses of wine in “The Deipnosophists”	3rd Cent.
Oribasius recommended wine as a medicine	ca. 325–403
Roman generals such as Julius Caesar recommended wine for their soldiers to increase their strength, preserve good health and prevent dysentery.	

BYZANTINE ERA

(ca. 400 – 700 AD)

Following the transfer of the Roman capital to Byzantium, the centre of learning became displaced but the teachings of Galen prevailed.	330
Aetius of Amida detailed the medical uses of wine in the “Tetrabiblion”	502–575
Alexander of Tralles followed the tradition of the wine-prescribing Physicians	525–605
Paul of Aegina recognised as the link between Greek and Arabic medicine	625–690

ARABIC PERIOD

(ca. 600 – 1300 AD)

Arabic culture influenced western thought for many centuries after the death of Mohammed in:	632
And the conquest of Alexandria in:	641
Greek medicine re-introduced into Europe via Moors' invasion of Spain	711
The first apothecary shop established at Bagdad	745
The Precepts of Galen prevailed and the use of wine in medicine continued:	
Rhazes wrote on the washing of wounds with wine	860–932
Haly ben Abbas discussed wine as a medicine in “Almaleki”	ca. 10th Cent.
Avicenna promulgated rules for the proper use of wine in the Canon of Medicine	980–1032
Mansur the Great discussed wine as a pharmacologic Menstruum	ca. 10th Cent.
Avenzoar adhered to the emphasised hippocratic teaching	ca. 1162
Maimonides elaborated on the medicinal value of wine in “De Regimine Sanitatis”	1135–1204
Averroes applied Aristotelian teaching to medicine	ca. 1198
Albucasis recommended wine as an antiseptic in his treatise on surgery	936–1013

THE SCHOOL OF SALERNO

(ca. 1050 – 1300 AD)

The first lay medical school in Europe established at Salerno and included female students such as Mother Trotula of Salerno with Nicholas of Salerno as its Director	10th Cent.
African	1027–1087

The “Regimen Sanitatis Salernitanum” illustrated the therapeutic uses of wine	ca. 11th Cent.
Ugo Borgognoni used wine as an antiseptic	Died ca. 1258
Theodorico Borgognoni advocated the use of wine as an antiseptic	1205–1296
Salicet used strong wine as an antiseptic in surgery	ca. 1210–1277
Bruno da Longoburgo achieved wound antisepsis with wine	ca. 1300
Lanfranc lapsed back into the practice of suppuration (Laudable Pus)	ca. 1306

LATE MIDDLE AGES
(ca. 1300 – 1543 AD)

The physicians of the period began to realise the importance of the treatment of disease based on clinical experience.

Arnald of Villanova established the therapeutic use of wine in “Liber de Vinis” and popularised Aqua vitae	ca. 1235–1311
Henri de Mondeville advocated the use of wine as a “wound drink”	1260–1320
Guy de Chauliac used wine in the treatment of wounds and as a mouth wash	1300–1368
John of Arderne employed wine as a menstruum	1307–1377
Hieronymus Brunschwig ascribed miraculous healing powers to “Aqua vitae composita”	ca. 1450–1533
The “Antidotarium Nicolai” printed by Nicholas of Salerno which listed 150 Galenicals lost to European medicine but kept by Arab physicians	1471
Paracelsus known as the father of modern pharmacology stressed the tonic value of wine and invented the word alcohol	1493–1541

BEGINNINGS OF MODERN MEDICINE

(1543 – ca. 1850 AD)

The publication of “De corporis humani fabrica” by Andreas Vesalius marked the beginning of an important era in medicine, an era which witnessed many departures from tradition and in which the foundations for the scientific age were laid.	1543
Ambroise Pare used wine as a tonic and to dress wounds	1510–1590
Richard Wiseman wrote on the medicinal uses of wine in his textbook of surgery	1622–1676
Sir John Haryngton published the first English translation of the “Regimen Sanitatis Salernitanum”	1607
Era of dispensatories and pharmacopoeias established by Valerius Cordus	1546
Wine as official therapeutic agents depicted in:	
The Pharmacopoeia of London	1618
The Pharmacopoeia of Amsterdam	1636
The Pharmacopoeia of Paris	1639
The Pharmacopoeia of Spain	1651
The Pharmacopoeia of Brussels	1671
The Complete English Dispensatory	1741
The Pharmacopoeia of Russia	1778
Codex Medicamentarius of France	1819
The Pharmacopoeia of the United States	1820
The inclusion of many of the theriacs in the dispensatories and pharmacopoeias led to a polemic, which resulted in the final demise of the theriacs.	
DeDiemerbroeck published his defence of the theriac	1646
Dr Hodges recommended sherry-sack as a preventive of the plague	1665

Wine remains an important therapeutic agent:

An anonymous author (a fellow of the Colleges) published an essay on the preference of wine to water	1724
Heberden gave the final blow to the theriacs in “Antitheriaka”	1746
Loebenstein-Lobel published a treatise on the uses and effects of wine	1817
Henderson published “A History of Ancient and Modern Wines”	1824
Charcot discussed the clinical uses of wine in “Traite de Medecine”	1825
The Pharmacopoeia Universalis of Heidelberg listed 175 wines	1835
The London Pharmacopoeia included a description of wines and their medicinal uses	1835
The Pharmacopoeia Universelle of Paris listed 164 wines	1840
The new edition of the US Pharmacopoeia added port and sherry	1850
McMullen published a “Handbook of Wines”	1852
Mulder published a chemical analysis of the constituents of wine	1857

AMERICAN ERA

(1610 →)

Dr Lawrence Bohune	Dutch physician who was first known in USA – in Virginia using native grapes	1610
Dr Robert Child	English physician tried to grow French vines in Massachusetts – experiment abandoned	1641
Dr Andrew Turnbull	A Scottish physician, tried to grow a vineyard in Florida – failed due to disease	1766
Dr Philip Mazzei	An Italian physician planted a vineyard of Italian vines next to Thomas Jefferson in Virginia	1773
Dr D N Norton	Developed a hybrid vine called Norton from	1830

	native American vines and European <i>Vitis vinifera</i> vines (in Virginia) to protect the European vines from America's numerous vine diseases and to improve the poor quality American native vines	
Dr Robert Valk	Of Flushing, Long Island first to deliberately cross an American native vine and European vine (prior to this, hybrids were accidental crosses)	1845
Dr George Engelmann	A German doctor, of St. Louis Missouri was the first to conduct a thorough and scientific study of native American vines	
Dr Rober Underhill	Pioneered developing the Hudson River Valley in New York as an important Viticultural area	
Dr Stephen Mosher, Louis Rehfus and John Aston Warder	Helped develop the Cincinnatti region as the capital of American winemaking	After 1830's
California planted with <i>V. vinifera</i> by Spanish Franciscan missionaries (was annexed to USA from Mexico in 1850)		
Dr John Marsh	Developed a vineyard on slopes of Mt Diablo near San Francisco	
Dr Edward Bale	Developed a vineyard at St Helena	
Dr Victor Faure	A French doctor, developed a vineyard in Sonoma Valley	
Dr Leonce Hoover	A Swiss doctor, developed a vineyard near Los Angeles	1849
Dr George Crane	A USA doctor, developed a vineyard at St Helena (he was the man "who proved how good Napa wine could be")	1861
After Prohibition (1920-1933) the USA wine industry had to be reinvented and doctors helped promote wine. Andre Simon's Wine and Food Society established		1934
The Medical Friends of Wine founded in San Francisco		1938
Dr Salvatore Lucia, head of the Department of Preventative Medicine at the University of California School of Medicine, writes many books on wine, health and history		1960's
After 1960's, doctors developed many vineyards in California, Ohio, Indiana, Missouri and Kansas		

AUSTRALIAN ERA

(1787 ➡)

Surgeon White uses wine as a main medicine for convicts in First Fleet to Australia	1787
Dr Redfern letter to Governor Macquarie about use of wine as medicine for convicts	1814
Wine used daily in convict ships and later migrant ships bound for Australia	1815
Dr Redfern – first Australian medical vigneron or wine doctor with planting Campbellfields vineyard	1818
Dr Lindeman - founded Lindeman Wines	1843
Dr Penfold - founded Penfold Wines	1844
Dr Kelly - founded Hardy's Wines	1845
Dr Angove - founded Angoves Wines	1889
Lunatic asylum vineyards in Australia began	1870
Dr Lindeman letter to NSW Medical Journal "Wine as a Therapeutic Agent and why it should become our national beverage."	1871
Dr William Cleland speech "Some remarks upon wine as a food and its production".	1880
Dr Thomas Fiaschi Lecture "The Various Wines used in Sickness and Convalescence".	1906

THE MODERN EPOCH

(ca. 1850 ➡)

The experimental method in physiology introduced by Claude Bernard	1813-1878
Scientists became absorbed in the study of alcohol and alcoholic beverages, including detailed studies of wine:	
Claude Bernard studied the effect of pure alcohol on digestion	1857

Pasteur described fermentation	ca. 1857
Trousseau discussed the medical uses of wine in “Clinique Medicale”	1861
Dr Anstie published his comprehensive work on the therapeutic uses of wine	1870
Parkes and Wollowicz published the first study on the physiological effects of wine	1870 – 71
Carles investigated the iron content of wines	1880
Buchner published the first comparative study detailing the effects of wine, beer and alcohol on the stomach	1882
Alois Pick published his findings on the bactericidal effects of wines	1892
Krautwig and Vogel published a study of physiological effects of various alcoholic beverages on respiration	1893 – 1897
Chittenden and co-workers investigated the effects of wines and spirits on the alimentary tract	1898
Wendelstadt published his findings on the effect of wines on respiration	1899
Benedict and Torok investigated the role of wine in diabetic diets	1906
Neubauer published findings on the use of wine in diabetes	1906
Kast reported on gastric digestion and the effect of wine and alcohol on the diet	1906
Sabrazes and Marcandier published their results on the bactericidal properties of wine	1907
Pavlov demonstrated the appetite-stimulation effect of wine	1910
Carles reported on the diuretic action of wines	1911
Carlson published his findings relative to the effects of wine on hunger	1916
Sir Edward Mellanby published findings on the physiological and dietetic effects of alcohol and alcoholic beverages	1919
Koutetaladze isolated an amine, a coronary stimulant, from wine	1919
Haneborg investigated the effect of alcoholic beverages on digestion	1921
Pearl first to prove in Alcohol and Longevity – that moderate drinkers live longer	1926
Lucille Randoin published findings on vitamin content of wines	1928

Loeper and co-workers reported on the effects of wine on the liver	1929
Winsor and Strongin reported on the effects of wine on salivary digestion	1933
Soula and Baisset investigated the effect of wine on the blood sugar level	1934
Fessler and Mrak reported on the effects of wine on urinary acidity	1936
US Dispensatory deleted all wines	1937
Remlinger and Bailly reported on bactericidal effect of wines	1938
Flavier demonstrated nutritionally important amounts of vitamin B in wines	1939
Morgan reported on vitamins in wine	1939
Newman published findings on the absorption of wine	1942
Ogden studied the influence of wine on gastric acidity	1946
Goetzl and co-workers reported on wine as an appetite stimulant	1950 – 53
Lolli and co-workers reported on the relation between wine in the diet and the carbohydrate intake	1952
Castor reported on B vitamins in wines	1952
Flanzy published a study of the comparative physiological effects of wine and alcohol	1953
Gardner presented findings on bactericidal property of wines	1953
Hall and co-workers reported on the effect of wine on cholesterol metabolism	1957
Engleman published findings on the relationship between wine and gout	1957
Macquelier and Jensen reported on the bactericidal activity of red wines	1960
Pratt and co-workers published findings on the grape anthocyanins	1960
Althausen and co-workers reported on the effect of wine on vitamin A absorption	1960
French Codex listed 7 wines	1960
Balboni discussed the role of wine in obesity	1961
Carbone reported on the relation of wine to cirrhosis of the liver	1961

Masquelier published findings on the polyphenols of red wine as a cholesterol-reducing agent	1961
Hennekens & Stamfer showed moderate alcohol consumption reduces coronary disease and stroke in women	1988
Rimm showed inverse relationship between alcohol consumption and coronary disease	1991
Renaud published the French Paradox	1992
Doll published British doctor heart study	1994
Groenbaek published Copenhagen Study – first to compare health effects of beer, wine and spirits	1995
Orgogozo showed moderate wine consumption reduced dementia	1997
Doll – one for the heart study showed society better off with alcohol in moderation than not due to lower total death rates, ie. beneficial effects outweigh harmful effects in moderation	1998
Bertelli showed resveratrol stimulates mapkinase, thus preventing neurodegenerative disease	1999
Pezzuto and Renaud show wine reduces cancer	1999

3.1 WINE AND HEALTH IN THE PAST

3.1.1 INTRODUCTION

In this section I will examine the history of the use of wine as a medicine from 5,000 years ago until recent times in Europe and America. It will not include Australia, which will be dealt with in the next section (3.2), or recent wine and health research, which is covered in the third section (3.3). This section is summarised in the preceding chronology, which excludes the Australian Era and more recent wine and health research.

Here I will show that the use of wine as a medicine has a very long history (making it man's oldest documented medicine), covering many cultures, making its use broad-based and wide. Each culture and ancient civilisation will be covered under a separate subheading.

Viticulture (grape growing) is now generally believed to have begun in Georgia, which lies on the eastern shore of the Black Sea, near the Caucasus Mountains, some 9,000 years ago (1), but new diggings in northern China have also shown evidence of wine making 9,000 years ago. From here viticulture spread to all the great wine loving cultures of the Middle East via the Tigris and Euphrates Rivers to Mesopotamia, then onto Persia. Each of these cultures has its own myth as to the origins of wine.

In Persia (today's Iran), for example, wine is claimed to have been discovered by the mistress of King Jamsheed, who was so fond of grapes that he had them stored in jars so

that he could eat them all year round. In one jar, one year, the grapes had fermented and were no longer sweet, so he assumed the new liquid in the bottom of the jar was poisonous and marked the jar accordingly. His mistress, so the story goes, had a bad headache and wanted to die, so she drank the liquid in the "poisonous" jar. The wine made her feel better, greatly easing her pain and let her fall asleep. Upon hearing of this miraculous cure, King Jamsheed tested the "poison" himself. He enjoyed the wine so much that the wonderful tonic was named the "Royal Medicine" (2). Wine was subsequently held in the highest esteem by the Persians because of this reputation as a cure. This may have given rise to the oldest desert proverb: "He that hath health has hope, and he that hath hope has everything". Thus, wine was the choice of the privileged.

In the ancient world life for most was short and harsh, so when something came along, such as wine, which had the power to make one feel good, and to even preview paradise in the hereafter, was understandably adopted with enthusiasm. Wine was stronger than ale, the alcoholic beverage of the poorer people from about 6,000 years ago; it could be kept for longer than ale, it improved with keeping and it tasted better; thus it was valued more highly than ale and continues to be so today. Later it was realised that wine aided digestion. Their diet was probably blander and harder to digest than today, particularly with their cruder cooking techniques. Thus, wine drinkers may have been better nourished, stronger, healthier, more confident and more capable than others. "It is no wonder that in many early societies the ruling classes decided that only they were worthy of such benefits and kept wine to themselves" (3).

Nine to ten thousand years ago, the domestication of animals and the cultivation of cereals took place in the Fertile Crescent, which stretched from Israel and Jordan, to Iran's Zagros Mountains. These are traditionally thought to be the precipitants of the formation of the first static food producing communities (instead of being nomadic communities), which lead to the creation of settlements and towns. The cultivation of the vine, and the need to stay in one place for long periods of time to make wine, could also be argued as another influence or cause for the establishment of the earliest static communities; because the first wine making was occurring at the same time just to the north, in nearby Georgia.

The wine would have helped elevate the peoples' mood and morale as well as help digest the rough, crude and coarse primitive breads made then.

3.1.2. MESOPOTAMIA

Armenian wine sellers to the south of Georgia spread the knowledge of wine down the River Euphrates to the cities of Uruk, Ur and later Babylon and Kisk (in today's Iraq) where the Sumerian culture began around 5,000 B.C. Here, as part of the fertile crescent, an arc of land from the Zagros mountains in Iran in the east to southern Israel and Jordan in the west, domestication of animals and plants began thus allowing people to settle in the one place permanently and hence develop cities. Grape vines were imported from Armenia, Syria and Lebanon into Sumer. The Sumerians had the earliest known form of writing. It consisted of stylised pictures called pictograms, drawn using a stylus on a moist clay tablet. The oldest known medical handbook, a Sumerian pharmacopoeia written on a clay tablet dated approximately 2,200 B.C. to 2,100 B.C.

excavated at Nippur in 1910, recommended the use of wine with various drugs as treatments for ailments, e.g. sweet wine with honey to treat a cough (4). "Tabatu" was a Babylonian medical drink made from water and small amounts of fermented fruit juice or wine. Thus, wine is our oldest documented medicine (5).

The Babylonian pharmacopoeia was extraordinarily extensive, and includes 250 medicinal plants, 120 mineral substances and 180 other drugs, as well as solvents and vehicles for the actual medicinal substances, called menstruum, such as various kinds of milk, honey, oil and wine (6).

The Sumerians also provided the first reference of a vineyard in literature in the Babylonian Epic of Gilgamesh, written about the time of King Hammurabi in the eighteenth century B.C. (7); plus the first representation in the 'Standard of Ur' of wine drinking. The Standard of Ur is a wooden panel inlaid with semi-precious stones that is now housed in the British Museum in London. It is 5,000 years old and depicts seated courtiers raising their wine cups to their ruler (8).

3.1.3 ANCIENT CHINA

The Chinese have been using alcoholic beverages as menstruums for over 6,000 years and pottery shards showing traces of grapes (indigenous) and rice dating from 7,000 BC have recently been found in Jiahu in northern China, thus making China, along with Georgia, the site of the World's first winemaking. The wine (Chiu) used could have been made from grains as well as indigenous grapes. The Shanghai Museum of Chinese History has many examples of wine vessels dating back to 3,800 BC for grey pottery

and 3,100 BC for red pottery and 1,600 BC for bronze. The bronze gallery has vessels for storing food, water and wine with the wine vessels accounting for the largest number. Chinese materia medica not only mixed plants and minerals with wine, but also selected parts of various animals that were thought to have virtues. At that time, Opium (not available to European medicine for many centuries) was also commonly mixed with wine.

Examples of uses where animal parts were mixed in wine include prescriptions to produce an abortion: rub a mixture of lizard's liver, skin of the cicada locust and wine onto the navel. Or the flesh of a pit viper was prepared by placing the snake in a gallon of wine they burying the sealed jar under a horse's stall for one year. The resultant liquid was a cure of apoplexy, fistula, stomach pain, heart pain, colic, haemorrhoids, worms, flatulence and bleeding from the bowel. Alcoholism could be cured by donkey's placenta mixed in wine, the liver of a black cat in wine for malaria, and to cure a bad cold - an owl was smothered to death, plucked and boiled, its bones charred and taken with wine (9).

The German medical historian Franz Hübötter spent 25 years studying in China and Tibet. In 1957 he published "Chinesisch-Tibetische Pharmakologie and Rezeptur". In this book nineteen of the eighty-seven prescriptions listed included wine (10).

Hübötter notes that these wines were from the European cultivated grape *V. vinifera* and not from grain or wild, indigenous grapes. *V. vinifera* was introduced into China by Chang Ch'ien during the second century BC, after he had learnt winemaking in Persia. Earlier wines would have been made from indigenous grapes because during the Chou

Dynasty (1,000 BC) red wine, which could only be made from red grapes, and not from grain was used in sacrifices because its colour was associated with blood. The wine was mixed with human blood and bone marrow and then drunk (11).

Hua To was the most important surgeon in ancient China. He used a strong mixture of hashish and wine to induce narcosis prior to surgery.

3.1.4 ANCIENT EGYPT

Wine was a gift to the Egyptians from their god Osiris, the God of Wine and of the Nile Floods. Ptah-Hotep was a nobleman who lived at Memphis in North Egypt about 2,400 B.C. In his tomb are the oldest inscriptions depicting winemaking in Egypt (12). Egyptian papyri dating from 2,000 B.C. record the medicinal use of wine. The medicinal wines used in Egypt were mainly from grapes, but also from dates and palm sap.

Egyptian wines were stored in sealed clay jars. These were imprinted with the seal of the owner, the name of the vineyard, the type of wine and the vintage just like on a modern wine label. By the time of the 5th Dynasty (2470 B.C.) six different vineyard appellations in Egypt were recorded. This suggests that viticulture and oenology were quite advanced and taken seriously in ancient Egypt. The Funeral offerings of King Unas at the end of the Fifth Dynasty (2494-2345 B.C.) include five kinds of wine (13).

The papyri show that wine was used (along with beer) as a solvent for mixing other medicines - whether they be plant, animal or mineral. Other mixing media included

water, honey, milk and oil. However, wine was also used as an integral part of prescriptions. The following lists all the known and translated Egyptian Medical Papyri:

Kahun	Gynaecological Papyrus written in 1900 B.C.
Edwin Smith	Papyrus written 1550 B.C., - 1550 B.C. but the original author was an experienced physician from 2200 B.C.
Ebers	Papyrus written 1500 B.C.
Hearst	Papyrus written 1500 B.C.
London	Papyrus written 1350 - 1100 B.C.
Berlin	Papyrus written 1350 -1100 B.C.
Brugsch	Minor Papyrus written 1350 - 1100 B.C.

From these papyri an extensive knowledge of Egyptian medical practice can be gained. They document hundreds of specific prescriptions, including diverse combinations of medicines (polypharmacy). These papyri also show a consistency of prescribing and "contain evidence of having been copied in part from earlier medical treatises dating back to 2,550 or even 3,400 B.C.," thus making them our oldest recorded wine prescriptions (14).

Wine (Irep in ancient Egyptian) made from grapes would have had enough alcohol in it to extract alkaloids, such as in Ebers prescription 287, which was given to cause the heart to receive bread (i.e. as a tonic restore one's appetite). The tonic remedy required that wine and wheat grouts "Spend the night" (i.e. get mixed and be given time to be dissolved) before being drunk (15). The wine would have also made disagreeable components of a prescriptions more palatable, and the "mild intoxication would have

eased the burden of many complaints" (16). Ebers 9 and 12 provide other examples of wine as a vehicle for dissolving *materia medica* (17).

Ebers 804 was prescribed "to release a child from the belly of a woman" (18) using wine. Wine was also one of the drugs used for the treatment of coughing (Seryt in ancient Egyptian). Most remedies for cough are in Ebers 190, 305-325; Berlin 29, 31-34, 36-47 and Hearst 61 (19).

Grape wine was used extensively in prescriptions for anorexia (20), because it would stimulate the appetite and would provide valuable nutrients.

Six of the ten prescriptions in Ebers 326-35 contain wine, which was included to drive out the "great weakness" i.e. act as an uplifting agent (21). Wine was also used in salves, in enemas and in bandaging to prevent infection. Wine lees (the grape skins remaining after pressing) were also used for these purposes, and were also applied externally to reduce swelling in limbs and also fevers, as recommended in Ebers 162-163 (22).

Other Ebers prescriptions include the following:

"To eradicate asthma: honey 1 to (a mouthful), beer 8 ro, wine 5 ro, are strained and taken in 1 day.

To cause purgation: 6 senna (pods) (which are like beans from Crete) and fruit of ... colocynth are ground fine, put in honey and eaten by the man and swallowed with sweet wine 5 ro.

To cause the stomach to receive bread: fat flesh 2 ro, wine 5 ro, raisin 2 ro, figs 2 ro, celery 2 ro, sweet beer 25 ro, are boiled, strained and taken for 4 days.

To expel epilepsy in a man: testicles of an ass are ground fine, put in wine and drunk by the man; it (i.e., the epilepsy) will cease immediately.

To treat jaundice: leaves of lotus 4 ro, wine 20 ro, powder of zizyphus 4 ro, figs 4 ro, milk 2 ro, fruit of uuniperus 2 ro, frankincense $\frac{1}{2}$ rim sweet beer 20 ro, (it) remains during the night in the dew, is strained, and taken for 4 days.

Remedy for dejection: colocynth 4 ro, honey 4 ro, are mixed together, eaten and swallowed with beer ro ro or wine 5 ro" (23).

Thus, wine and wine lees, used internally and externally, was an integral part of ancient Egyptian medicine.

3.1.5 ANCIENT INDIA

The earliest records of medicine in India are from around 2,000 B.C. They presumably developed independently of Mesopotamia, Egypt and Greece. During the Vedic period of Indian history (2,500 to 200 B.C.), with its origins around the Indus River system,

wine was worshipped as the liquid God Soma, because of its medicinal attributes. The Hindus' most ancient sacred text, called the Vedas, credited Soma with great medicinal powers. Another Hindu sacred text is the Rig-Veda, which contained hymns praising some, e.g. "This is Soma, who flows wine, who is strength giving ..." (24), and "the God Soma heals whatever is sick... makes the blind see and the lame walk" (25).

Soma is thought originally to be the fermented juice of an East Indian leafless vine (*asclepias-acida*) and other wild indigenous grapevines. Later the normal cultivated European grapevine (*V. vinifera*) was introduced originally from Persia during the early Christian era, then again later from Europe as trade with India developed.

The Vedas included a life science and medical text called Ayur-Veda, part of which was the famous Charaka Samhita, which deals extensively with the use of wine as a medicine. The Charaka Samhita states that wine is the "invigoration of mind and body, antidote to sleeplessness, sorrow and fatigue ... producer of hunger, happiness, and digestion ... if taken as medicine, and not for intoxication, it acts as Amrita (Soma), it cures the natural flow of internal fluids of the body ... Wine is natural food but taken indiscriminately produces disease, but when taken properly, it is like Amrita, the immortal drink" (26).

The Charaka Samhita also contained an ode to wine "(Wine) who is worshipped with the Gods, invoked in Sautra-moni Yajna, who is Amrita to the gods ... Soma juice to the Brahmans ... the destroyer of sorrow, fear and anxiety ... who is pleasure, happiness and nourishment (to men)" (27).

The Tantras are part of the Hindu Shastras or scriptures and refer to wine as the God-beverage with the power of Soma, "the Supreme Being in liquid form ... the medicine of humanity ... the cause of great joy ... the mother of enjoyment and liberation" (28). Wine was an important and indispensable part of Tantric worship, so with the rise of Buddhism and its use of Tantric rituals, wine became part of medical practice in Bengal, Nepal and Kashmir.

The early Hindus were advanced surgeons who also had an extensive materia medica, including 760 medicinal plants that were prescribed in diets, baths, gargles, enemas and inhalations. They were among the first to record the use of wine as an anaesthetic. This is illustrated in the following quote from an ancient Sanskrit medical text: "... the patient should be given to eat what he wishes and wine to drink before the operation, so that he may not faint and may not feel the knife" (29).

Alexander the Great of Greece invaded India in 327 BC and took back to Greece knowledge from Hindu surgeons and physicians, so the Indians may have influenced Greek medicine. When the Moslems conquered India in the seventh and eighth centuries A.D., Indian medicine and the use of wine in medicine, religion and sacrifice declined.

Today Ayurvedic medicine is still practiced in India and the text "Fundamentals of Ayurvedic Medica" lists wine (Madya) as one of the twelve ingredient groups for food and drinks (30). The text also has a list of the best drugs, diets and regimens in certain conditions, with wine appearing as number three on the list: "3. Wine is the best for dispelling fatigue, and it is exhilarating" (31). In another section the text states. "18.

Wine and milk as well as meat of goat are exceedingly useful in treatment of Sosa (emaciation caused by tuberculosis) (32).

3.1.6 ANCIENT GREECE

The vine then spread north to Greece. By about 2000 B.C. Dionysus became the Greek god of wine. The Greeks adopted wine as part of their daily nutritional needs, along with bread and meat, believing it strengthened them, as amply described throughout Homer's "Illiad and Odyssey" where wine was not only the medicine most frequently mentioned, but characters such as Achilles and Ulysses recognised its ability to sustain the body. Normally, as a medicinal remedy, wine had been prescribed diluted three to five times by water. The Greek physicians were the first to prescribe wine undiluted and it was one of their main medicines.

Hippocrates (450-370 BC) was one of the leading physicians of the ancient world, who lived on the island of Cos and is recognised as the father of modern western medicine, because he was the first to say that illness was not due to the wrath of the gods, but due to poor nutrition or disease. Hippocrates believed in assisting the forces of nature to restore harmony in the body and thus promote recovery by using dietary treatments along with fresh air and exercise. This he called his Regimen. Hippocrates believed that if there was any deficiency in either food or exercise then the body would fall sick. A nourishing pottage called Kykeon was made of barley with wine and milk as a nourishment (33). He used wine extensively as a wound dressing, as a nourishing dietary beverage, as a cooling agent for fevers, as a purgative and as a diuretic. He made distinctions among the various types of wine, described their different effects, directed their uses for specific conditions and advised when they should be diluted with water and in addition, stated when wine should be avoided. In his essay on wounds, Hippocrates said "no wound should be moistened with anything except wine, unless the

wound is in a joint" (34), and taught that the wound should be thoroughly cleansed with wine, that all the blood should be removed and a clean piece of linen soaked in wine should be applied directly to the wound before bandaging. Alternatively a sponge soaked in wine and kept moist with wine from a vessel above the sponge, be applied to the wound. This was good medicine as infection was one of the greatest causes of death in the ancient world and the polyphenols and alcohol in wine are potent antiseptics. Old blood left in a wound is also a good culture medium for bacteria as a source of further infection. So instead of poking around inside a wound, not washed with wine, with unclean hands as ancient physicians did; "Hippocratic physicians, by contrast, used surgical probes which had been disinfected with wine or vinegar" (35) in a wound also disinfected with wine.

Regarding the therapeutic uses of wine, Hippocrates noted that the yeast and unaltered sugar of new wines were irritants of the gastro-intestinal tract; white, thin and acid wines are the more diuretic; wines rich in tannin are anti-diarrhoeic. These observations are described well in the following passage from Dr. Salvatore Lucia "The therapeutics of Hippocrates were based on rational observations of the responses of patients to treatment, and on strict hygienic rules. He made no extravagant claims for wine, but incorporated it into the regimen for almost all acute and chronic diseases, and especially during the period of convalescence. Although he advised against its use in illnesses involving the central nervous system, particularly in meningitis, he suggested that even in this disorder, if fever were absent, enough wine should be added to the water to insure an adequate intake and exchange of fluid. By varying the proportion of water, he tempered the dose of wine to the requirements of the illness and the needs of the patient.

Hippocrates described water as 'cooling and moist,' and wine he characterised as 'hot and dry' and containing 'something purgative from its original substance.' Dark and harsh wines, however, were said to be 'more dry,' and to '... pass well neither by stool nor by urine, nor by spittle. They dry by reason of their heat, consuming the moisture out of the body.' The latter constitutes the earliest recorded observation of the biophysiologic effects of wines excessive in their content of tannin - an agent which retards the motility and mobility of the bowel, decreases the production of urine, and suppresses the flow of salivary and other glandular secretions.

Of other wines used therapeutically, he observed: Soft dark wines are moister; they are flatulent and pass better by stool. The sweet dark wines are moister and weaker; they cause flatulence because they produce moisture. Harsh white wines heat without drying, and they pass better by urine than by stool. New wines pass by stool better than other wines because they are nearer the must, and more nourishing; of wines of the same age, those with bouquet pass better by stool than those without, because they are riper, and the thicker wines better than the thin. Thin wines pass better by urine. White wines and thin sweet wines pass better by urine than by stool; they cool attenuate and moisten the body, but make the blood weak, increasing in the body that which is opposed to the blood. Must causes wine, disturbs the bowels and empties them. It causes wind because it heats; it empties the body because it purges; it disturbs by fermenting in the bowels and passing by stool. Acid wines cool, moisten and attenuate; they cool and attenuate by emptying the body of its moisture; they moisten from the water that enters with the wine. Vinegar (sour wine) is refreshing, because it dissolves and consumes the moisture in the body; it is binding rather than laxative because it affords no nourishment and is sharp.

This passage of the great Hippocrates epitomises the logic of a master-mind in its observations of human physiology and of the chemical changes upon which physiologic reactions are dependent. The yeast and unaltered sugar of new wines are irritants of the gastrointestinal tract; white, thin, and acid wines are the more diuretic; wines rich in tannin are anti-diarrhoeic. Thus in terse phrases, the mechanisms for acceleration and retardation of bowel movement and urinary flow and for hydration and dehydration of the body in relation to the ingestion of grape extractives, acids, tannin, and alcohol, were established for the ensuing centuries" (36).

Hippocrates also had the following to say about wine as a medicine, "Wine is fit for man in a wonderful way provided that it is taken with good sense by the sick as well as the healthy"(37) in accordance with the circumstance of each individual person.

The following are other writings about the use of wine as a medicine by Hippocrates:

"Infants should be bathed for long periods in warm water and given their wine diluted and not at all cold. The wine should be of a kind, which is least likely to cause distension of the stomach and wind. This should be done to prevent occurrence of convulsions and to make the children grow and get good complexions" (38).

"The main points in favour of white strong wine ... It passes more easily to the bladder than the other kind and is diuretic and purgative, it is always beneficial in acute diseases. These are good points to note about the beneficial and harmful properties of wine; they are unknown to my predecessors" (39).

"His jaws are fixed, and he is unable to open his mouth ... Grind wormwood (Artemisia absinthium), bay leaves, or henbane seed with frankincense; soak this in white wine, and pour it into a new pot; add an amount of oil equal to the wine, warm and anoint the patient's body copiously with the warm fluid, and also his head ... Also give him a very sweet white wine to drink in large quantities" (40).

For an obstinate ulcer, sweet wine and a lot of patience should be enough (41).

Wine removes the sensation of hunger (42).

Pains of the eyes are cured by wine, by the bath, by fermentation, by bleeding, or by purging (43).

In pains of the eyes, after having administered pure wine, and free ablution with warm water, a vein must be opened (44).

Anxiety, yawning, and rigour, are removed by drinking equal parts of wine and water (45).

If the wound is in a good state, but the adjacent parts inflamed, a cataplasm, composed of the flower of lentils boiled in wine, will be found serviceable; but if you want to close and heal, you must employ the leaves of the black-berry bush, nasturtium, park leaves, or allum, macerated in wine or vinegar.

For the wounds of the head and ears, whether recent or old, unripe grapes, myrrh and honey, with a small proportion of nitre, and a still smaller one of flower of brass, boiled together in wine, during three days at least, make a good composition (46).

During the whole course of the disorder, it is useful to give honey and water, and now and then wine (47).

Sweet red wine is more powerful than the white for promoting expectoration (48) White (wine) is best for exciting a flow of urine: this diuretic quality renders it very serviceable in acute complaints (49).

When a violent headache, or a delirium, supervenes, wine must be entirely laid aside, and water substituted in its place; or, at most, a watery sort of white wine: observing to give some water after it (50).

Hippocrates was also one of the first of the ancient physicians to attribute feelings of joy, sadness, grief and sorrow to the brain. Prior to then the heart was considered the house of the soul and mind; whereas the ancient Egyptian thought one's personality lived in the liver. Mental illness was seen as a possession by evil spirits; whereas, Hippocrates saw mental illness as a physical disease which would respond to his physical treatments. Aristotle also believed mental illness was physical but resulting from an excess of "black life" and advocated that the melancholia be treated with wine, aphrodisiacs and music (51). Surely a combination that would work even today. The great Greek philosophers Socrates, Plato and Aristotle, contemporaries of Hippocrates, were all great oenophiles.

After Hippocrates, the father of Greek medicine, came many more physicians.

Theophrastus of Eresus (372 BC - 287 BC) described many medicinal plants that were mixed with wine (52). He was a pupil of Aristotle and wrote many books including "Inquiry into plants" comprising nine books and "Growth of Plants" comprising six books hence he had a great knowledge of plants which could be used as medicines with wine.

Mnesitheus (320-290 BC) was a famous Hippocratic physician practicing in Athens who wrote a treatise called "Diet and Drink", where he stated about wine ... "In medicine it is most beneficial; it can be mixed with liquid drugs and it brings aid to the wounded ... While dark wine is most favourable to bodily growth, white wine is thinnest and most diuretic; yellow wine is dry, and better adapted to digesting foods". (53) Thus he observed that red wines contained more vitamins 2,200 years before Margan reported on vitamins in wine in 1939.

Athanaeus (170-230 AD), was a Greco-Egyptian physician from Naucratis, wrote about the use of wine as a medicine "in medicine it is most beneficial; it can be mixed with soluble drugs and it brings aid to the wounded" (54). He also commented on the wines from Mareo noting their diuretic effect "it is white and pleasant, fragrant, easily assimilated, thin, does not go to the head and is a diuretic" (55). Athanaeus also quoted the original writings, which no longer exist, of Diocles of Carystus (ca. 375 BC) and his pupil Prascagoras, both of whom wrote about the therapeutic uses of wine.

Between 300 BC and 50 BC the centre of Greek medicine moved to Alexandria where Erasistratus (300-260 BC) founded a school for progressive physicians known as the Erasistrateans who favoured therapies involving mild laxatives, barley-water and wine in small doses. In the 1st century BC, followers of Erasistratus founded the medical school at Smyrna to advance his work. Hikesios led this group and wrote a treatise on the preparation of wine called "De Conditura Vini" which advised the use of wine as a medicine. Apollonius of Citium (ca. 81-58 BC) was a contemporary of Hikesios who also wrote a treatise on wine as a medicine. Cleophrastus was another famous Alexandrian physician who tried to simplify treatments and taught the use of wine and cold water in therapy, especially in dealing with fevers such as malaria, to reduce the fever and to sedate the patient.

The Greeks also developed their Theriacs and Alexipharmics - antidote medicines using wine as part of the therapeutic agent. Theriaca comes from Therian, a wild beast that later became a venomous serpent; hence, Theriaca was about the symptoms and treatment of venomous bites and animal stings. Alexipharmica is from the Greek Alexein meaning to ward off; hence, Alexipharmica was about antidotes against poisons in food and drink. Both terms were first used by Nicander (190-130 BC), a poet and physician.

The next great advocate of these antidote medicines was King Mithradates the Great (132-63 BC). Mithradates developed his "true medicines" (56) or Mithradatium, antidotes and prophylactic medicines, on an empirical basis by giving guinea pigs and human prisoners a certain poison or bite and seeing which of his medicines worked and which, didn't, much to the fatal disadvantage of the subject being tested but such was

the absolute power of being King. These Mithradatum were later used by Roman pharmacies, Arab physicians, doctors in Medieval Europe as a cure for the plague and English doctors as a cure-all well into the eighteenth century.

Plutarch (46-119) was a Greek biographer and historian. His history of the Greek State Sparta describes how wine was used to help test babies' strength, for Sparta only wanted strong babies to live.

“But if it was puny and deformed, they dispatched it to what was called ‘the place of rejection’ (‘Apothetae’), a precipitous spot by Mount Taygetus, considering it better both for itself and the state that the baby should die if right from birth it was poorly endowed for health and strength. And that is why women would test their babies’ constitution by washing them in wine instead of water. The effect of the unmixed wine on ailing and epileptic children is said to be that they lose their senses, and their limbs go stiff, whereas healthy ones are toughened by it and acquire a hardier constitution” (57).

The Hippocratic physicians broadened the art and science of therapeutics and championed the use of wine as a medicine. They ushered in the Greco-Roman period of medicine where wine became the most important therapeutic agent of the time.

3.1.7. ANCIENT ROME

After the destruction of Corinth in Greece in 146 BC by the Romans Greek medicine moved to Rome. The Etruscans had introduced viticulture into northern Italy, mainly around Tuscany and the Romans developed their own god of wine Bacchus.

After the ascent of Rome, the Romans mistrusted Greek physicians thinking them to be possible poisoners or assassins. It took Asklepiades of Bithynia (124-40 BC), physician to Cicero and pupil of Cleophrantus in Alexandria, to gain Roman acceptance of Greek medicine. He recommended restriction of diet, use of wine, bathing, massage, hydrotherapy, music and exercise in the open air to treat illness. He later wrote an essay describing the virtues of various Greek and Roman wines called "Concerning the Dosage of Wine". Asklepiades was very popular with the Roman nobility because of his therapeutic slogan "cito, tuto, jucunde" meaning "swiftly, safely, sweetly" (58) and because he invented the shower bath for its hygienic value. He was given the nickname Oinodotes meaning "giver of wine".

Menecrates of Tralles was the physician to Emperor Tiberius, which was a sign of true Roman acceptance of Greek Physicians. He was called Physikosoinodotes (natural philosopher), who advised the use of wine.

One Roman who was against this Greek influence was Marcus Porcius Cato (234 B.C. -149 B.C.). After referred to as Cato the Edler or Cato the Censor, he was a great Roman orator and statesman who championed Roman ways and culture. He was a

prolific writer and included medicine as one of his subjects prescribing cabbage and wine mixed in special formulas as remedies against disease (59).

Aurelius Cornelius Celsus (25 BC-37 AD) wrote "De Re Medicina", comprising eight books it was a vast text on medicine. He was one of the leaders of Roman medicine and wrote much about the therapeutic uses of wine discussing the medicinal values of the various wines from different regions of Italy, Sicily and Greece and for which diseases they should be prescribed.

For those with indigestion problems, for example, Celsus recommended... "Those who have a slow digestion and for that reason get a distended abdomen, or because of some kind of fever feel thirst during the night, they should, before going to bed, drink 3 or 4 cups of wine through a thin straw" (60).

Sextius Niger (ca 40 AD) was a disciple of Asclepiades who went against the usual Roman philosophy that was very superstitious, attributing specific diseases to different gods. He advocated the extensive medicinal uses of what he called natural wine.

Pliny the Elder (23-79 AD) was a famous Roman scholar, statesman and physician, who wrote "Historia Naturalis" (Natural History) - a unique encyclopaedia about plants and medicine, in which he noted that "wines have a remarkable property of drawing into themselves the flavour of some other plant" and listed 60 kinds of "artificial wines being used for medicinal purposes" as antidotes to snake bite and poisonous mushrooms (61). Twelve books in his natural history were devoted exclusively to medicine, where he listed 200 grape varieties, 50 Roman wines, 38 foreign wines, 7 kinds of salted wines

and 18 varieties of sweet wines. Pliny the Elder also advocated taking wine with meals and disapproved the custom of Biberius - taking wine before meals which was popular under Emperor Tiberius. He also wrote ... "There are two liquids that are especially agreeable to the human body - wine inside and oil outside" (62), and advocated the use of herbs and spices administered in wine.

Dioscorides (40-90 AD) was a Greek army surgeon under Nero. He wrote "De Universa Medicina" in approximately 77 AD. Whilst accompanying Roman armies on their expeditions especially in Eastern Mediterranean countries, he gathered information for his writings describing various substances - animal products, plants, spices, salves, oils, minerals and wines - detailing their dietetic and therapeutic values. Hence he became the founder of "Materia Medica" or the study of medical substances as an applied science. He used wine in many conditions and a particular type was always specified. "In general wine warms the body, it is digestible, increases the appetite, helps the sleep and has reviving properties" (63). De Universa Medicina comprised five books listing over 1,000 drugs and was a leading medical text for the next sixteen centuries.

Dioscorides made a pain killing drug from the Mandrake plant called a mandragora. "Boil the roots (of the mandrake plant) in a third part of wine; preserve the resultant juice. Of this, administer a kyathos (about 4.6cc) to induce insensibility before cutting or cauterizing" (64). Apuleius also described the use of mandragora around 200 AD stating that for amputation of a limb, half an ounce of the root (of the mandrake) with wine was drunk and then the patient "slept until his limb had been removed without pain" (64).

Columella (ca 4 BC-65 AD), who was a Roman Agricultural writer and a contemporary of Pliny and Dioscorides, also wrote about the virtues of wine as a medicine explaining the different effects of different wines from various grape varieties.

Galen (131-201 AD) was another famous Greek physician and second only to Hippocrates. He was a physician to the gladiators and as such treated countless wounds - lacerations, stabbing wounds, amputations and evisceration (where the abdominal cavity has been punctured and the abdominal contents of bowel and organs are exposed). Here Galen, like Hippocrates, favoured the use of wine to prevent infection. He even went to the extreme of soaking the exposed abdominal contents in wine, before putting them back in the abdominal cavity in the cases of evisceration.

For fistulous abscesses Galen recommended "before applying the agglutinant, I am in the habit of cleaning the sinus with wine alone, sometimes with honeyed wine. This wine should be neither sweet nor astringent" (65). He also insisted that any putrid wound should be washed with wine or a sponge or a piece of wool soaked in wine be applied to the wound. Galen wrote a complex list of drugs made from vegetables, most mixed with wine, which were called Galenicals. He wrote a catalogue of wines from different areas noting their chemical characteristics and physiological effects. He advocated using wine as a suitable treatment for the diseases of the aged in his book "de Sanitate Tuenda" (Galen's Hygiene). Galen wrote "wine ... for old men it is most useful" (66). He prescribed natured Palernian wine, the Emperor's wine, because it was made in the vineyards near Rome. Galen's thoughts and his Galenicals dominated European medicine until the Middle Ages, and especially after he praised them Mithradatium and other Theriacs were also popular up to the eighteenth century.

Other pro-wine physicians in Galen's time included Athenaeus of Attalia who founded the Pneumatic school of medicine which stated that wine aroused the Pneuma or the vital spirit or breath in a person, hence was good as a tonic or restorative. Athaneus' teachings were continued by Archigenes of Apamea and later by the great physician after Galen - Aretaeus of Cappadocia. Aretaeus wrote an extensive medical text called 'Therapeutics of Chronic Diseases', which was noted for its accurate descriptions of diseases and for highly recommending Italian wines as medicines.

With the expansion of the Roman Empire along river valleys such as the Rhone and Rhine Rivers, so viticulture spread until most climatically favourable areas of Europe grew grapes.

During this expansion of the Empire Roman Generals such as Caesar recommended that soldiers drink wine to preserve good health, to give them strength and to help prevent dysentery. The two major medical conditions harming soldiers, besides being killed in combat, was infection of wounds and dysentery from unclean water in new lands - both of which were prevented with wine.

Byzantium In 330 AD, Emperor Constantine transferred his capital to Byzantium in Asia Minor (today's Constantinople, capital of Turkey). During this Byzantium era only a few medical writers were prominent. However, they were vital, because they continued the influence of Graeco-Roman medicine during the Dark Ages, when intellectual stagnation gripped Europe after the fall of the Roman Empire with the sacking of Rome in 410 AD and the destruction of Alexandria in 640 AD.

Orbasius (325-403) was greatly influenced by Galen and wrote an encyclopaedia of medicine called the Synagogue. He used papyrus leaves soaked in diluted wine for example, to stop infection and to stop bleeding. Paul of Aegina (625-690) continued the pro-wine Graeco-Roman tradition, as did Actius of Amida (502-575), who was the first notable Christian physician. He wrote a text called Tetrabiblion, which reflected his medical studies at Alexandria. He advocated red slightly astringent wines "for persons in good health, and those who are convalescent from diseases" (67), and for nausea in pregnant women "they should drink old, tawny, fragrant wine which is a little tart" (68).

Alexander of Tralles (525-605) was the fourth great pro-wine Byzantium physician. He described intestinal worms, gout and insanity. He recommended narcotics, bleeding, warm baths and wine for certain mental diseases. For dandruff he recommended rubbing wine with salves and washing with salt water.

3.1.8. BIBLICAL - JEWISH ERA

Wine, Yayin in Hebrew, was and is still an integral part of Jewish culture, religion and medicine. Wine accompanied meals, was drunk on religious occasions and was an important part of celebrations.

In the parable of the Good Samaritan (Luke 10:30-37), Jesus mentions the medicinal use of wine. The Good Samaritan bound up the wounds of the assaulted traveller and poured on olive oil and wine to prevent infection. In the Middle East today a mixture of

olive oil and wine known as Samaritan balm is still available as an antiseptic for skin wounds. St. Luke was a Greek (Hippocratic) physician for Antioch.

Jews used wine to rinse the wound after circumcision to prevent infection and in the Old Testament of the Bible, Proverbs 31:6, 7 states "Let him drink, and forget his poverty, and remember his misery no more" suggesting the use of wine as a sedative. While in the New Testament of the Bible Saint Paul advised Saint Timothy "No longer drink only water, but use a little wine for the sake of your stomach and your frequent ailments". (Timothy 5:2, 3) St. Paul and St. Luke lived in Rome at the same time as Pliny, Dioscorides and Columella hence would have been influenced by their pro-wine teachings.

The Jewish Talmud written between 536 BC and 427 AD states the following about wine "Wine taken in moderation induces appetite and is beneficial to health ... Wine is the greatest of medicines. Where wine is lacking, drugs are necessary" (69).

A very famous Jewish physician and philosopher was Moses Ben Maimon of Cordoba better known as Maimonides (1135-1204 AD). He was a great advocate for the use of wine as a medicine as advocated in his book "De Regimine Sanitatis" and shown by the following quotes. He was the leading Jewish medical authority of the middle ages. "Wine is a nutrient... It is a very good nutrient ... It generates praiseworthy blood ... (it) will generate flatus, and possibly tremor... nevertheless if mixed and left for twelve hours or more and then drunk, it is very good... and the temperament improves" (70). "(Mad dog) ... (if done before onset of hydrophobia, otherwise patients always die) ... flour of vetch kneaded in wine and applied as a poultice" (71).

3.1.9 ARABIC PERIOD

The Koran presented Arab Doctors with a dilemma. According to the Koran, wine was a "device of the devil" hence forbidden, but it also states "of the fruits of the date palm and grapes, whence ye derive strong drink and good nourishment, is healing for mankind". The main influence on Islamic medicine was Greek with its extensive therapeutic use of wine. So Islamic doctors used wine as a medicine only and did not prescribe it for "social" reasons. Rhazes (860-932) was a great Arabic doctor and was the first to describe smallpox and measles in the literature. He may have been the first outside China to distil alcohol from wine and used it to prevent infection in wounds. He used compresses soaked in warm wine to compress the intestines back into the abdominal cavity in the case of abdominal evisceration.

Avicenna (980-1037) known as the "Prince of Physicians" wrote the main Medical textbook for western and eastern medicine, which was used for hundreds of years until 1650 and called the "Canon of Medicine". Again he recommended wine for dressings and observed "wine is also very efficient in causing the products of digestion to become disseminated through the body" (72). Avicenna was philosophical about the use of wine... "Is wine to blame that it raises the wise to heaven, but plunges the fool into darkness" (73).

In his Canon of Medicine he devotes a whole section to wine, headed "Wine" it covers recommendations 800 to 814 inclusive. It starts with the "Virtues of Wine" - "As to the advantages that be in wine - it strengtheneth the viscera and banisheth care, and moveth

to generosity and preserveth health and digestion; it conserveth the body, expelleth disease from the joints, purifieth the frame of corrupt humours, engendereth cheerfulness, gladdeneth the heart of man and keepeth up the natural heat; it enforceth the liver and removeth obstructions, reddeneth the cheeks, cleareth the brain and deferreth grey hairs" (74). and ends with "Anaesthetics" – "If it is desirable to get a person unconscious quickly, without his being harmed, add sweet smelling moss to the wine, or lignum aloes".

If it is desirable to procure a deeply unconscious state, so as to enable the pain to be borne which is involved in painful applications to a member, place darter-water into the wine; or administer fumitory, opium, hyoscyamus (half-dram dose of each); nutmeg, crude aloes-wood (4 grains of each). Add this to the wine, and take as much as is necessary for the purpose. - Or, boil black hyoscyamus in water, with mandragore bark, until it becomes red. Add this to the wine" (75).

Albucasis (936-1013) was more interested in surgery. His was the first complete book of surgery with illustrations on techniques and instruments. His Treatise on Surgery was translated from Arabic into Latin in the late twelfth century, then into English in 1778. He recommended treating wounds with cotton wool soaked in rose oil or rose oil mixed with astringent wine and preventing the wound from being exposed to the air hence he was a pioneer in aseptic surgery. He used tepid astringent black wine in compound abdominal wounds (evisceration), irrigated infected sinuses with honey and dry wine, washed venesection (blood letting) sites with old wine and recommended "the men of frigid constitution should also take perfumed raisin wine, not too old and not too new" (76).

Haly ben Abbas, a famous Arabic physician of the tenth century, described Arabic medical practices of the time in his medical encyclopaedia called *Almaleki* or Royal book which contained a section on the action of natural and artificial wines. Arabic medicine's major contribution was the separation of pharmacy, known then as the arts of apothecary and alchemist, from physicians. The first apothecary shop was opened in Baghdad in 754 AD and the great tenth century Persian pharmacologist, Mansur the Great, wrote his extensive "Book of the Foundations of the True Properties of the Remedies" where he combined Greek, Syrian, Arabic and Hindu materia medica. From this background he would naturally be pro-wine and advised, for example, that if you gargled with "wine in which plum leaves have been boiled, he alleviates all complaints of catarrh which exist in the throat, neck and chest" (77).

3.1.10 MEDIEVAL EUROPE

The Byzantine period (fourth to seventh centuries AD), physicians preserved Greek medicine during the Dark Ages to be used during the Arabic period, which, in turn, preserved these medical traditions and organised them into proper coherent texts, to later reintroduce them into Western Europe via Spain after the Moslem conquests by the Moors from north-west Africa starting in 711. So via this complex circuitous route Greek medicine had gone to Rome, then Byzantium, then to Arabia to finally re-emerge in post Moorish Spain, from whence it was re-introduced back into Western Christian Europe, some 2000 years later.

Healing in medieval times was undertaken mainly by monks using medicines based chiefly on herbs and secondarily on animal products and mixed in wine. Minerals were rarely used until Paracelsus' time. After the thirteenth century the professions of pharmacist and physician/surgeon were separated after the Arabic influence, until then it was a general practice of physician/surgeon/pharmacist. Medicine was based on the classic Greco-Roman works, with some Islamic input. Blood letting by bleeding, cupping or leeching was popular.

Wine was used as a medicine by itself or mixed with other compounds to make a palatable concoction out of foul tasting substances. Monks preserved medical knowledge from the past in their libraries and advanced science and viticulture in the protection of their monasteries, which also housed the hospitals and the pharmacies. Monks did not practise surgery but used Galenicals instead because it was thought to be unholy and prohibited in 1162 by an edict of the Council of Tours. Many of the liqueurs used today owe their pedigree to medicines used in the dark ages by monks. Hence different monasteries developing their own famous liqueur, such as D.O.M. Benedictine coming from the Dominican Order of Monks (D.O.M). Wine in the medieval times suffered from oxidation. The art of sterile wine making and making air tight containers were lost after Roman times resulting in secondary fermentation in wine barrels and goat skins turning the wine into vinegar and not allowing aging in cellars.

Monasteries eventually developed into medical schools and one of the finest was at Salerno in southern Italy. The Salerno medical school was founded on the site of a ninth century Benedictine hospital and had both clerical and lay medical practitioners as teachers. Salernitan medicine eventually spread throughout Europe and the use of wine

as a medicine was an integral part of its teachings. In fact wine was the most frequently mentioned therapeutic agent in the Regimen Sanitatis Salernitanum or its code of health. Wine was prescribed as a nutrient, as a tonic, as an antiseptic and as the universal menstruum for other medicinal substances.

Women students were taught at Salerno. The most famous female student was Trotula or Mother Trot of Salerno who in the eleventh century wrote about obstetrics and advised "hot wine in which butter has been boiled" (78), be applied to treat prolapse of the uterus after childbirth.

Constantine the African (ca 1020-1087) brought many Arabic medical manuscripts to Salerno, which later ended up as an important compilation of medical recipes called the Antidotarium Nicolai named after the author Nicholas Praepositus, who was the director of the Salerno medical school at the time. His final text listed 150 Galenicals previously lost to Christian European medicine, many of which contained wine. Thus the Salerno medical school helped bridge the gap between Arabic medicine, based on Greek medicine, and the later Middle Ages.

Monasteries developed vineyards to make their wines for religious and medicinal purposes. They also developed herb gardens or herbularia where they grew the specific herbs needed for their medicines. During this period developed the belief that diseases were caused by miasms or bad odours so spices started to be used, in addition to plants and herbs, as medicines to ward off disease. Even in recent times it was common practice to hang cubes of camphor around children's necks in winter to ward off illness, just as it is common today to rub Vicks vapour rub onto children's chests when they

have a cold. So during the Middle Ages spices were more important as medicines than as supplements to cooking. They were added to wines as well to make an even stronger medicine. This practice continues today as vermouths, bitters, aperitifs, liqueurs and cordials.

Monks also introduced distillation from the Arabs into Europe in the 1300's and made brandy known as "aqua ardens". This new spirit of wine became the "super wine" or head medicine, which was the elixir of life, hence later called "aqua vitae".

After Salerno, other medical schools were established in Naples, Palermo, Montpellier and Bologna. The founder of the Bologna Medical School was Thaddeus of Florence (1223-1310) who compiled a text of prescriptions called "De virtute aqua vitae, quae etiam dicitur aqua ardens" or "on the virtues of the water of life, which is also called fiery water" (79), i.e. Brandy. These Medical schools and the monasteries preserved Greek and Arabic medicine for future generations.

Arnauld de Villeneuve (1235-1311) wrote "Liber de Vinis". He was a great advocate for the use of wine as a tonic, as part of a poultice, as an antiseptic especially in wound dressing and for sterilising polluted water. His book established wine as part of recognised therapy throughout Europe during the late Middle Ages.

The following extract from Liber de Vinis sums up what Arnauld thought about wine as a medicine - "If wine is taken in right measure it suits every age, every time and every region. It is becoming to the old because it opposes their dryness. To the young it is a food, because the nature of wine is the same as that of young people. But to children it

is also a food because it increases their natural heat. It is a medicine to them because it dries out the moisture they have drawn from their mother's body. No physician blames the use of wine by healthy people unless he blames the quantity or the admixture of water.... Hence it comes that men experienced in the art of healing have chosen the wine and have written many chapters about it and have declared it to be a useful embodiment or combination of all things for common usage. It is truly is most friendly to human nature" (80).

Arnauld wrote 123 books and treatises, was one of the first men in the Middle Ages to pursue original independent medical investigating, invented tinctures by extracting herb essences with alcohol and pioneered disease classification. But his greatest contribution to medicine was indoctrinating European doctors in the therapeutic uses of wine for centuries to come.

During the Middle Ages wine was mainly used internally. Not everyone used wine externally to prevent infection of wounds.

Theodoric (Teodorico Borgognoni) (1205-1296) was also an advocate for the use of wine for washing wounds, along with the removal of all foreign matter. This was contrary to the popular belief in "laudable pus" or the theory that the best way to treat a wound was to promote suppuration or pus formation by keeping the wound open. "No error can be greater than this. Such a practice is indeed to hinder nature, to prolong the disease and to prevent the conglutination and consolidation of the wound", he wrote (81).

Theodoric was the son and pupil of Hugh of Lucca (Ugo Borgognoni) who was the first surgeon of the Middle Ages to question the doctrine of laudable pus whilst treating Christian casualties during the Fifth Crusade. His theories were supported in 1252 by Bruno da Longoburgo of the University of Padua who expressed his ideas in his book *Chirurgia Magna* where he advocated wound antisepsis with wine.

These antiseptic practices were continued by William of Solicet (Guglielmo Salicetti 1210-1277) city physician of Verona and pupil of Bruno da Longoburgo as well as Solicet's pupil Lanfranc (Guido Lanfranchi) who practiced in Paris and founded the French school of surgery at the College de Saint Côme. Unfortunately Larfranc later lapsed back into the practice of suppuration or laudable pus. But one of Lanfranc's pupils, Henri de Mondeville (1260-1320), a lecturer at the University of Montpellier followed Hippocrates and wrote that pus "is not a stage of healing (laudable pus) but a complication" (82). He also advocated the use of wine as a tonic or "wound drink" to help strengthen his patients and recommended compresses drenched in hot wine, as bandages to prevent infection. John of Arderne (1307-1377) was the champion of antiseptic surgery in England during this period and used wine as a menstruum.

During the fourteenth and fifteenth centuries gunpowder made from bird-dung nitrates and gunshot wounds from lead projectiles covered in gunpowder complicated battlefield surgery due to the increased risk of infection and because the wounds were more extensive.

So the use of wine as an antiseptic was not as extensive and universal as one would wish, and it was not until Lord Lister introduced aseptic surgery with the use of carbolic

acid in the nineteenth century, after Louis Pasteur proved bacteria caused infections, that asepsis was adopted universally.

Hieronymus Brunschwig (1450-1533) was a surgeon in the Alsatian army who made his forte the treatment of gunshot wounds and distillation of alcohol. He promoted a mixture of strong Gascony wine, brandy and herbs called "aqua vite composite" for cleansing wounds and also it was used to "cure palsy, putteth away ring worms, expel poison and it was most wholesome for the stomach, heart and liver. It nourisheth blood" (83). His essay "The Vertuose boke of Distyllacyon of the Waters of All Manner of Herbs - for the help and profit of surgeons, physicians, apothecaries and all manner of people" introduced distillation to England in 1525. The spirit subsequently distilled was originally used as a medicine but later became a source for alcoholism and poisoning when gin was distilled from sawdust and wood shavings. Wine did not have this effect as it was made from pure healthy grapes.

The word alcohol was first used by Paracelsus in the sixteenth century. The physicians of ancient Egypt used the brittle metallic element, antimony, as a medicine. The Arabs called powdered antimony "al-kohl". Finally Paracelsus applied this Arab term to the spirit in wine calling it alcohol presumably because of its healing qualities. Theophrastus Bombastus Von Hohenheim or Paracelsus (1493-1541) was a medical teacher in Switzerland who had a great interest in alchemy, astrology and the occult. He emphasised the revolutionary thoughts of observation, experience and that humans were chemical machines. He popularised chemical medicine or the use of minerals as therapeutic agents as against the accepted followers of Galen who used plant medicines, hence he earned the title of "father of chemical pharmacology". He is also famous for

stating that "Whether wine is a nourishment, medicine or poison is a matter of dosage" and was a great believer in aseptic surgery using wine.

Other famous surgeons who used wine as an antiseptic during this period include Ambroise Paré (1510-1590) in France, regarded as the father of modern military surgery, and Richard Wiseman (1622-1676) in England.

Scipione Mercurio of Venice used the following mixture for soaking linen cloths to be used in operations to prevent infection. "Wormwood, agrimony, mint, mallow, pomegranate, dried roses, birthwort, and cat-tail are mixed in sour black wine and added to two pounds of water from a smith's iron-quenching pot" (84).

A famous patient treated with wine at this time was Mary Stuart, Queen of Scots (1542-1587), who suffered badly from stomach ulcers. When she was visiting her husband Bothwell at Jedburgh, she had a severe bleed from the stomach ulcer, resulting in her being in a state of shock. The only doctor available was Arnault, who did not believe in the fashionable blood letting (otherwise she would have surely died of shock). Instead "He tied off her extremities with bandages, to decrease peripheral blood circulation and maximise flow to the heart and brain, while adding liquid by forcing her to drink wine. (We now know wine also kills off the *Helicobacter Pylori* bacteria that can cause stomach ulcers). After a month's illness, Mary was able to travel" (85).

3.1.11 POST MEDIEVAL EUROPE

After the Middle Ages wine was prescribed constantly - "the astringent red wines for diarrhoea, the white wines as diuretics, port in acute fevers and for anaemia, claret and burgundy for anorexia, champagne for nausea and catarrhal conditions and port, sherry and madeira in convalescence" (86).

Theriacs, first compounded by the Greeks Nicander and Mithradates, started to be questioned as medicinal potage or fraudulent mixtures of polypharmacy that had no scientific basis. When the eminent English physician William Heberden (1710-1801) investigated theriacs and published his negative findings in 1745 in an essay entitled "Anti-theriaka" the days of the theriacs were numbered and eventually the college of Physicians eliminated them from the London Pharmacopoeia.

Patients were given alcoholic drinks for another reason also - the alternative drinks were very suspect. Water was polluted and often also infected (usually with typhoid or cholera) in the cities, and milk had a very real risk of containing tuberculosis. The only safe, infection free drink was alcoholic, and the most therapeutic of the alcoholic drinks was wine, not spirits. Hence the famous microbiologist Louis Pasteur described wine as "the most healthful and hygienic of all beverages". Even as late as 1892 Professor Alois Pick of the Vienna Institute of Hygiene recommended adding wine to water to sterilise the water in the cholera epidemic of Hamburg. Research today has shown that the reason why wine is so much more effective as an antiseptic than pure alcohol is because wine contains other sterilising compounds other than alcohol and it is the polyphenols

such as malvoside (the principal pigment in red wine) that have the major anti-bacterial effect.

Hospitals used wine as a medicine during the Middle Ages. The single biggest expenditure of Leicester Hospital, England, in 1773, for example, was for wine for the patients.

In Germany, at the Alice Hospital in Darmstadt, 755 patients, between October 1870 and early April 1871 (i.e. in less than six months), used 4,633 bottles of white wine, 6,332 bottles of red wine, 60 bottles of champagne and 30 dozen bottles of port, besides some superior white wines and some Bordeaux (87).

The post medieval period was also a time for regulation of drugs and wine. The theriac frauds eventually forced governments to pass laws regulating the practices of apothecaries and vintners. During the fourteenth century Italian states passed laws to discourage counterfeiting of drugs and watering down and adulteration of wine. Next came standard formulae for drugs with official authority (initially by local legislatures then by national governments) which became known as pharmacopoeias. The first such pharmacopoeia was produced in 1535 by Valerius Cordus of Erfurt, a young Prussian doctor who got his "Pharmacorum Conficiendorum Ratio, Vulgo Vocat Dispensatorium" ratified by the Nuremberg High Senate. They ordered its printing in 1546 and instructed all pharmacists to prepare their medicines according to Valerius Cordus' Dispensatorium. The original pharmacopoeias contained good medicine as well as elements of magic, witchcraft and mysticism. In England these collections of recipes

were called leech books which contained herbs mixed in wine according to early Saxon tradition.

The physician to King Edward II of England was John of Gaddesder (1280-1361). He prepared a pharmacopoeia called "Rosa Anglica" in which he used fennel and parsley in wine to cure blindness, using the Saxon belief that fennel was one of the nine sacred herbs. While in England for a cold stomach that is feeble of digestion and for the liver, give him wine that nutmegs is boiled in. Also good for the same, boil nutmegs and mastic in wine and drink it" (88).

Paracelsus made the use of iron and antimony in wine popular. The vinum ferri was used as a remedy for anaemia until the late nineteenth century, while his wine of antimony continues to be used today as an expectorant and emetic.

The first London Pharmacopoeia was published in 1681 and contained three medicated wines and ten medicated vinegars. The other European cities and countries followed suit with their pharmacopoeias namely Amsterdam in 1636, Paris in 1639, Spain in 1651, Brussels in 1671 and Russia in 1778 for example. With the demise of the theriacs after 1745, preparations became simpler and those containing wine or alcohol grew rapidly. In 1818 Thomson's London Dispensary contained an extensive chapter on wines and their medicinal properties and uses, listing ten formulas for medicated wines such as wine of ipecac for coughs and dysentery and wine of opium for inflamed eyes. The Pharmacopoeia Universalis of Heidelberg listed 170 wines in its 1835 editions while the Pharmacopoe Universelle of Paris in 1840 listed 164 wines and the first Pharmacopoeia of the United States published in 1820 listed nine "vine medicate".

Vinum was specified as the wine produce of *V. vinifera* or the European cultivated wine grape. Later Vinum Portense or port and vinum xericum or sherry, were added to the standard pharmacopoeias.

Eventually, the anti-alcohol temperance movement or prohibitionists lobby gained momentum in the United States and England in the nineteenth century and had all wines removed from the pharmacopoeias; in the United States in 1916 and in England in 1932, but the pharmacopoeias of continental Europe continued to list wine such as in France (seven wines in 1960 French Codex), in Italy (six wines in Farmacopoea Ufficinale) and in Germany (41 wines in 1958 - Hagers Handbuch der Pharmazeutischen Praxis).

During the Plague of London, which began in May 1665, the doctors who remained in London to help treat the victims used wine all the time. Dr. Heinrico Sayer, for example, fortified himself with a good strong wine before entering his patient's house (89). One of the most famous of the Plague doctors was Dr. Nathaniel Hodges, who swore by sack or sherry “to warm the stomach, refresh the spirits and dissipate any beginning lodgement of the infection (plague)” (90). He drank his sack before dinner and upon retiring to bed. He used it as his main antidote to the plague and credited it with saving his life on two occasions when he became ill. One of the most famous images of the Plague in Europe during the Middle Ages were the beak doctors who were fully covered by an overcoat, gloves, boots, hat and a mask which completely covered the face and neck and had a beak protruding from it which was lined with antidotes (wines) to prevent infection. In 1672 Dr. Hodges wrote a poem about this strange outfit entitled the Beak Doctors.

“As may be seen on picture here,
In Rome the doctors do appear,
When to their patients they are called,
In places by the plague appalled,
Their hats and cloaks of fashion new,
Are made of oilcloth, dark of hue,
Their caps with glasses are designed,
Their bills with antidotes are lined,
That foursome air may do no harm,
Nor cause the doctor man alarm,
The staff in hand must serve to show,
Their noble trade where'er they go”. (91)

In 1724 a doctor, author and unnamed “Fellow of the Colleges”, described wine as “the Grand Preserver of Health and Restorer in most Diseases” (92) and in 1775 Sir Edward Barry F.R.C.P., F.R.S. wrote a book called “Observations Historical, Critical and Medical on the Wines of the Ancients and the Analogy between them and Modern Wines” in which he described the use of wine by Hippocrates, Artaeus, Galen, Celsus, Dioscorides and others. He also talked about Dr. Sydenham, “the English Hippocrates” because he most closely pursued Hippocrates' rules in the use of wine.

Dr. William Sandford, a surgeon at the Worcester Infirmary, published “A Few Practical Remarks on the Medicinal Effects of Wine and Spirits” in 1799 “Wine... is undoubtedly one of those real blessings with which a kind Providence has favoured us;

and its true uses and effects have long been known, and considered, by medical writers of very high eminence and authority ... with regard to the uses of wine, and its good effects on the human body in certain states of indisposition, especially, where the persons have not been in the habit of daily using it: - to such it proves particularly beneficial when taken in moderate quantity, as its tendency is to increase the circulation of the fluids, and to stimulate all the functions of the mind and body ... And this was, probably the principal reason that wine, when first introduced medicinally as a cordial into this kingdom, was sold only by the apothecaries, which we are well assured it was about the year 1300 ... Wine quickens the pulse, raises the spirits, and gives more than common animation for the time; but no sooner has the intoxicating delirium ceased than the patient becomes weak, enervated, and depressed in mind and body: here we distinctly see both the stimulant and sedative powers of wine ...” (93).

One Dr. Alexander Henderson, a London physician caused a storm in 1824 when he published a history of wine in which he adopted a temperance stand and wrote profusely about "the deplorable effects of the abuse of wine" (94).

Dr. Henderson later wrote though “Temperately used, it acts as a cordial and stimulant; quickening the action of the heart and arteries, diffusing an agreeable warmth over the body, promoting the different secretions, communicating a sense of increased muscular force, exalting the nervous energy, and banishing all unpleasant feelings from the mind”.

Between 1863 and 1865 a series of articles by Dr. Robert Druitt about the medicinal virtues of foreign wines appeared in the "Medical Times Gazette". The series was later

published as a book in 1873 entitled "A report on the Cheap Wines from France, Germany, Italy, Austria, Greece, Hungary and Australia - Their use in Diet and Medicine". Among his recommendations Druitt suggested old sherry to stimulate the heart, clarets for gout and for measles in children as well as champagne for neuralgia and influenza. He concluded "The Medical practitioner should know the virtues of wine as an article of diet for the healthy and should prescribe what, when, and how much should be taken by the sick" (95).

But in the most comprehensive set of directions for the medical prescription of wine came from in the 1870's from Dr. Francis Anstie, the editor of the "Practitioner" journal and a physician at Westminster Hospital in London. Dr. Anstie's recommendations also appeared as a series of articles, this time in the Practitioner and, like Druitt, was published later as a book in 1877 called "On the Uses of Wine in Health and Disease". In his book Dr. Anstie argued against the opponents of wine stating that its medical use was "established by wide spread custom" and therefore not subject to discussions of "lawfulness or advisability" (96).

He wanted to standardise the medical use of wine and criticised the haphazard way in which different wines were being prescribed by doctors for the same disease stating "it is common to meet with invalids and others who have received diametrically opposite directions as to the choice of beverages from different practitioners of equal standing".

Anstie divided wines into strong wines such as the fortified wines port, sherry, madeira and marsala which were good "as a dietetic aid in debility of old age" and light wines such as table wines with no more than 10% alcohol. He recommended the light wines on

a daily basis with lunch and dinner for healthy people. In fact half his book was devoted to the use of wine by healthy people as a preventer of disease and a dietetic aid, while the other half was in two sections - namely the use of wine as a medicine in acute disease and, the use of wine as a medicine in chronic disease.

Dr. Yorke-Davis, a member of the Royal College of Surgeons in his book "Wine and Health - How to Enjoy Both" published in 1909 shared and reinforced Dr. Anstie's views. For anaemia he recommended wines containing iron, such as Burgundy for example.

During the nineteenth century, when the temperance movement was gaining a following in England and the United States, doctors in continental Europe were not compelled to defend their use of wine so its use as a medicine flourished. Dr. Leobenstein-Loebel of Strasbourg wrote his extensive text "Traite sur l'Usage et les Effects des Vins" in 1817 and administered wines by the spoonful, the goblet and even as an enema.

Armand Trousseau was a professor of medicine in Paris. In 1861 he published "Clinique Medicale de l'Hotel Dieu" and in it he recommended old red vin ordinaire during convalescence after typhoid fever and a mixture of white wine, juniper berries, squill, digitalis and potassium acetate for heart disease.

Dr. Jean-Martin Charcot (1825-1893) was a very famous French neurologist of world renown whose name has been given to many medical signs and diseases such as Charcot's joints, Charcot's cirrhosis, Charcot's crystals, Charcot's disease, Charcot's fever, Charcot's gout, Charcot's pain, Charcot's Posterior Root-Zone, Charcot's sensory

crossway, Charcot's sign, Charcot's syndrome, Charcot's zones, as well as many other diseases and syndromes named in conjunction with other doctors such as Charcot-Marie-Tooth Syndrome, Charcot-Guignon's disease, Charcot-Leyder's crystals, Charcot-Marie's symptom, Charcot-Marie's Type of Progressive Muscular Atrophy, Charcot-Neumann's crystals, Charcot-Robin's Crystals and Charcot-Vigourose's sign. Such was the fame of this man in the medical world.

Between 1899 and 1905 his ten volume "Traité de Medecine" was published in Paris. It was an encyclopaedia of the current European treatments and included wine diluted in water or with Cognac added to it for pernicious anaemia, diets for aortic aneurisms, scurvy, convalescence after diphtheria and broncho-pneumonia, in tuberculosis, stomatitis and endocarditis to name some indications. An endorsement of wine by one so famous as Charcot was not to be taken lightly.

The Spanish doctors Alexandre and Aparici published a book "Valor Terapeutico del Vino de Jerez" in 1903. It praised sherry as an aid for convalescence, for the aged, in pneumonia, and for the overworked.

3.1.12 AMERICA

The North American continent had an abundance of native grape vines. That is why the Vikings called it Vineland. The trouble was that these indigenous vines produced grapes that were generally unfit for winemaking. It was the Spanish who introduced European, (*V. vinifera*) grape vines to the Americas, which eventually flourished in the hotter and drier climate of California, away from the diseases that were to plague

viticulture on the East Coast of America for the first two and a half centuries of settlement and subsequent grape growing failure.

Permanent European settlement of the east-coast of North America began in 1607 when Englishman, Captain John Smith settled in Jamestown, Virginia.

Following this, settlements were established by English Pilgrims at Plymouth Massachusetts in 1620. English Puritans also in Massachusetts in the late 1620's, Dutch settlers in New York in 1624, English at Baltimore Maryland in 1634 and more English in Pennsylvania in 1681.

A Dutch trained doctor, Dr. Lawrence Bohune, settled in Jamestown in Virginia in 1610 and has the distinction of being the first person, as well as the first doctor, that is known to make wine in America and most likely from the native grape Scuppernong. The Governor of Virginia, Lord Delaware officially commended Dr. Bohune "for his care and industry for the preservation of our men's lives" (97) and who later became physician general of the colony of Virginia. Captain John Smith of Pocahontas fame, wrote about drinking Dr. Bohune's wine in Virginia.

Dr. Bohune came to an untimely end when he was killed when his ship, sailing from England to Virginia in 1621, was attacked by two Spanish men-of-war.

Subsequent attempts to establish vineyards by doctors such as English Physician, Dr. Robert Child, in Massachusetts in 1641, Scotsman Dr. Andrew Turnbull in Florida and Italian, Dr. Philip Mazzei in Virginia in 1773, along with others, failed due to the use of

poor native varieties, disease, fighting (local Indians or the British during the War of Independence) and lack of capital.

Eventually things did succeed in the nineteenth century after two important advances in viticulture. Firstly new and better native hybrids were developed which could not only survive in the climate but also make better quality wine. Secondly methods of disease and pest control improved with the use of chemicals such as sulphur and copper based Bordeaux mixture spray; so that the vines, whether they be indigenous, European or hybrids, could flourish disease free.

Again doctors were at the forefront of these new developments. Dr. D.N. Norton from Richmond, Virginia produced one of the best native hybrids later named after him. In 1845 Dr. Robert Valk, from Long Island became the first to successfully cross a native vine with a European vine. Later Dr. George Englemann, a German graduate, from St. Louis, Missouri carried out the most extensive study of American native grape varieties.

So during the nineteenth century viticulture flourished in North America and spread from the East Coast to the Midwest, then onto the West Coast and the natural home of the European grapevine in North America - California. In 1827 Mr. Underhill planted a vineyard at Croton Point in the Hudson River Valley. Upon his death his son, Dr. Robert Underhill, expanded the vineyards and made them the leading ones in the state of New York. Initially he sold only the grapes, which he promoted as his "grape cure" that consisted of eating up to six pounds of grapes daily. After 1859 he turned his grapes into wine and sold the wines from his "Pure Wine and Grape Depot" in Manhattan, New York City. The medicinal virtues of the wine was advertised as "the

pure product of the grape, neither drugged, liquored, non-watered, recommended by leading physicians in all cases where a stimulant of bracing character is required" (98).

Unlike now, the midwest of North America in the nineteenth century flourished with vineyards. Doctors such as Stephen Mosher, Louis Rehfus, John Aston Warder in Cincinnati, Ohio; H. Schroeder of Bloomington, Illinois and C.W. Spalding of St. Louis Missouri all developed vineyards.

In 1866 Dr. Spalding helped to develop the Cliff Cave Wine Company and the first wine and vine industry journal while in 1870 Dr. Schroeder's Mobile Front Wine House had one million grape vines and 10,000 gallons of wine for sale.

California was the ultimate destination for the vine in North America, because in its hot dry and relatively disease free environment European *V. Vinifera* vines introduced by Franciscan missionaries flourished.

In the south of California, where viticulture began in that state, Dr. Benjamin Barton had an 80 acre vineyard near San Bernardino in 1860 while Drs. J.J. White and Lance Hoover had vineyards in Los Angeles. Dr. John Marsh, established his vineyard and made wine on the slopes of Mount Diablo and Dr. Edward Bale established his vineyard near St. Helena. While the winemaker for General Vallejo's famous wines from the Sonoma Valley was a French trained doctor Victor Faure.

But the most successful was Dr. George Crane from the State University of New York Medical School who established in 1859 a 100 acre vineyard, winery and distillery

where he made his famous California sherry. He is famous for showing how good Napa Valley wine could be.

Grape growing and winemaking in North America were delivered a severe set back with the passing of the Volsted Act in 1920. Known as Prohibition, the Volsted Act made sale of alcohol in the United States of America illegal so most vineyards closed down. Only a few making wine for religious rituals or growing tabled grapes survived until the Act was repealed in 1933.

After Prohibition an American branch of Frenchman Andre Simon's Wine and Food Society was established with many doctors such as Dr. Salvatore Lucia, head of the Department of Preventative Medicine at the University of California School of Medicine amongst its members. Then in 1938 in San Francisco the Medical Friends of Wine began with only the medical profession allowed to be members. This has grown into a large and respected medical society promoting the social and medical benefits of consuming wine in moderation and helping to foster the current wave of medical vigneron in California and elsewhere in the USA.

Thus, by the end of the nineteenth century wine was established as a medicine in continental Europe with the temperance movement decreasing its favourabilty in England and the United States. In the coming years it was to face the test of all the new wonder drugs being produced by the pharmaceutical industry, which could replace its role such as aspirin for pain and fever; barbiturates for sedation; vitamins for deficiency diseases; and as tonics, sulphurs and other antibiotics for infections; tranquillisers for anxiety and so the list goes on.

In section 3.3 "Wine and Health - Current Research" I will show how wine matched, overcame and in many ways surpassed these new age wonder drugs.

SUMMARY OF THE MEDICINAL USES OF WINE BY THE ANCIENTS

1. antiseptic - of wounds
- of water
- pre-operatively
 2. tranquilliser/sedative
 3. hypnotic
 4. anaesthetic
 5. anti-nauseant
 6. appetite stimulant
 7. tonic/restorative during convalescence
 8. treatment of anaemia
 9. diuretic
 10. purgative
 11. anti diarrhoeal
 12. cooling agents
 13. poultices
 14. mixing medium for other medicines - sometimes with honey
- } different types of wines

3.2 WINE AND HEALTH IN AUSTRALIA

3.2.1 INTRODUCTION

In this section I will examine the history of the use of wine as a medicine in Australia, from the First Fleet in 1787, until today. I will show how wine was used to keep the convicts alive during the long voyages to Australia and how widely wine subsequently was used by doctors in Australia.

Australia is unique in that so many of its wine companies were established by doctors, beginning with Dr. William Redfern and Sir John Jamieson in 1818, only 30 years after the First Fleet. Some of Australia's largest and most famous wine companies, such as Lindeman, Penfold, Hardy, Houghton, Angove, Stanley and Minchinbury, were founded by doctors; in fact about two thirds of any vintage in Australia is crushed by companies founded by Australia's over 180 wine doctors.

It all began in 1717 when the Transportation Act was passed in Britain. In the eighteenth century over 200 crimes carried the sentence of death by hanging. These crimes included poaching, stock stealing and stealing as a servant, as well as the more severe crimes such as crimes of violence against another person. The central ethos of the British penal philosophy then was punishment and retribution, not understanding and rehabilitation (we have a long way to go to get to this) as today, to which was now added by the Transportation Act banishment and exile. But this inhumanity was now also tempered by the humanitarian ideas of the option of mercy now available to

magistrates and judges who could now commute a death sentence to transportation to the colonies for life.

In 1717, convict transportation meant transportation to the open-air gaols of the American colonies, especially to the cotton plantations of Virginia; but the American War of independence in 1776 ended this practice. After 1776, prisoners were concentrated in city gaols such as in Exeter, Nottingham and Bradford, or on board the hulks of disused vessels tethered to river embankments such as in the ports of London, Portsmouth and Plymouth. Outbreaks of “gaol fever” or louse-borne typhus followed, forcing the authorities to look for an alternate destination for their convicts to clear the gaols and hulks. One experiment sending them to Gambia in tropical West Africa failed when 334 died, 271 deserted - fate unknown but it could be assumed they perished in the jungle and of the remaining 141 no account was given. Other British colonies were eliminated for various reasons - Canada because it was feared the convicts would escape and find freedom in the newly independent American colonies, or they would join French settlers in a rebellion against British rule; India because, again, it was feared that the convicts might escape into the established Indian infrastructure of towns and cities to become lost to the authorities forever, and later South Africa, Fiji and New Zealand because of the hostile indigenous natives.

Australia was chosen as the destination for the future convict transportation because it was isolated, with no land connection to anywhere else, the indigenous aborigines were thought not to be hostile, with no infrastructure of towns or cities to escape to and Sir Joseph Banks, the botanist on board Captain Cook’s Endeavour voyage of 1770, believed that the vegetation on the east coast of Australia, especially Botany Bay, could

support a penal colony. Australia was also chosen for strategic reasons, to keep the French out of the Pacific region and to provide a base to attack the Dutch in Java and the Spanish in the Philippines. Later it could also be a base for trade with the East Indies.

So transportation to Australia became the central tenet of British penology from 1787 until 1868, when it ceased in Western Australia. During this period approximately 160,000 male and female convicts made the sea voyage to the other side of the world, to Australia, with the voyage lasting anywhere from 258 days for the eleven ships of the First Fleet to 106 days for the last convict transports to Sydney, whereas the fastest voyage to Fremantle, on the other side of Australia, took 88 days (1).

3.2.2 INFLUENCE OF EARLY WINE DOCTORS AND CONVICTS

Convict transport ships had one of three origins. Either they were ex Royal Navy ships, converted for the purpose, ex-slaving vessels, or they were purposely-built convict transport ships. The size of the ships ranged from the 227 ton Alexander II, built in America in 1811, to the 973 ton for General Hewat, built in Bengal in 1812 (2).

The survival of the convicts depended on the surgeon superintendents of the transport ships and, up until 1815, not all ships actually carried one. During the first 35 years of transportation, these surgeon-superintendents were able to effect a ten-fold reduction in mortality rates on board these convict ships (3). This was due in no small part to the use of wine as a preventative medicine.

In 1787, when the First Fleet was preparing to sail from England for New South Wales, Surgeon John White, the surgeon in charge of the health of all convicts, sailors, soldiers and free settlers, was not satisfied with the standard rations issued to the fleet. On 7th February 1787, White wrote to Governor Phillip, the Governor of the proposed new colony in Australia, asking for what he called “necessaries” (4). This is a term he used to describe extra items of food not included in the standard ratio, such as sugar, currants, rice, sago, barley, soup, tea, spices and wine.

Surgeon John White (1756-1832) entered the Royal Navy on 26/6/1778 as a third surgeon on board HMS Wasp. On 2/8/1781 he gained his diploma of the Company of Surgeons and became the surgeon on HMS Irresistible on 26/6/1786. Following this, he became the chief surgeon of the First Fleet. In this role he was responsible for the 1,487 voyagers made up of 759 convicts, 3 children of convicts, 252 marines, wives and children, 20 officials, 210 seamen of the Royal Navy and 233 merchant seamen.

White was a natural historian as well as a doctor, with a keen interest in bird life. He had his book “Journal of a Voyage to New South Wales” published in English in 1790, and then later also in German, Swedish and French. White was given a total of 130 acres in land grants in the Leichhardt area of Sydney. White Bay is named after him. In December 1794, White returned to England and in 1796, resigned from the Royal Navy, eventually settling down and marrying in 1800 (5).

White used wine as a medicine throughout the voyage to Australia to prevent malnutrition and diseases. For example, on 20th December, 1787 White wrote the following in his diary: “On those days the scurvy began to show itself in the Charlotte

(one of the convict transport ships), mostly among those who had the dysentery to a violent degree; but I was pretty well able to keep it under by a liberal use of the essence of malt and some good wine, which ought not to be classed among the most indifferent antiscorbutics. For the latter we were indebted to the humanity of Lord Sydney and Mr. Nepean, principal and under secretary of state” (6).

Scurvy

Scurvy is a disease due to a lack of vitamin C or ascorbic acid where the connective tissue in the body breaks down leading to bleeding, swollen gums, wobbling teeth and eventually listlessness and death. It was responsible for more deaths during the age of sail exploration, from Columbus crossing the Atlantic ocean in 1492 until steam powered ships dominated in the mid 1800's, than all the storms, shipwrecks, wars and other diseases such as typhus put together. Over 2 million sailors are estimated to have died during this period from scurvy. For example - During the Seven Years War with France, Great Britain enlisted 184,899 sailors (volunteered or press-ganged) for its Navy of whom 133,708 died from disease, mainly scurvy. By contrast only 1,512 died in action according to the Annual Register of 1763 (7).

Because it caused so many deaths and led to the destruction of so many expensive ships due to lack of fit crews, a cure for scurvy was given a high priority by the British Admiralty especially after the fateful voyage of Commodore Lord Anson in 1741. George Anson circumnavigated the world between 1740 and 1744 to harass Spanish shipping in the Pacific Ocean. He left England with nearly 2,000 men and six warships but returned with one ship and about 200 men, the rest having succumbed to the effects

of scurvy.

The hunt for the cure for scurvy spanned many centuries but it was the British Navy, after the disastrous voyage of Lord Anson, which really pushed for a cure. In 1747, Dr. James Lind, an English doctor conducted the first controlled trial in medical history on board the *Salisbury* in the English Channel to show that citrus Juice cured scurvy. Unfortunately Dr. Lind's "Treatise on the Scurvy" published in 1753 was ignored by the Admiralty.

Between 1768 and 1779, when he was killed in Hawaii, Captain James Cook led three great voyages of discovery around the World during which time he discovered the east coast of Australia in 1770. Because of these very long voyages Captain Cook became very interested in the prevention of scurvy claiming he had cured it by using wort of malt instead of citrus juice, as his preferred antiscorbutic.

It was not until 1795 when Sir Gilbert Blane convinced the British Admiralty to issue a daily ration of lemon juice to all of its sailors that scurvy was eliminated from the Royal Navy.

It is interesting to note the role of wine in the story of scurvy's elimination. In his standard medical history text "Classic Descriptions of Disease" Dr. Ralph H. Major devotes a relatively large section to scurvy and its significance is highlighted by the fact that it is listed as the first of the "Deficiency Diseases" in the book. Major lists descriptions of the disease and possible cures by Jaques de Vitry; Jean, Sire de Joinville; Jacques Cartier; Dr. James Lind and finally Dr. John Huxham. In 1747, 6

years before Dr. Lind's "Treatise on the Scurvy", Dr. Huxham presented a paper called "A Method for Preserving the Health of Seamen in Long Cruises and Voyages" in which he states "... that a vegetable acescent Diet and Regimen, fresh air, fresh provisions, subacid and vinous Drinks, are its certain and speedy cure, when not very far advanced." and ... "that the officers, who carry Wine, Cyder, Lemons, fresh Provisions are infinitely less affected with the scurvy, than the poor common sailors, who are not so provided" (8). So even back in the early and mid 1700's wine was recognised as a preventer and treater of deficiency diseases. (Refer also to Surgeon John White's description of the use of wine to prevent scurvy during the voyage of the First Fleet earlier in this thesis, to Dr Jean-Martin Charcot's "Traite de Medicine" reference to wine preventing scurvy earlier in this thesis and to Dr Frederick Norton Manning's annual report of 1870, presented later in this thesis, for Tarban Creek Lunatic Asylum). This would not only apply to sailors but also to anyone subjected to poor rations and hygiene such as prisoners in gaols and patients in lunatic asylums, as described elsewhere in this thesis.

So good was Surgeon White's care that only 24 of the 759 convicts in the First Fleet died. It was a different story with the Second Fleet. Conditions were totally different in the Second Fleet because unlike in the First Fleet where the transport company was paid to get the convicts alive to Australia and was a naval operation with the benevolent Captain Arthur Phillip and Surgeon White involved, the Second Fleet transport company was paid in full to get the convicts out of England with no concern about their care after that so 274 of the 965 convicts died during the voyage out to Australia. After the Second Fleet disaster, the payment system changed so that contractors received the last £5 of their fee per convict only for those convicts who arrived in Sydney in good

health. When the Second Fleet finally arrived in Port Jackson in June 1790, a similar number of convicts as had died on the way out were so sick they had to be hospitalised in the infant colony's basic hospital at Dawes Point (now under the Southern Pylon of the Harbour Bridge), so only about one third of the original convict population were fit for work upon arrival. This was a sad state of affairs for the colony and the convicts as they were needed to help grow food for the starving colony after the supply ship *Guardian* had sunk in 1789 off South Africa leaving the colony with no back up food supply.

After the Third Fleet in September 1791, convict transport ships came out to Australia singly and not in groups or fleets. Whether the ship had a doctor on board or not for the long voyage to Sydney Town was largely up to the Transport Company that owned the ship. The turning point in the medical treatment of convicts, during transportation out to Australia, came in 1814 with the voyage of the *Surrey*.

Prior to this, however, the *General Hewart* and the *Three Bees* had reached Sydney with their cargo of convicts in a shocking state. The death rate of four ships that year had been 1 in 89.5 convicts, but with the voyage of the *General Hewart*, the *Three Bees* and the *Surrey*, that rate rose to 1 in 9.1 convicts - a figure that shocked Governor Macquarie into action.

The *General Hewart* left Portsmouth on 23rd August 1813 with 300 male prisoners. When it arrived in Sydney, after a voyage of 165 days, 34 of the prisoners had been buried at sea due to dysentery. The *Three Bees* left Falmouth on 8th December 1813 with 219 male Irish convicts on board. By the time she had arrived in Port Jackson on

6th May 1814, 9 had died but 55 of the survivors had to be hospitalised due to dysentery. This set the stage for the voyage of the Surrey.

The Surrey was loaded with 200 male convicts, marine guards and her crew. She left England on 22nd February, 1814 in company with another convict transport the Broxbornebury (9). During the voyage her master, Captain James Patterson, kept the convicts closely confined with poor ventilation because he feared the convicts would take over his ship. The bedding was not cleaned or aired and the cells were not properly cleaned or fumigated. After leaving Rio on April 21, “gaol fever” or louse borne typhus took hold, not only of the convicts but also the guards and crew. By the time the Surrey reached the east coast of Australia the death toll had reached 51 including 36 convicts. That was a pity, but what was really bad for business was that the Captain of the ship, the First Mate, the Second Mate, the boatswain, the ship’s surgeon, six seamen and four soldiers had also died. So there was no one to navigate the ship. Fortunately the Broxbornebury passed by and transferred a brave man on board the fever ridden ship, to navigate it into Port Jackson. Once inside the Heads of Sydney harbour the ship was quarantined on the northern shore of the harbour and the many remaining sick were treated in tents erected as a temporary hospital.

Governor Macquarie, The Governor of New South Wales, ordered an investigation and appointed Dr. William Redfern to do the job. Redfern was Sydney’s leading doctor as well as Australia’s first wine doctor. He had established his vineyard “Campbellfields” to Sydney’s south west in 1818. Redfern had also been a convict, having been transported to Australia on board the Minerva in 1801; so he knew both sides of the problem. A complete biography of Dr. Redfern appears later in this thesis. It was this

investigation, along with Redfern's findings and recommendations that was to have a marked impact on Australia's wine industry. Redfern found out that the Captain had withheld rations from the convicts, including their wine ration, so that he could sell them at various ports on the way out, such as Rio and Capetown, not to mention the high prices he would have commanded for them in Sydney town, to make extra money for himself. As a result of this deprivation, the convicts became weak and more susceptible to disease. He also found that the ship's surgeon had no authority over the ship's master, so that his recommendations for better ventilation, the cleansing of bedding and fumigation of cells, were overruled and ignored. Redfern also found fault with other things such as inadequate clothing and withholding of soap, also so it could be sold later in Sydney. Such basic things as adequate clothing, food, water, wine and cleanliness meant the difference between life and death for these people.

In a letter to Macquarie dated 30th September, 1814, Redfern made his eleven recommendations about how to prevent further tragedies, such as had occurred during Surrey's 1814 voyage (10). Redfern recommended, amongst other things, that a quarter of a pint of wine, with added lemon juice, be given to each convict each day, and that this be done out in the open so no one could withhold their ration. This was to prevent malnutrition and scurvy. He also recommended that every transport ship have a properly qualified doctor on board, preferably a Royal Naval surgeon who was used to shipboard life; that these surgeons be given more power and authority by being commissioned, so that they were not subordinate to the ship's master and that they be solely in charge of and responsible for the convict's welfare, while the ship's master be solely in charge of the safety of the ship and hence unable to take the convict's rations any more for his own use and profit.

After 1815, and the defeat of Napoleon, there was no need for a large standing army or navy because the threat of Bonaparte had been defeated; so many surgeons were retired on half pay. These men would have found their prospects better off in Australia, and because Australia was the only British colony taking convicts last century, many of them came out.

Redfern's recommendations were acted upon immediately, so Australia found itself host to many naval surgeons doing convict transport and later migrant transport service. These doctors knew the benefits of wine, including, as Redfern put it, to "maintain the Vigor of the System"; and "Dispel Despondency" from being kept confined below decks in prison cells (11).

The better wines from Europe would have been kept by the English wine merchant, and the poorer wines shipped out to Australia. By the time the wine had spent six months in a leaking oak cask in the bilge of a ship it would have run the risk of oxidation and seawater contamination. So these doctors retired to Australia and established their vineyards to make wine to help their patients, thus avoiding the potential problems associated with transporting wine to Australia. That is why the Australian medical profession's symbol should not be the traditional snake caduceus, but a glass of wine and a set of convict leg irons, because Australia's medical profession began with convict transport doctors maintaining their convict patients' health with wine.

Redfern's recommendations were later published as "Instructions for Surgeons: Superintendent on board convict ships bound for New South Wales or Van Diemens

Land and for the Masters of those ships” (12). This book was standard issue to all transports, their masters and surgeons, and was one of Australia’s first Public Health documents. Today Australia has over 180 wine doctors, but the Australian medical profession in general is up to its stethoscopes in wine not only as consumers, but also as prescribers and producers; it is an integral part of our unique medical heritage. If it wasn’t for the Surrey’s corrupt captain, Australia may have had a shortage of doctors.

After Redfern’s recommendations, convict death rates dropped from 1 in 3.1 convicts embarked on the three ships (Neptune, Surprise and Scarborough) of the Second Fleet in 1790 to 1 in 20.0 convicts for the Frances Charlotte in 1833, with the Sultana’s voyage of 1859 having no deaths among its 224 convicts (13).

One must also remember that the convicts transported to Australia were not great physical specimens to start off with prior to their long voyage to Australia. Crime then was associated with poverty, illiteracy, mental retardation and poor health. Many convicts suffered from chronic diseases such as gonorrhoea, boils, syphilis, conjunctivitis, tuberculosis and malnutrition before they embarked on their transport ship; which only made the voyage worse, with its seasickness and fear due to being exiled to the other side of the earth, never to return to England. Scurvy, dysentery and gaol fevers, such as louse borne typhus, were common occurrences during the voyage. So the convicts were predisposed to poor health long before their voyage to Australia and it was compounded by their time in city gaols or river hulks prior to transfer to convict transport ships. Dr. Redfern, for example, spent four years in a hulk prior to being transported to Australia in 1801. So it is quite remarkable that the death rates

were not higher. We have the surgeons and their use of wine to thank for that.

During the early days of transportation the surgeons were a poor lot. They were either too young and inexperienced, being straight from medical school and not able to get a job elsewhere, or they were old and disillusioned doctors, many of whom were inebriates and incapable of continuing a medical career ashore.

It was very difficult for the owners of convict transport ships to compete with the owners of passenger ships, and even slave ships, for experienced surgeons, because the convict service involved very disagreeable work and the round voyages to Australia were much longer.

The following extract from Dr. Redfern's report shows how lowly surgeons were thought of by ship's captains and how their treatment was humiliating.

"They are employed by the owners of the ships," reported Redfern, "and placed immediately under the command of the masters of the transports, who, with few exceptions, having little claim to education, refined feeling, or even common decency, generally treat their surgeons, as they do their apprentices and men, with rudeness and brutality. Incapable of appreciating the value of learning, and despising all knowledge beyond what they themselves possess, they avail themselves of every opportunity to insult and mortify their surgeons. Under this species of treatment, with no means of redress during a long voyage, the mind becomes paralysed, they view their situation with disgust, and, if they have the means, should they not have been so before, they soon become confirmed drunkards. Hence their duty is neglected, and the poor convicts

become the unhappy victims of the captain's brutality and the surgeon's weakness, want of skill or drunkenness. That this picture is not surcharged, the records of the colony will furnish but too many proofs. Yet, at the same time, it is but fair and just to observe that, although this is by much too frequent, it is not so general but there is now and then an exception" (14).

Eventually the standard improved so that the position of surgeon superintendent on board a convict ship required specialised training and it became a respected branch of medicine leading to the discipline of prison medicine in the colonies. Many transport doctors stayed on in Australia to found the Colonial Medical Service, and many became prison doctors for the Colonial Prison Service and administered to the convicts in Australia's many gaols. Another positive outcome of the convict transport doctor's experience was the Passenger Act of 1855. The passage of this Act gave migrants on board British migrant ships bound for any of the British colonies complementary and equivalent civilian legislation requiring a doctor on board with appropriate medicines and wine.

3.2.3 WHAT MOTIVATES DOCTORS TO ESTABLISH VINEYARDS

Australia has a unique relationship between its medical profession and its wine industry. In no other wine producing country has so many vineyards been established by a single professional group. These busy medical men had many interests other than medicine and were dynamic enough to pursue them. So that you find someone like Dr. W. T. Angove, besides being a country doctor and establishing Angove's Wines, was also a World Class ornithologist, commissioned in the Defence Forces, a noted

photographer and geologist and for sports he was an excellent angler, marksman, sailer and early motorist. So why do so many doctors establish vineyards in Australia?

Most people would cynically say that the main motives for a doctor to establish a vineyard were, firstly, to get a cheap source of alcohol and secondly, to become a primary producer and thus avoid tax. Let these misunderstandings and misconceptions be laid to rest straightaway. There are far cheaper and simpler ways to get drunk than to establish a vineyard - you could make cheap "home brew" beer in your garage and there are far easier ways of gaining the tax advantages of being a Primary Producer than running a vineyard, such as investing in a managed pine forest, so often promoted in the medical journals nowadays. A lot of "Syndicate" wineries set up by entrepreneurial accountants and lawyers to lure in other professionals such as doctors, failed because they were established for the wrong reasons - namely tax minimization. They were not established as owner operated and owner motivated businesses hence were doomed to failure from conception because no one was really concerned with the wine, only tax avoidance.

So why do doctors in Australia establish vineyards and develop wineries so frequently?

In Europe early vineyards were established by monks for making wine for their own use as table wine and altar wine, for sale for extra income for the monastery and as a medicine for the poor whom they looked after. Before the 16th century social welfare was the responsibility of the Church. Alms houses were attached to the monasteries and churches to provide shelter for travellers and the aged. Hospitals were also attached to care for the sick and infirm. In those days the sons of the nobility who weren't going to

inherit the title or become soldiers or politicians usually entered the Church. Monasteries became places of high living. Much wine and food was needed to cater for the tastes of these sons of nobility. Hence monasteries became powerful and also became deeply indebted - some of the reasons why King Henry VIII broke them up in England as he did.

Late in the 16th century welfare became a civil responsibility hence less wine was needed by the Clergy. Vineyards were later established by aristocratic families who had the land and enough capital to do so.

Relatively recently in the history of viticulture vineyards were established in Australia - a great number of which some experts say up to half, were established by medical men. In Australia in the 19th century there wasn't the religious order infrastructure as in Europe to form the basis of a wine industry. Only one religious run winery still continues today in Australia that is Sevenhill with Brother John May in charge. Also in Australia there weren't the established large aristocratic families. Australia was populated by convicts, soldiers and free settlers who were mainly poorer farmers - who else would want to come to the other side of the world to a virtually uninhabited continent two hundred years ago? If you were rich and well established in England, why risk coming to Australia? But some men of modest means and a lot of determination did come eventually. They were granted, by the Governor, large tracts of land and convict labour according to their capital means. Most became "self made" men with their wealth based on agriculture - sheep, cattle, wheat and timber mainly (mineral exploration and industrialisation were a long way off). These men formed Australia's version of an Upper Class, our "Squattocracy" and included the likes of the MacArthurs

and Wentworths. Other members of the Squattocracy were the Officers of the army occupying Australia and guarding the convicts and Officers of the Royal Navy who serviced and supplied Australia from England. The final component of the Squattocracy was the Professional men. There were few lawyers, accountants, engineers, architects etc. most were medical men a number of whom had come out to Australia as ships' Surgeons on board the convict ships and later the migrant ships.

It didn't take long before doctors ventured out into the wilderness. Most explorers took a doctor with them on their expeditions e.g. Surgeon John Harris, who accompanied a lot of the very early expeditions and Dr. Alexander Berry accompanied Hume on his explorations south to the Shoalhaven region. Soon afterwards settlers followed and a local doctor was a necessity. As the new frontiers advanced with new settlers, so the "medicos" followed and were usually the only professional person or "cultured" upper class person in the district, the rest being soldiers and settler farmers. The doctors were given large grants of land and became farmers also, but because of their background from upper and middle class families and their subsequent exposure to wine at home as the norm, not only grew wheat and raised sheep and cattle as the others did but established vineyards to satisfy their tastes. An example of the remoteness of these new districts from everywhere else and the loneliness of the doctor with regard to other professional people is shown in the fact that most district doctors also became the local district magistrate as there was no one else of character available. The doctor had a high social status because lawyers, accountants and other professionals weren't prepared to "go bush" in these harsh early settlement days.

As stated earlier, many of the original “Wine Doctors” came out as ships’ surgeons assigned to either convict transport ships and Royal Navy ships or later on to migrant ships. Naval Surgeons supervised a Sick Parade daily, treated those in the ship’s hospital and checked on the diet and rations for crew and convicts. Once his duties were done a Naval Surgeon had much spare time and traditionally became the Secretary of the Officers’ Wardroom on board ship to fill in some of this free time. One of the duties of the Secretary of the Wardroom was to procure all the wines consumed in Wardroom and to supervise its cellar, hence the Naval Surgeons usually developed an interest in wine initially and then some expertise in it later. This interest led to their wishing to develop their own vineyard later when they had secured their grant of land in the colony of New South Wales.

The medical fees last century were relatively poor and the ability of rural folk to pay was also usually poor. The local country doctor sometimes was paid with produce or not at all. Therefore there was need to diversify his income and what better way than by producing something that not only gives income but can be used as a medicine as well. The medicinal virtues of wine will be discussed fully in the next chapter but suffice to say wine had a great medical following for use as a food source, a tonic, and a source of iron for anaemic patients and as a tranquilliser.

Most doctors being well educated and cultured had developed a taste for the finer things in life and didn’t much like the quality of the wine imported into Australia from Spain, France and Portugal via England. Drs. T. Fiaschi and C. Penfold were great critics of the lowly nature of the wine imported into Australia and vowed to remedy the situation by making their own premium wine. Australia seemed to be at the “end of the list” for

export of good wines, we seemed to be the “dumping ground” for cheaper wines in the 19th century along with other distant colonies, no doubt, and it was the doctors who were most vocal about changing this.

England in the 18th century was in the grip of extensive drunkenness due to spirits, mainly gin and rum. Gin was cheaply distilled in London and rum was purchased cheaply in the West Indies and became popular after rum suppliers won a Royal Navy tender for alcoholic supplies for its seamen. Because of a lack of currency in the colony rum was used as a form of payment for work and early businessmen in Sydney procured licences from the Governors to import rum. Hence drunkenness in early Sydney was well established - “our rum age” not only because it was a popular drink but also because it was used for wages. Indeed alcoholic brain damage was one of the main causes for insanity in the 18th and 19th centuries, the other being tertiary syphilis. Against this background of drunkenness due to spirits, Dr. Lindeman advocated the civilised use of table wines at dinner to promote family conversation and to counteract the intemperance due to these spirits. Another prominent early Australian colonist who grew grapes and advocated the use of wine as against spirits was Rev. Samuel Marsden. It is very hard to become “dead drunk” with table wine - one has to set about it with a well organised will. Dr. Lindeman’s words over a century ago still are relevant today. Here is what he had to say to the editors of the NSW Medical Gazette in 1871, (Note that the letter was incorrectly signed W.T. Lindeman and not H.J. Lindeman).

PURE WINE AS A THERAPEUTIC AGENT, AND WHY IT SHOULD BECOME
OUR NATIONAL BEVERAGE.

(To the Editors of the Medical Gazette)

“Sirs, - More than thirty years ago, when I first arrived in the colony, I was induced to plant the vine, and to impress upon my fellow-colonists the desirability of doing so likewise, seeing the great necessity there existed for supplying a pure exhilarating wine to take the place of ardent spirits and of adulterated wines and beers then and now the popular beverage of our community, the use of which frequently induces the diseases I have found mostly to be guarded against in our climate - namely, those arising from derangement of the liver; to suffer from which too often robs life of enjoyment by enveloping it in a perpetual fog of mental depression, and for which depression relief is generally sought in the deleterious stimulants above-named, which invariably add fuel to fire, thereby crowding our community with the inebriate and insane.

It was natural to hope that a wise government would have seen the value of encouraging a step tending to scatter health and enjoyment, and to advance sobriety among the people it rules over by allowing this wine to be sold without any restrictions further than by demanding a small fee in the shape of a license from a vendor, sufficient to pay for the surveillance necessitated to be kept by the dishonest trader, who might otherwise for his profit adulterate it. But this has not yet been found the case. Several years ago a bill was introduced into the house by Mr. Holroyd with the view of getting this great boon conferred upon our community, but King Rum was found all too powerful, and his then influence upon electors, I believe, was the sole cause of its being rejected - I must not say rejected (it would have been well had it been so,) for it was

passed in such a mutilated form as to appear a burlesque upon legislation, and to become a stumbling block, over which all future attempts have fallen. Sir, the advocacy of this cause I cannot but think should be taken up by the members of the medical profession, who are for the most part aware of the value of a pure wine as a therapeutic agent, and how materially we should benefit both in health and morals if it became our national beverage.

I have spent many years of my life trying to bring this about by doing everything within my limited orbit to inculcate a taste for a pure, dry, and thoroughly fermented wine, free from excess of undecomposed sugar and light in alcohol, resembling as much as possible the pure growths of Bordeaux and the Rheingau, and for the production of which our climate and soil are pre-eminently adapted.

To change a national taste in a life-time I never had the vanity to propose to myself, but to advance it somewhat is something to be proud of and it will be a grand step gained to get the members of our profession to enlist themselves in this good cause, which, by bringing it prominently before them (with your permission) in the leaves of the Medical Gazette, I hope to do, knowing how great is the influence of the profession when stepping forward to advance mankind.

I have the honour to be, Sir,

Your obedient servant

Sydney, June 12, 1871.

W.T. LINDEMAN, M.R.C.S. Eng.

Note this is signed by W.T.LINDEMAN not H.J.LINDEMAN, a typographical mistake by the Medical Gazette.

One can only theorise, as James Busby did, as to what our national drink would be today if we had been discovered first by La Perouse instead of Captain Cook and had been subsequently settled by the French instead of the British.

In the early days of Australian colonisation jobs were hard to come by because the infrastructure necessary to provide high employment had not yet been established. To guarantee employment for their children was one of the prime motives of some wine doctors especially Dr. Kelly and Dr. Angove. A lot of wine doctors' ventures ended up as family businesses run by the doctor's wife and children after his death. Good examples of this in the past are Dr. Penfold's wife, Dr. Ferguson's son, Dr. Lindeman's sons and Dr. Fiaschi's family. Today Dr. Max Lake's son, Stephen Lake, took over the task of winemaker at Lake's Folly. Mark Lloyd, son of Dr. Hugh Lloyd, is now the winemaker at Coriole and Vanya Cullen, daughter of Dr. Kevin Cullen and his winemaking wife, Di, has now joined the team.

Nowadays relatively high cashflows from the labours of medicine allows the setting up of a vineyard, which is expensive due to the high cost of labour and materials. Today there are no convicts as used by the earlier doctors or cheap migrant labour such as used by Dr. Alexander Berry at "Coolangatta" or 19th century Italian peasants as used by Dr. Fiaschi at "Tizzana" and "Augustines" to build the cellars, till the soil and tend the vines for board and lodging. This income to pursue one's love of wine is also shared by others in a similar economic position such as lawyers, modern day entrepreneurs and

developers but it is mainly doctors who fulfil their dream. There are tax advantages also from being a primary producer and the costs involved with the initial capital outlay in establishing a vineyard are tax deductible hence help lighten one's tax burden.

Doctors are trained to be the leaders of the medical team hence are usually well read and decisive. They are self motivated, independent, energetic singular people - qualities necessary to make a "go of it". They have been at the forefront of new ideas and new technologies in the Australian wine industry from the early 1900s when Sir John Jamieson was the first to establish a terraced vineyard and introduce a steam pump for irrigation in Australia at "Regentville". Dr. Kelly was the first to introduce contour ploughing to the Australian wine industry at "Tintara" to stop erosion, Sir John Harris introduced the yeast to make Flor sherry into Australia, Dr. Max Lake was the first of the new wave of wine men in the Hunter Valley and introduced Cabernet Sauvignon against all the local "experts" advice. Drs Middleton and McMahon reintroduced wine into the Yarra Valley near Melbourne, Dr. Harkin started the wine industry at Chiltern, Dr. Hamilton was the first to make whites his forte in his district, the author was the first to introduce chambourcin into the Hunter Valley – the list goes on.

The modern day wine doctor seems to be aiming to achieve the "Boutique Winery" philosophy of the pursuit of excellence in winemaking by making small batches of premium varietals - quality not quantity. From the beginning of their education doctors are trained in the sciences associated with wine making and more importantly are trained to observe and analyse - essential requirements for a winemaker. Doctors are trained in botany, pharmacology, microbiology and most importantly, in organic chemistry and biochemistry, all playing their part to mould a winemaker. Plus there is

the intellectual challenge of making the wine. The mental discipline learnt from medical training helps here also.

As stated earlier the medicinal virtues of wine and the need to have wine available to treat his patients, was one of the main driving motives for so many doctors establishing their own vineyards. Even as late as the 1930's, Dr. Harkin's red wine from Chiltern was promoted in England as a treatment for anaemia.

3.2.4 LIST OF AUSTRALIAN WINE MAKING DOCTORS

The following list is the result of 20 years of research into Australia's Wine Doctors from various sources and family records by myself.

SYDNEY – PAST

Alexander BERRY	Crows Nest	1850's
William BLAND	Mark Lodge	1840's
James BOWMAN	Lyndhurst	1833
Thomas FORSTER	Brush Farm	1831
Sir John JAMISON	Regentville	1818
Frederick MANNING	Tarban Creek Asylum	1870
Charles McKAY	Minchinbury	1860
William REDFERN	Campbellfields	1818-1824

SYDNEY – PRESENT

Barry BRACKEN (Orthopaedic Surgeon)	Richmond Estate
Darrell CHAMBERLAIN (G.P.)	Table grapes at Orchard Hills
Graham DINNING (Surgeon)	Table grapes at Orchard Hills
Sue HANCKEL (G.P.)	Camden Bridge Farm (now Camden Estate)

HUNTER VALLEY – PAST

James BOWMAN	Ravensworth	1824
Henry John LINDEMAN	Carrawa	1843
James MITCHELL	At Stockton	1840's
Robert PARK	Lewinsbrook	1826/1873
Richard READ	Kelso	1880's

HUNTER VALLEY – PRESENT

Lance ALLEN (G.P.)	Tamburlaine
William BASIL (G.P.)	McPhersons
John BURGESS (Radiologist)	Rothbury Estate
David DIXON (G.P.)	Terrace Vale
Ken DOBLER (G.P.)	Kirkton Park
John FARRELL (Endocrinologist)	Farrell's
Max LAKE (Hand Surgeon)	Lake's Folly
Don MAXWELL (Anaesthetist)	Maluna
Frank MILLS (Surgeon)	Rothbury Estate
Philip NORRIE (G.P.)	Pendarves Estate

Gerry O'NEIL (O & G)	McPhersons
Newton POTTER (Anaesthetist)	Allanmere
Ivan ROBERTS (Sports Medicine)	Welby Park
John SCHMIDT (O & G)	Talga
Peter SEVILLE (Pharmaceuticals)	Brokenwood
Bruce SHEPHERD (Orthopaedic Surgeon)	Richmond Grove
Bob SMITH (Orthopaedic Surgeon)	Hordern's Wybong
Timothy HAMILTON (G.P.)	
Brian McLAUGHLIN (Anaesthetist)	Tamburlaine
David WALKER (General Surgeon)	
Geoff WHITE (G.P.)	
Kevin WHITE (Pathologist)	
Quentin TAPPERELL (Dermatologist)	Quentins

OTHER AREAS IN NSW – PAST

Alexander BERRY	Coolangatta	1830's
George BUSBY	Bathurst District	
William CARLYLE	Hamilton	Late 1830's
John DOBIE	Clarence River	1840's
Thomas FIASCHI	Augustines	1918
Charles GABRIEL	Macleay River	
Thomas HENRY	Grafton	Late 1890's
Louis SEGOL	Beaulieu	1870's

PRESENT

Ray HEALEY et al (Surgeon)	Augustine, Craigmoor
FRANKLIN	} (Radiologists) Amberton
JACKSON	
KITCHINER	
VAUTIN	
Harry GOODMAN (Cardiologist)	Hapsleigh
HENDRY (Biochemist)	Affleck
McMANUS (G.P.)	McManus Wines
MADEW (G.P.)	Madew
ROGERS (Ophthalmologist)	Augustine
TOMPKINS (Psychiatrist)	
WHISH (G.P.)	Gilgai Wines
Wilson WYLIE (G.P.)	
VICTORIA – PAST	
ARMSTRONG	Ararat Asylum
BEATTIE-SMITH	Ararat Asylum
Robert BOWIE	Sunbury
Richard FETHERSTON	
Charles HARKIN	Chiltern Wines
Sir John HARRIS	
Robert HOPE	Lynburn
Auguste MULLER	Melville
Louis L. SMITH	L.L. Vale
WATKINS	Sunbury Asylum

VICTORIA – PRESENT

Graeme BERTUCH (G.P.)	Cathcart Ridge
Roger BUCKLE (Psychiatrist)	Red Hill Estate – now Tuck’s Ridge
Hugh CATCHLOVE (Radiologist)	Mt. Prior
Alan CUTHBERTSON (Colorectal Surg.)	Murrindini Vineyards
John GRIFFITH (O & G)	
Max HANKIN	Hankin’s Wines
Ron JONES (G.P.)	
David LESLIE (Pathologist)	Turrumurra Estate
Clive LEVIS (Surgeon)	
John LOWTHER (G.P.)	Elan Vineyard
Frederick MAIR (General Physician)	Coalville Winery
Gordon McINTOSH (G.P.)	Parish Wines
Richard McINTYE (Surgeon)	Moorooduc Estate
Peter McMAHON (G.P.)	Seville Estate
John MIDDLETON (G.P.)	Mount Mary
Tony MIUCELI (G.P.)	Miceli
Trefor MORGAN (Prof. of Medicine)	Mount Charlie
James MUNRO (Pathologist)	Mt. Ida
Bernhard OSTBERG (G.P.)	Heyfield Homestead
Hugh ROBINSON (O & G)	Mornington Estate
Wayne STOTT (Plastic Surgeon)	Wild Wood Vineyards
Peter TISDALL (G.P.)	Tisdall Wines
Ian WHEATLEY (Surgeon)	

WESTERN AUSTRALIA – PAST

John FERGUSON Houghtons

Alfred WAYLEN Darlington

WESTERN AUSTRALIA – PRESENT

Kevin CULLEN (Physician/Epidem.) Cullens

Tom CULLITY (Cardiologist) Vasse Felix

Craig DRUMMOND (G.P.) Cherrywood Estate

Pat HOLT (G.P.)

Barry KILLERBY (Gastroenterologist) Killerby

John LAGAN (Psychiatrist) Chateau Xanadu

Ken LYNCH (G.P.) Chatsfield

Bill PANNELL (G.P.) Moss Wood

Michael PETERKIN (G.P.) Pierro

Peter PRATTEN (Radiologist) Cape Vale

Geof RILEY (Psychiatrist/G.P.)

Eithne SHERIDAN (Psychiatrist) Chateau Xanadu

Colin STEPHENS (Surgeon) St. Werburghs

Janet THOMAS (G.P.) Thomas Wines

Christopher PENFOLD	Penfolds 1844
Bert SCHOLZ (G.P.)	The Willows Vineyard
Anton SOKOLOWSKI	
Surg. Major Gen. Hinton ST. GEORGE	St. George
Otto WEIN-SMITH	Stanley 1893
SOUTH AUSTRALIA – PRESENT	
Aileen CONNANN (O & G)	Akeringa
Brian CORNISH (Orthopaedic Surgeon)	Finniss Park Estate
Donald ENGLISH (G.P.)	Olivehill
Ian FLETCHER (Surgeon)	Delacoline
Richard HAMILTON (Plastic Surgeon)	Hamiltons
Doug HEWITSON (G.P.)	Wakefield River Estate
Chris LAURIE (Nephrologist)	Hillstowe
Hugh LLOYD (G.P.)	Coriole
Greg MARKLEY (General Surgeon)	Marklew
David MITCHELL (G.P.)	Settlement Wine Company
Graeme RIDDOCH (G.P.)	Wellington Wood Wines
John SLADE (Ophthalmologist)	Finniss Park Estate
Ian STEWART (G.P.)	Wellington Wood Wines
Roger TAYLOR (O & G)	Lake Barrington Estate
Jim WATTS (Prof. of Surgery)	Fox Creek Wines
Lindsay WILKIE (Hypnotherapist)	Akeringa
Patricia & John WILSON (G.P.'s)	The Wilson Vineyard
Richard WILSON (G.P.)	St. Margaret's

QUEENSLAND – PRESENT

Brian SPROULE

Roma Villa

3.2.5 THE BIG THREE – DRS. LINDEMAN, PENFOLD AND KELLY

Australia's three biggest wine companies, Lindeman, Penfold and Hardy, were founded by Drs Lindeman, Penfold and Kelly respectively. These three men were all born in England in 1811 and established their vineyards in 1843 (Dr Lindeman at Cawarra), 1844 (Dr Penfold at Magill) and 1845 (Dr Kelly at Trinity).

Dr Lindeman

Dr Henry John Lindeman was a graduate of St Bartholomew's, London. He established a modest vineyard near Gresford in the Upper Hunter Valley, known as Cawarra. From humble beginnings this formed the basis of what was to become one of the largest and most prestigious wine companies in Australia.

He was a leading advocate of the sensible use of wine as Australia's national beverage, as well as of its use for its medicinal virtues (1). The son of a medical practitioner, and grandson of a clergyman of the Church of England, he was born at Egham, near Windsor, west of London, on 21 September 1811.

He spent his early life in Hythe, now an outer suburb of Southampton, where his father and grandfather practised their respective professions (2).

Indenture

It was at the tender age of 13 years - on 12 February 1825 - that Henry John Lindeman was apprenticed to his father, Dr John William Lindeman, to learn the “art” of medicine, for a period of five years. At that time it was customary for aspiring students of medicine to be indentured or apprenticed to a senior “mentor” doctor to learn the basic skills before being accepted by a teaching hospital to complete their training.

Dr Lindeman’s indenture makes interesting and sometimes amusing reading:

“This indenture witnesseth that Henry John Lindeman - an infant under the age of twenty-one years - doth put himself apprenticed to his Father, John William Henry Lindeman, of Hythe in the County of Hants; Surgeon apothecary and man midwife to learn his art and with himself in the manner of an apprentice to serve from the day of the date hereof until the full end and term of five years from thence next following to be fully complete and ended.

During which term the said apprentice his Master faithfully shall serve, his secrets keep, his lawful commands everywhere gladly do, he shall do no damage to his said Master nor see to be done of others, but to his power shall tell or forthwith give warning to his said Master of the same.

He shall not waste the goods of his said Master nor lend them unlawfully to any.

He shall not commit fornication or contract matrimony within the said term, he shall not play cards or dice tables or any other unlawful games whereby his said Master may have any loss with his own goods or others during the said term without licence from his said Master. He shall not buy or sell. He shall not haunt taverns or playhouses nor absent himself from his Master's service day or night unlawfully, but in all things as a faithful apprentice he shall behave himself towards his said Master and all his during the said term.

And the said John William Henry Lindeman for and in consideration of his natural love and affection which he beareth unto his son the said Henry John Lindeman doth hereby covenant, promise and agree his said apprentice in the art of apothecary, surgeon and man midwife which he useth by the best means he can, shall teach and instruct or cause to be taught and instructed finding unto the said apprentice sufficient meat, drink, washing and lodging and all other necessaries during the said term and for the true performance of all and every the said covenant and agreements either of the said parties bindeth himself unto the other by these presents in witness whereof the parties above named to these indentures have interchangeably put their hands and seals the twelfth day of February in the sixth year of the reign of our Sovereign Lord, George IV, by the Grace of God of the United Kingdom of Great Britain and Ireland, King Defender of the Faith in the year of our Lord one thousand eight hundred and twenty five" (3).

St Bartholomew's Hospital

Between 1830 and 1834, Dr Henry John Lindeman, together with Dr Christopher Rawson Penfold (see below), trained at St Bartholomew's - a hospital which was founded in 1123 and which is the only one of the medieval hospitals of London still occupying its original site (4). As it is now, it was then considered one of the most prestigious teaching hospitals, and it was a great honour for Dr H J Lindeman to be accepted there as a student to formalise his training.

Another of Australia's famous wine doctors, Dr William Thomas Angove, was also a medical student at St Bartholomew's Hospital, but at a later date, graduating in 1875.

The only famous medical contemporary of Dr Lindeman at St Bartholomew's Hospital was James Paget (1814-1899), who won prizes for medicine, chemistry, surgery and botany in his last year (1835), one year after Dr Lindeman (5). Later, as Sir James Paget, he became renowned as the best surgical diagnostician in Britain. His name was used to describe two diseases: Paget's disease of the nipple, an eczema that heralds cancer of the breast; and Paget's disease of the bone, a deformity in bone metabolism resulting in the enlargement of bones. The best surgeon in London during Paget's time was William Fergusson (1808-1877). The saying went, "Go to Paget to find out what is the matter and then go to Fergusson to have it cut out".

It is interesting to note that it was at St Bartholomew's Hospital in 1628 that Sir William Harvey first described the circulation of blood, and today we know how good wine in moderation is for one's circulation. The wheel had gone full circle when the

founders of Australia's two largest wine companies, Lindeman's and Penfold's, together with Dr Angove, trained at Barts.

Following his graduation in 1834, Dr Lindeman was made a member of the Royal College of Surgeons and practised medicine at Southampton.

Between 1834 and 1840, when he sailed for Australia, it is believed that Dr H J Lindeman toured France and Germany, and whilst touring these wine-producing countries he gained his knowledge and love of viticulture and wine making. And doubtless this was further augmented on the voyage to Australia when the ship carrying the Lindemans (he as ship's surgeon) called at Madeira and Capetown.

Australia

On 11 February 1840, just after she celebrated her 18th birthday, Dr Henry John Lindeman married Eliza Harriet Bramhall at Southampton, and a little over a month later, on 24 March 1840, they sailed for Australia on the 494-ton barque, Theresa (6).

Australia must have appeared as a land of limitless opportunity to the young couple. However, upon arrival in Sydney on 18 August 1840, finding the situation unfavourable, they moved to Gresford on the Paterson River early in 1841, and here Dr Lindeman established a medical practice.

Their first child, Harriet Jane, was born there on 1 October 1841 (7). With his practice established, and with a growing family, Dr Henry John Lindeman looked for land to buy.

In 1836, George Townshend of Trevallyn was granted land on the Paterson River, where he eventually possessed large tracts along the river. However, the drought and subsequent depression of the 1840's compelled him to dispense with some 4500 acres at auction.

Dr Henry John Lindeman purchased six blocks totalling 816 acres at the auction on 12 January 1842, and the property was named Carrawa. Carrawa was a local aboriginal term meaning "by running water". It was here that Dr Lindeman built a slab cottage for his family, and set about establishing his vineyard in 1843. He selected the rich alluvial flats on the north-western side of the Paterson River to plant riesling, verdelho and shiraz vines, and gradually the vineyard was expanded until it covered 40 acres (8).

Dr Lindeman's practice expanded, as did his vineyards, when he bought two smaller vineyards nearby - Brinkburne, across the Paterson River to the north-west of Cawarra, and Talga, towards Penshurst (9, 10).

His stringent policy was never to sell any wine until it had properly matured, and he built a large slab storage cellar, to store casks of maturing wine.

After the fire at Cawarra in September 1851, caused by an arsonist (11), Dr Lindeman built a winery of stone to store his maturing wines, and sections of this building are still visible today.

By 1861 Dr Lindeman was working with John Wyndham at his Dalwood vineyard, and together they engaged an agent - Mr John Lankaster - to market their wines. However, by 1870, Dr Lindeman's production had outstripped Mr Lankaster's facilities, prompting the doctor to establish his own cellars and bottling complex at the Exchange Cellars in Pitt Street, Sydney (12).

Dr Lindeman's marriage to Eliza Bramhall had produced ten children - five sons and five daughters. By 1879, Dr Lindeman was ageing and his sons were old enough to accept some of the responsibility for running the winery. He placed three of his five sons into the business - Charles Frederick, Arthur Henry and Herbert William. Not surprisingly, the two other sons, Sidney and Henry John Junior, also had a financial interest in their father's business.

On 24 May 1881, Dr Henry John Lindeman died. He was buried at the cemetery at St Anne's Anglican Church, Gresford (13).

The three sons maintained the business, with Charles Frederick acting as manager, Arthur Henry as winemaker, and Herbert William as taster. They traded as H J Lindeman and Company (14).

In 1871 Dr Lindeman wrote a letter to the editors of the *New South Wales Medical Gazette* entitled “Pure Wine as a Therapeutic Agent and why it should become our National Beverage”, in which he gave an insight into why he established his vineyards and made wine. He expressed his belief that it was necessary in the colony to supply ... “a pure exhilarating wine to take the place of ardent spirits and of adulterated wines and beers ... the use of which frequently induces ... derangement of the liver [and] ... mental depression”. (Full letter appeared earlier).

Dr Penfold

Dr Christopher Rawson Penfold was born in 1811 to Charlotte and John Penfold, vicar of Steyning, Sussex (15).

On 26 May 1835, Dr Penfold married Mary Holt, the only daughter of a London medical practitioner, Dr Thomas Holt. Then, from 1838 to 1844, he practised medicine at Brighton.

A naval officer is supposed to have told young Dr Penfold about the endless opportunities in the new colonies of Australia. After six years of practice in Brighton, Dr Penfold must have been influenced enough by these stories, because he decided to emigrate to South Australia with his family.

Dr Penfold believed in the medicinal use of wine, especially in using red wines to treat anaemia. So before sailing for South Australia he obtained vine cuttings from France and paid a deposit to the Colonial Land and Emigration Commission. Dr Penfold, his

wife, Mary, and their only child, Georgina, arrived in South Australia on board the Taglioni on 18 June 1844. They paid £1200 to Mr Edmund Trimmer for 500 acres of “the choicest land, 200 acres of which were under crops”, at Magill, about four miles out of Adelaide in the foothills of the Mount Lofty ranges (16).

The vines had been brought out to Australia with their roots dipped in wax to seal them and to prevent them drying out. When Dr Penfold and Mary arrived at their property on 8 August 1844 they built a small timber shack, which was replaced a year later with a stone cottage called The Grange. Around their home they planted their vineyard and produced mainly ports and sherries for patients. As the demand for his wine grew, so Dr Penfold expanded his vineyard and winery, and became more involved in wine production.

He was also busy practising medicine and being involved with local government - he was the first Chairman of the Burnside District Council, in 1856. Not even the gold rushes of 1852 persuaded him to give up his chosen course, as they did with most others. Dr Penfold battled hot, dry summers and great distances between his vineyard and overseas markets to establish his business.

These commitments and his ailing health meant that his wife, Mary, aided by a servant, Ellen Timbrell, managed the vineyard more and more.

In 1861 the Penfolds visited Melbourne. During this visit Georgina met an officer in the Victorian Civil Service, one Thomas Francis Hyland. On 24 September 1862 they married, and Thomas became responsible for marketing Penfold wines in Victoria (17).

In 1869 Joseph Gillard Junior joined the Penfold's business as vineyard manager and winemaker. He was the 33-year-old son of Joseph Gillard Senior, who established the Sylvania vineyards at Norwood.

After a long illness Dr Penfold died at The Grange on 25 March 1870 and was buried at St George's Church, Magill. Mary Penfold assumed control of the wine business, and with the aid of Joseph Gillard (who continued to work for the Penfolds until his retirement in 1905) and her son-in-law, Thomas Hyland, built up the business to be one of the largest wine companies in Australia (18). By 1881 the business had expanded so much that 107,000 gallons of wine were made at Magill. This was equal to one-third of all the wine stored in South Australia at that time.

In 1884, at the age of 68, Mary Penfold retired from active involvement in Penfold wines. Until then she had been the proprietor of the company, wine blender and, before Joseph Gillard's arrival, she had been responsible for the husbandry of the vines. On 31 December 1895, at the age of 79, Mary died in Melbourne and was buried with her husband (19).

Georgina and Thomas Hyland had two sons and two daughters who continued the business, especially Frank Astor Hyland and Herbert Leslie Hyland, who expanded the estate by buying the Dalwood vineyard in the Hunter Valley in 1904 and Minchinbury in Sydney in 1912 (20).

Dr Kelly

Alexander Charles Kelly was born in Dunbar, Scotland, in June 1811. After graduating with an MD from Edinburgh University, he practised first at Dunbar then as a ship's surgeon with the East India Company.

He came to Adelaide on board the Badoo, arriving on 11 March 1840, and was appointed Assistant Surgeon at the Adelaide Hospital (21).

Because he wished to settle in Australia permanently, he returned to Scotland to bring out his mother, and lectured on "Australia as a field for emigration". During this trip, Dr Kelly also visited the vineyards of Europe, because he realised the soil and climate of South Australia were similar, and hence suitable for wine making. Upon his return he bought 80 acres of land at Morphett Vale, and decided to build a house on this property and to plant a vineyard, so that he would have ample strong red wine for his patients to use as a medicine. At that time, 1843, there was a scarcity of good labour, so he hired three fellow passengers on the ship out to Adelaide. They were hatters who could not find work. Thus, Dr Kelly became the carpenter, a stonemason was employed, and the three hatters quarried the stone and split the timber for the roof. The house, upon completion, was called Trinity because of the three hatters (22).

Planting of the vineyard began in 1845 with 12 acres, but the wrong vine varieties had been recommended by Macarthur, who wrote under the *nom de plume* of Maro. The varieties ripened too early for the district. The following description of Trinity was

written in 1862 by Ebenezer Ward in his book "Vineyards and Orchards of South Australia" (23).

"DR. KELLY'S vineyard is two miles westward of Morphett Vale, about one mile from the shores of the Gulf in a straight line, and two miles north of Port Noarlunga and the mouth of the Onkaparinga. Altogether there are 12 acres of vines, and planting was commenced in 1845. Like Mr. Reynell, Dr. Kelly commenced with the kinds recommended by Macarthur in 'Maro's' letters, but they have almost all proved unsuited to the climate, and have for the most part been rooted up and replaced with the Rousillon varieties, which will not ripen in New South Wales. (The Mataro is grown there in some places, but Dr. Kelly says it never ripens well). At Trinity crops ripen almost as early as on the plains, the vineyard being about 100 feet above the sea. The vintage generally extends from 5th of February to 15th March, and the sorts recommended in 'Maro' failed, because they ripened too early.

The vineyard is enclosed with stone walls, the material having been picked off the land. The soil is chiefly a reddish loam, intermixed with limestone, but in some places the subsoil is a stiff clay. Originally Dr. Kelly planted his vines at 6 feet by 4 to 6 feet by 6, but now he prefers and adopts distances of 9 feet by 4 to 9 feet by 5, because greater facilities are thereby afforded for ploughing the ground between the rows, and the vines support each other better in the rows. The vines are planted on two hill slopes divided by a slight fall in the centre, with an east to east-by-north aspect, and the land is always ploughed across the slopes, better to retain the rainfall. The hill slope rising above the vineyard on the west has been intersected with furrows, which drain the surface water from it to the vineyard, and the same hill shelters the vineyard from westerly winds. Dr.

Kelly has grafted a good many old vines with the Rousillon varieties, and we noticed some Mataro grafted last year on Muscat, which had borne this year. He is always careful to graft six or eight inches below the surface. A few Verdelho have been preserved of the old sorts originally planted, but they have all been trellised, and Dr. Kelly considers they will not pay for cultivation without that support, whereas the Rousillon stand admirably in gooseberry bush fashion. He thinks also that white grapes will not withstand the heat of the sun as well as the red sorts.

Dr. Kelly makes a capital wine from the Rousillon varieties, and on one occasion he mixed a small quantity of Shiraz and Malbec with them, but the latter ripened earlier than the Rousillon, and had to be fermented separately.”

Burgundy-style red wines were made at Trinity and used not only as wine to drink but also for their medicinal virtues. In 1859 Dr Kelly toured the vineyards of New South Wales to study vine growing and winemaking techniques there.

In 1855 Dr Kelly married Miss Annie Worthington, the daughter of the local stipendiary magistrate. A son, John George, was born to them in 1859. He was later to manage Tintara for Mr Thomas Hardy (see below) when he was only 18.

Dr Kelly by now had been through all the troubles of establishing a vineyard, and in order to help others to sort out the confusion existing in the early days of Australia's wine industry such as the problem of which varieties were suitable to plant, he wrote a book entitled "The Vine in Australia", in 1861 (24). It was a thorough work and a landmark in the Australian wine industry, and it included a diagram showing contour

planting for the first time.

Dr Kelly sold Trinity to Mr John B MacMahon, and embarked on an even bigger winemaking enterprise. In 1861 he purchased some heavily timbered crown land in McLaren Vale and built his new house. This property he called Tintinara, which was a local Aboriginal word - "Tinta" meaning colour, and "Rara" meaning rare. Tintinara was quite a mouthful, so it was shortened to Tintara. In 1862, 90 acres were planted with shiraz, cabernet, mataro, grenache and especially sauvignon blanc, from cuttings from Manning's vineyard locally (25). The cellars were made in 1863, by digging into the hillside next to the house. The fermentation tanks for the cellars were lined with Delabole slate, quarried by Cornish miners in the Willunga hills. By 1867 the vines were in full bearing, making a dark, full-bodied, Burgundy-type wine, which again was also used as a medicine by the good doctor. Also in 1867, Dr Kelly wrote another wine book, this one entitled "Wine Growing in Australia" (26). Kelly had persuaded many of Adelaide's leading citizens, including Sir Samuel Davenport, Sir Thomas Elder, Sir W W Hughes and Messrs Cleland, Stirling, R Barr-Smith and A L Elder to invest in his venture.

In 1871 Dr Kelly returned to England and engaged Peter Bond Burgoyne to be Tintara's London agent, but sales were poor. A recession in the colony and the return of a pipe of wine (capacity of 110 gallons) as unfit spelt the end of the venture. In 1873 the 700 acres of vineyard, cellars, houses and implements were all bought by Thomas Hardy, who regained all his purchase price with the sale of the wine stored in the cellars within a year (27).

Dr Kelly, by now a disillusioned man, retired to a house in William Street, Norwood, a suburb of Adelaide. Here he died on 9 October 1877, at the age of 66.

3.2.6 LUNATIC ASYLUMS

Of all the vineyards established by doctors in Australia the most unusual would have to be the ones established in our lunatic asylums in the late 19th century.

A psychiatric hospital is a most unusual place to find a vineyard but in the late 1800's some more enlightened doctors in charge of these institutions tried to help their patients' boredom by providing them with meaningful outdoor activities such as gardening and farming.

These activities not only helped the patients, who prior to these innovations had literally nothing to do in usually barren and austere surroundings, but provided supplementary food for the institution, which helped reduce costs. Any excess produce was sold to further supplement the budget. The vineyard grapes and wine also proved a variation in the monotonous diet and supplemented the patients' meagre vitamin C intake thus preventing scurvy, which was a common complaint in such large institutions.

Thus, besides vineyards, vegetable gardens, orchards and dairies were established.

Some of the causes of insanity, last century, make interesting reading. Tertiary syphilis, alcohol abuse and contamination of alcohol were the main causes, but the others

included fever, hereditary ‘taint’, epilepsy, mental anxiety due to business failures caused mainly by drought and depression, sunstroke, domestic troubles, lack of sustenance, congenital mischief (such as meningitis), destitution, old age, isolation and head injury.

Dr. Frederick Norton Manning was responsible for establishing the vineyard at Gladesville Psychiatric Hospital (formerly called Tarban Creek Lunatic Asylum) in 1870.

Manning, born at Rothersthorpe, Northamptonshire, England, on 23.2.1839, trained at St. George’s Hospital, London, where he gained MRCS & LSA in 1860 and later an MD at St. Andrew’s in 1862. In 1864 he was surgeon on board HMS ESK - a brig that took part in the Maori war in New Zealand. He was present at the savage fighting at Gate Pa in which most officers of the naval brigade were either killed or wounded.

By the time the HMS ESK had arrived in Sydney in 1867, Manning had suffered so much with sea-sickness he gave up his naval career and asked the Colonial Secretary, Henry Parkes, for permission to visit Tarban Creek and Parramatta Asylums.

He was invited to be Superintendent at Tarban Creek and returned to London on the HMS ESK to assess the latest psychiatric facilities in Europe and the USA. He was appointed Superintendent on 15.10.1868 and immediately set about improving the lot of the patients who lived in “prison-like and gloomy conditions” (1), ate poor rations and had very few facilities for employment or recreation.

The Bishop of Hobart commented in 1863 that Gladesville Hospital had “no green trees and no gardens” (2). Dr. Manning in his initial report stated that “the chief question of importance as regards this institution is the possibility of the acquisition of land for agricultural purposes” (3).

In his annual report for 1870 Manning noted that “a tank with a capacity of 30,000 gallons had been excavated out of solid rock to contain water for the garden”, also that “scurvy had appeared manifested by tender gums and purpuric blotches and it had been necessary to supplement the diet with wine, beer, lemons and salads” (4).

The report of 1872 stated “The vineyard which had been planted at Gladesville some years before was bearing well” (5).

He resigned his position of Inspector General of the Insane (a position he held from 1876) in 1898 he entered private practice. Dr. Manning, a bachelor, died from a stomach ulcer on 18.6.1903, and was buried at the Gladesville Hospital.

The insane were usually housed in gaols prior to the establishment of the first lunatic asylums. Even in asylums the poor unfortunates were not much better off. Instead of being mistreated by gaolers and prisoners in the prisons, they were housed in prison-like wards and mistreated by the asylum attendants.

Following Dr. Manning’s example, other doctors established vineyards in other asylums in Victoria and South Australia. After the gold rush in Victoria began in 1851 many people became restless and mentally disturbed often by drunkenness and

unemployment, especially after the easily found surface gold began to run out. The population of Victoria during the gold rush period expanded rapidly as well. All these factors contributed to a marked increase in the number of insane needing accommodation, hence two new asylums were established (the first since Yarra Bend in 1848) in the gold field areas in 1867. They were Beechworth in the north east and Ararat in the west.

The vineyard at Ararat has been credited to Dr. Beattie Smith, but he only continued its cultivation whilst he was Medical Superintendent there from March 1887 until January, 1899. In 1889 he made 450 gallons of a wine he called “Golden Chasselas”.

The first Medical Superintendent to mention the vineyard at Ararat was Dr. William Armstrong in his Report to Parliament for the year 1883, “A vineyard which the gardener planted some three years ago gives good promise for next vintage” (6).

Eventually wet seasons with resultant depleted crops forced the Government to have the vineyard closed in 1891.

In 1882 Dr. William Longworth Watkins, the Medical Superintendent at the Sunbury Asylum reported that “endeavours are being made to cultivate fruit and wines” (7), but it wasn't until 1886 that the small vineyard was actually planted. Following damage by a flood in 1887 and Dr. Watkins' transfer to the Yarra Bend Asylum in 1888, the vineyard was abandoned.

The only other vineyard planted at an asylum was that of Dr. William Lennox Cleland (1847-1918) at the Parkside Asylum in Adelaide (now the Glenside Hospital). Dr. Cleland was “adopted” by his aunt Margaret Davenport, wife of the South Australian wine identity, Sir Samuel Davenport. He also spent some time as a labourer on properties including a year with Dr. Alexander Kelly at his Tintara vineyard (later bought by Thomas Hardy to found the Hardy Wine Company). It was during this period that Dr. Cleland became truly interested in viticulture and medicine. In 1872 he entered the Medical Superintendent at Parkside Asylum, a post he held until 1913. During this period he developed an extensive vineyard and olive grove. Almond and fruit trees were also planted along with many mulberry trees to feed a pioneering silkworm industry at the asylum.

The Cleland family, at their country home “Beaumont” in Burnside, planted extensive areas of vines and olive trees in the 1850’s under the influence and control of Uncle Samuel Davenport. Dr. Cleland was later to inherit this vineyard and also establish his own at New Mecklenburg near Tanunda.

3.2.7 AUSTRALIA’S WINE DOCTORS

Special Note

The historic facts about the discovery of certain parts of Australia contained in this section of the thesis are based on currently accepted European history of discovery. However, Gavin Menzies’ new book “1421 The year China discovered the world” (1) claims that Emperor Zhu Di sent a grand fleet, the largest the world had seen at the time, under the command of Admiral Zhen He, as envoys to the rest of the world. The

fleet set sail on 8th March 1421 on a voyage of discovery that lasted over two years and allegedly circled the world a century before Magellan. During this voyage they also allegedly discovered Australia long before the Dutch (in the west) and 350 years before Cook (in the east) and the Americas seventy years before Columbus (1).

NEW SOUTH WALES

The New South Wales coast was first sighted by Europeans in 1770 during Captain Cook's voyage.

The first grapevines to be planted in Australia were brought out by the First Fleet in 1788. They had been bought in Rio de Janeiro and Capetown and Judge Collins records that they were planted in Governor Phillip's garden next to his temporary Government House on the south-eastern shore of Sydney Cove in early February 1788 and not in Farm Cove as was once thought.

“...a portable canvas house, brought over for the Governor, was erected on the east side of the cove...Some ground having been prepared near His Excellency's house on the east side, the plants from Rio de Janeiro and the Cape of Good Hope were safely brought on shore in a few days and we soon had the satisfaction of seeing the grape, the fig, the orange, the pear and the apple, the delicious fruits of the Old, taking root and establishing themselves in our New World” (2).

Because of its proximity to the water this first vineyard struggled due to a blight infection called Anthracnose, so in November 1788 Governor Phillip had a new

vineyard planted at the newly settled fertile crescent area further up the Parramatta River called Rosehill (later called Parramatta). Eventually, 8,000 vines flourished as described by Captain Watkin Tench in his Journal:

“...went round the Crescent at the bottom of the garden, which certainly in beauty of form and situation is unrivalled in New South Wales. Here are 8,000 vines planted all of which in another season are expected to bear grapes. Besides the vines, are several small fruit trees, which were brought in the “Garden” from the Cape and look lively, on one of these are half a dozen apples, as big as nutmegs. Although the soil of The Crescent be poor, its aspect and circular figure, so advantageous for receiving and retaining the rays of the sun, eminently fit it for a vineyard” (3).

A German called Phillip Schaeffer was the next to plant a vineyard (also in the Parramatta district). This was the first private vineyard in Australia. This, too, was well described by Captain Tench “Dec. 7th 1791. Went to Schaeffer’s farm. I found him at home, conversed with him and walked with him over all his cultivated ground. He had one hundred and forty acres granted to him, fourteen of which are in cultivation, twelve in maize, one in wheat and one in vines and tobacco. He has besides twenty-three acres, on which the trees are cut down, but not burnt off the land. He resigned his appointment and began his farm last May; and had at first five convicts to assist him; he now has four. All his maize, except three acres – is mean. This he thinks may be attributed to three causes; a middling soil; too dry a spring; and from the ground not being sufficiently pulverized before the seed was put into it. The wheat is thin and poor; he does not reckon its produce at more than eight or nine bushels. His vines, nine hundred in number, are flourishing and will, he supposes, bear fruit next year. His tobacco plants

are not luxuriant; to these last articles, he means principally to direct his exertions. He says (and truly) that they will always be saleable and profitable. One of the boundaries of his land is plenty of water. A very good brick house is nearly completed for his use, by the Governor; and in the meantime he lives in a very decent one, which was built for him on his settling here. He is to be supplied with provisions from the public store and with medical assistance for eighteen months, reckoning from last May. At the expiration of this period he is bound to support himself; and the four convicts are to be withdrawn. But if he shall then, or at any future period, declare himself able to maintain a moderate number of these people for their labour, they will be assigned to him.

Mr Schaeffer is a man of industry and respectable character. He came out to this country as Superintendent of convicts, at a salary of forty pounds per annum; and brought with him a daughter of twelve years old. He is by birth a Hessian and served in America, in a corps of Yaghers, with the rank of Lieutenant. He never was professionally in any part of life a farmer, but he told me that his father owned a small estate on the banks of the Rhine on which he resided and that he had always been fond of looking at, and assisting in his labours, particularly in the vineyard.

In walking along, he more than once shook his head and made some mortifying observations on the soil of his present domain, compared with the banks of his native stream. He assured me that (exclusive of the sacrifice of his salary) he has expended more than forty pounds, in advancing his ground to the state in which I saw it. Of the probability of success in his undertaking, he spoke with moderation and good senses. Sometimes he said he had almost despaired and had often balanced about relinquishing it; but had as often been checked by recollecting, that hardly any difficulty can arise,

which vigour and perseverance will not overcome. I asked him what was the tenure on which he held his estate. He offered to show the written document, saying, that it was exactly the same as Ruse's. I therefore declined to trouble him and took my leave with wishes for his success and prosperity" (4).

In 1794 John MacArthur continued what was to become the normal custom in Australia by planting a small vineyard on his property Elizabeth Farm.

"In the centre of my farm, I have built a most excellent brick house...surrounded by a vineyard and garden of about three acres, the former full of vines and fruit trees, and the latter abounding with most excellent vegetables" (5).

Late in 1820 he was to establish two other vineyards with his sons James and William at Camden Park and Penrith.

After Parramatta was well established, the colony of Sydney expanded rapidly and vineyards followed as far north as Robert Campbell's vineyard at Mona Vale and after 1814, as far west as the Government Farm vineyard at Emu Plains in 1819 and as far south as Mr de Arietta's "Moreton Park" vineyard at Douglas Park in 1822.

During the early 1800's, some significant vineyards were established in Sydney, such as Gregory Blaxland's vineyard at "Brush Farm" in 1816 and Dr Robert Townson's vineyard at "Varroville" after 1811 (note Dr Townson was a Doctor of Law, not Medicine), Reverend Samuel Marsden's vineyard at "Mamre" after 1804, George Cox at "Winbourne" after 1824 and James Busby at the Male Orphan School, Cabramatta in

1825. This period also saw the first doctors in Australia to establish vineyards. The honour of being Australia's first medical winemaker goes to Dr William Redfern, who established his vineyard at his property "Campbell Fields" between 1818 and 1824. He was closely followed by Sir John Jamieson at "Regentville" in 1826.

The mid 1800's saw another group of "viticultural medicos", with Dr James Bowman at "Lyndhurst" after 1833, Dr William Bland at "Mark Lodge" after early 1840's, Dr Charles McKay of "Minchinbury" early in the 1860's, Dr Alexander Berry at "Crows Nest" after 1850, Dr Frederick Norton Manning at Gladesville Asylum in 1870 and Dr Thomas Fiaschi at "Tizzana" in the 1880's.

The vine root disease phylloxera destroyed the vineyards of Sydney after this and the pressure of the urban sprawl also made demands on vineyard land. Recently, new vineyards were established in Sydney's outer fringe areas and once again, the medical profession was well represented with Dr Barry Bracken establishing the "Richmond Estate" vineyard in 1968 and Dr Sue Hanckel helping manage "Camden Bridge Farm" with her father, Norman.

From Sydney, explorers opened up New South Wales and in the newly developed areas, began planting vines where possible, with doctors being some of the pioneers. The Hunter Valley saw Dr H J Lindeman at "Cawarra", Dr James Mitchell at Stockton, Dr Robert Park at "Lewinsbrook" and Dr Richmond Read at "Kelso". The coast of New South Wales was developed soon after Sydney was well established, because of the ease of access by boat. The "Northern Rivers Doctors" centred around the thriving river port of Port Macquarie included Drs Dobie, Carlyle and Gabriel.

Other areas in New South Wales to develop vineyards in the 1800's and saw the medical profession become involved included the Shoalhaven River with Dr Alexander Berry at "Coolangatta", Bathurst with Dr George Busby, Inverell with Dr Louis Segal and Mudgee with Dr Fiaschi at "Augustines".

Today, most wine growing areas have their share of medical practitioners also engaged in this pursuit.

The honour of being the first medical doctor in Australia to establish a vineyard has been given to Dr Robert Townson, who established a vineyard at his property "Varroville" near Campbelltown after 1811. It was second only to Gregory Blaxland's vineyard at the time; however, Dr Townson was not a medical person, but a Doctor of Law.

The first medical doctor to establish a vineyard in Australia was, in fact, Dr Redfern at his property "Campbellfield" near Campbelltown, closely followed by Sir John Jamieson at his property "Regentville" near Penrith.

DR WILLIAM REDFERN OF "CAMPBELLFIELDS"

William Redfern was born in Canada in 1774 and grew up in Trowbridge, Wiltshire, England. He was well educated and passed the examinations of the London Company of Surgeons in 1797. He became a surgeon's mate on board the "HMS Standard" and took part (by advising the men) in the mutiny of the fleet a few months later at the Nore,

after the mutiny of the Channel Fleet at Spithead. The sailors were driven to mutiny and refused to put to sea, until their poor conditions of service were improved. At his court martial, he was found guilty, and sentenced to death on the 27th August 1797. However, this sentence was commuted to life imprisonment because of his youth and he remained in prison until he was transported to New South Wales on “The Mineroa”, arriving in Sydney on the 14th December 1801.

Once established in Sydney, he was transferred to Norfolk Island in May 1802 to work as assistant surgeon and gained such a good reputation as a doctor that Governor King granted him a free pardon on 19th June 1803. He continued to work at Norfolk Island until his return to Sydney in 1808, where he worked as an assistant surgeon at the old Dawes Street Hospital under Dr D’Arcy Wentworth.

Redfern eventually became physician to Governor Macquarie and his family and to the Macarthur family. He became the most popular doctor, recognised as the leading obstetrician and developed the most extensive practice in the colony.

Redfern also became the leader of the emancipists or freed convicts, whom Governor Macquarie strongly supported, as he wanted the new colony to be populated by reformed free men and not just a dumping ground for felons.

Redfern’s concern for convict health and the fact that he had been on the receiving end of “the system”, made him the logical choice to investigate the high mortality rate aboard transport vessels bound for Australia. His report resulted in the book “Instructions for Surgeon-Superintendents on board Convict Ships proceeding to New

South Wales and Van Diemen's Land and for the Master of those Ships" is a landmark in Australian Public Health.

He recommended changes to ventilation, diet, cleanliness, fumigation, clothing and exercise on deck. His most important recommendation was for the need for "approved and skilful" surgeons on board each ship to tend to the convicts and for clearly defining their powers versus those of the ship's masters.

To fulfil this need, Redfern recommended Naval Surgeons "Men of Abilities, who have been accustomed to Sea Practice, who know what is due to themselves as men, and as officers with full power to exercise their judgment without the control of the Masters of the Transports" (6). Redfern's instructions helped to save not only countless convict lives, but also those of emigrants who came later.

Redfern had other interests besides his medicine – he was honorary medical officer for the Benevolent Society – on the Committee of the Aborigines' Institution and one of the first Directors of the Bank of New South Wales. He purchased a 100 acre estate in Sydney, which is now the suburb of Redfern, and was granted 1300 acres in the Airds district near Campbelltown in 1818. He named this property Campbell Field in honour of Mrs Macquarie.

On 27th October 1821, Redfern sailed for England to present a petition to the King from the emancipists in New South Wales, requesting that their status of being pardoned by the Governor of New South Wales and not under the Great Seal in London

be recognised in England. The New South Wales Act of 1823 rectified the situation, otherwise the emancipists' property and rights at law would have been taken over.

While on his return voyage to Australia, Redfern spent some time at Madeira and studied the vineyards and wine industry there. His wife petitioned the Earl of Bathurst for more land for his sheep and cattle and to develop vineyards at "Campbellfields".

"Sheweth that your memorialist's husband, Mr William Redfern, late of New South Wales, and now temporarily residing at the Island of Madeira for the benefit of his health, is about to return to the colony per ship 'Alfred' now under immediate dispatch, there permanently to reside. That Mr Redfern possesses in New South Wales upwards of fourteen hundred (1,400) head of horned cattle, four thousand (4,000) sheep and several horses. But the quantity of land he possesses (the greater part obtained by purchase) is not nearly sufficient to subsist his herds and flocks. That Mr Redfern has gone to very considerable expense in the purchase of Merino sheep which he is about to convey to New South Wales for the purpose of improving and increasing the production of fine wool in that colony. And he has also engaged vine dressers and procured vines at the Island of Madeira at considerable expense to proceed to New South Wales for the purpose of cultivating the vine there. That it is now impossible to procure land by purchase in New South Wales; and as the quantity Mr Redfern holds is entirely insufficient for the subsistence of his stock of horned cattle and sheep and in consideration of the expense Mr Redfern has gone to procuring and conveying vine dressers, vine and Merino sheep to that colony, your memorialist most respectfully solicits your Lordship to direct that a grant of land may be made to Mr Redfern in New South Wales. As your memorialist, Mr Redfern, &c., are to proceed in the ship 'Alfred',

to sail in a few days for New South Wales, the favour of an early communication of your Lordship's pleasure is respectfully requested (7).

S. Redfern

Redfern returned to New South Wales in the 'Alfred' in July 1824 and received his further grant at Campbellfields where he introduced the white grape variety 'Verdelho' to Australia from Madeira. He now devoted more time to his farming and retired from medical practice in 1826 to live permanently at 'Campbellfields'.

In 1829 Redfern took one of his two sons, William, to Edinburgh to be educated, intending to return to New South Wales, but died there in 1833 leaving 23,190 acres in New South Wales – 6,296 acres at Airds, 11,362 acres at Bathurst and other acreages at Cowra.

SIR JOHN JAMISON OF "REGENTVILLE"

Sir John Jamison was born at Garrickfergus, Antrim, Ireland in 1776. He was the eldest son of Dr Thomas Jamison, who was surgeon mate aboard the HMS "Sirius", a ship of the First Fleet to Australia in 1788.

Sir John gained his medical training at the University of St Andrews and joined the Royal Navy as a surgeon. As a surgeon on the HMS "Victory", he allegedly tended Lord Nelson's fatal wounds at the Battle of Trafalgar in October 1805, along with Dr William Beatty.

In 1808, Jamison gained an MD and was seconded from the Royal Navy to serve with the Baltic Fleet of the Swedish Navy. Against great opposition and ignorance, he was responsible for changing the pitiful living conditions of the sailors aboard ships and preventing scurvy.

King Charles XIII of Sweden made him a Knight of the Order of Gustavus Vasa – and this was confirmed by the Prince Regent, who was to become King George IV of England, who dubbed him a Knight Bachelor.

During this period, Sir John's father, Dr Thomas Jamison, was laying the foundations for Sir John's later success in New South Wales by acquiring many grants of land, including a 1000 acre grant near Penrith in Sydney's outer west. When Dr Thomas Jamison died in 1811, Sir John arranged for friends of his father, Reverend Samuel Marsden, Dr D'Arcy Wentworth and Dr Charles Throsby, to manage his newly inherited property until he arrived in the colony on board the "Broxfornebury" in 1814.

Sir John was to become one of the foremost men in the colony. He was interested in sport, agriculture and manufacturing.

He became Chairman of the Agricultural and Horticultural Society of New South Wales in 1822, President of the Sydney Turf Club in 1825, Member of the Colonial Legislative Council in 1837, founding Member of the Bank of New South Wales in 1817, President of Sydney College (later Sydney Grammar School) in 1830, Life Member of the Benevolent Society, in recognition of his many charitable works.

In 1824 he built “Regentville” – a large two-storey house of dressed stone with a lace iron verandah enclosing the house, on his Penrith property. It was named after King George IV, the former Prince Regent who had knighted him earlier. Jamison developed “Regentville” into one of the most prosperous properties in the colony, with a woollen mill to process the wool from his many sheep, over 200 acres devoted to wheat, maize, barley, vegetables and fruits.

In the 1830’s, he imported a steam engine to pump water from the Nepean River, thus becoming one of the pioneers of irrigation in Australia.

“In 1826 he had started a vineyard on land located behind his house and placed it under the care of a ‘native of Madeira’, who followed the practice of that island by growing the plants in trenches, six feet deep, and rearing them over trellises. By 1830 he was employing a ‘German emigrant of long experience in the cultivation of the vineyard and in making wine’. Under his direction, ten and a half acres, of which seven were terraced, were laid out ‘on the most improved method practised in the Rhine and other parts of Germany and France’, and enclosed ‘by hedges of the china rose and lemon’. According to the Quaker, James Backhouse, who visited Regentville in 1835, the vineyard occupied fifteen acres and contained ‘between 30 and 40,000 vines including upwards of 200 varieties’. Jamison had constructed a cellar underneath his house and there he stored substantial quantities of his own brandy and wine, the best of which won him prizes at local shows. He was also famous for his cheese, which resembled English Chester and was a producer of tobacco. His whole estate, run on ‘the most approved European and American principles’, was virtually a self-contained entity on which he

raised practically everything required to meet his own needs and those of his workers, most of whom being convicts, had to be clothed and fed” (8).

The above quote is from Professor Brian Fletcher’s article “Sir John Jamison in New South Wales 1814-1844” in the Royal Australian Historical Society Journal Vol. 65, June 1979, with references from the 1828 and 1830 editions of the “Report of the Agricultural and Horticultural Society of New South Wales,” but a letter by Mrs Hawkins, wife of Captain Hawkins RN dated Bathurst May 7th 1822, to her sister in England tells another story...

“Captain and Mrs Hawkins, Mrs Hawkins Senior and their seven children left Sydney on Saturday April 5th 1822, along with ‘a wagon with six bullocks, a dray with five bullocks, another dray with three horses, a cart with two, and last of all, a titled cart.’

‘By Monday April 7th 1822 ‘we had then reached the Nepean River which you cross to Emu Island where there are a Government house and a depot but beyond them there are no habitations until you reach Bathurst, excepting a solitary house at the different places where people stop’.

On Thursday evening April 10th, 1822 Captain and Mrs Hawkins dined with Sir John Jamison.

‘We partook of a sumptuous repast, consisting of mock turtle soup, boiled fowls, round of beef, delicate fish of three kinds, curried duck, goose, and wild ducks, madiera and burgundy with various liqueurs and English ale. I mention all this to show you his

hospitality and to convince you that it is possible for people to live here as well as in England.

I was delighted with his gardens, the apples and quinces being larger than I had ever seen. It is now autumn in this country, and many early trees were again in blossom. The vines had a second crop of grapes, and the fig trees had a third crop. There were also peaches and apricots. He has English cherries, plums and filberts, with oranges, lemons, vines citrons, medlars, almonds, rock and water melons and all the common fruits of England, vegetables of all kinds, and grown at all seasons of the year, which shows how fine the climate is.”

If Sir John was having his second vintage in 1822, then his vineyard would have had to have been planted in 1818 at the latest.

In 1832, Jamison’s “Regentville” property, which had been laid out by Meyer, a Flemish vigneron, was described by Busby as “a very beautiful vineyard indeed”.

Sir Henry Parkes, one time Premier of New South Wales, worked at “Regentville” as a labourer in the vineyard for six months after he arrived in New South Wales in 1839 when he could not find any other work.

Jamison also had a racecourse at “Regentville” and sponsored Australia’s first recognised horse race in 1824, which ran along the main street of Penrith. The race was won by a horse “Cripple” owned by Mr Lane from Agnes Banks.

Sir John led the life of a prosperous English Squire, his hospitality earned him the title “the hospitable Knight of Regentville”.

In February 1844 he married Mary, his housekeeper. They already had two sons and five daughters.

Sir John Jamison died on the 29th June 1844, relatively poor due to the collapse of the Bank of Australia, he being the second largest shareholder.

He was a man of many parts, but was at his best at “Regentville”, where his vineyards and wines were his pride.

DR THOMAS FORSTER AND GREGORY BLAXLAND OF “BRUSH FARM”

Gregory Blaxland was born at Fordwich, Kent, England on 17th June 1778, the son of the mayor and part of the landed gentry. The Blaxlands knew Sir Joseph Banks, who appears to have influenced Gregory and his eldest brother John to emigrate to Australia.

Gregory Blaxland and his wife, Elizabeth, sailed for Australia on the “William Pitt” on the 1st September 1805, together with their three children, two servants and an overseer.

Besides receiving several grants of land soon after his arrival in the colony in 1807, Blaxland bought “Brush Farm”, a 455 acre farm at Ermington on the Parramatta River from Dr D’Arcy Wentworth, who had previously purchased it from William Cox.

Following the arrival of his brother, John, in April 1807, together they indulged in what Governor Bligh referred to as “speculative” and “mercantile” activities concentrating on cattle dealing, sealing and brandy distilling instead of producing crops.

By 1813 Blaxland realised that his flocks of sheep and cattle herds had expanded beyond the capacity of his coastal grants and Governor Macquarie was not going to give him any more grants of coastal land.

His only solution was to find pastoral land in the “interior” and with William Lawson and William Charles Wentworth, he crossed the Blue Mountains, thus opening up the fertile western plains.

He eventually settled down at “Brush Farm”, which Macquarie described as “a very good farm and very like an English one in point of comfort and convenience” (9).

On his passage to Australia, Blaxland had stayed at Madeira where the vintage had begun and observed “the gathering and the pressing”. “At the Cape of Good Hope he observed full management of the grapes out of the cellar” (10).

Blaxland had brought some vine cuttings with him from the Cape and planted them immediately on his arrival at Brush Farm. He wrote “the vines in general are subject to two different diseases of blight in the colony; one destroys the young shoots and leaves in the early part of the season, which stops their growth and destroys their blossom; they appear as if burnt or scalded; the other affects the grapes as soon as they are grown

to the size of small peas; it appears as a black speck on the berry with a small puncture in the centre after which they remain hard and sour and never fill with juice, nor ripen and if the speck extends far the berry entirely dries up and perishes” (11). He experimented with all types of vines from these cuttings to determine which were most susceptible to disease.

He decided that the Black Constantia grape from the Cape and the claret type were the most suitable.

In September 1816 he prepared some land at Brush Farm to plant a vineyard and The Royal Society of Arts in London offered a medal for “the finest wine of not less than 20 gallons of good marketable quality made from the produce of vineyards in New South Wales”.

The first export of wine from Australia took place in March 1822, when a quarter of a pipe of red wine fortified with ten per cent brandy was shipped by Blaxland from Sydney to England. It was awarded a Silver Medal in 1823. The judge stated that “it appeared to be a light but sound wine with much of the odour and flavour of ordinary claret, or rather holding an intermediate place between that wine and the red wine of Nice. The general opinion seemed to be that although the present sample from the inexperience of the manufacturer and the youth of the wine, is by no means of superior quality, yet it affords a reasonable ground of expectation that by care and time it may become a valuable article of export” (12).

Following his early success in 1827, Blaxland himself took a pipe of wine to England, which gained for him the award of the Gold Ceres Medal of 1818 from the Royal Society of Arts. This time, the judges stated “on tasting the samples it was the general opinion that both of them are decidedly better than the wine for which in 1823 Mr Blaxland obtained the large Silver Medal of the Society and that they were wholly free from the earthy flavour which unhappily characterises most of the Cape wines” (13).

Gregory’s son, George, managed the vineyard at Brush Farm in his absence and eventually Brush Farm was purchased by Gregory’s daughter Eliza and her husband, Dr Thomas Forster, in August 1832 for £1,500/10/-.

Gregory Blaxland then unsuccessfully pursued his former economic interests and disappeared from public life when his estates were taken over by his creditors. An embittered, broken man, he took his own life on New Year’s Day 1853. At a meeting of the Agricultural and Horticultural Society on 4th October 1827, Sir John Jamison praised him highly as “the man who has the merit of being the first who cultivated the vine to the extent of making a few casks annually” (14).

Dr Thomas Forster was a British Army Surgeon, who had served under the Duke of Wellington in the Peninsular Wars from 1808 to 1814. After this followed a period of four years in the colony of New South Wales with the 46th Regiment. During this period of service he married Gregory Blaxland’s 17 year old daughter Eliza at St John’s Church of England Parramatta in 1816. The newly-weds immediately moved to India, where Dr Forster was posted to the 14th Light Dragoons. Eliza bore two children in India, Martha and William. William Forster was born in Madras in 1818 and later

became Premier and Colonial Treasurer of New South Wales. He was a noted Political Satirist, as well as a poet and pastoralist. The Forsters later served in Wales in 1822 and Ireland in 1825. In November 1828, Dr Forster retired from the army on half pay and the family set sail on the “Harriott”, arriving in Sydney in December 1829 to join Eliza’s family.

Dr Forster bought “Brush Farm” from his father-in-law in August 1831 for £1,500/10/-. In the mid 1830’s he amalgamated several farms in the nearby Field of Mars area to form “Deniston”. The eight room house he built was later destroyed by a bush fire, so the property was leased in 1840 to a Major Edward Darvall. Forster’s nephew was one William Rutledge, who became a Government Contractor and a Director of the Commercial Banking Company of Sydney. Rutledge came out to New South Wales with the Forster family in 1829 and in 1840 built “Eastwood”, the house on the property adjoining “Brush Farm”.

Dr Forster maintained the vineyard on Brush Farm for it appears on a Surveyor General’s map of the area dated 16th April 1862.

On the 1st April 1844, Dr Thomas Forster’s son William began a 40 year lease on “Brush Farm”, but Dr Thomas Forster must have stayed on because the Sydney Commercial Directory of 1851 gives Thomas’ address as Brush Farm. Dr Thomas Forster died on the 6th February 1856, his wife Eliza on the 23rd November 1876 and his son William on the 30th October 1882.

DR JAMES BOWMAN OF “LYNDHURST”

“Lyndhurst” was one of the many larger homes in Sydney, which had an extensive winery in the estate gardens. The Lyndhurst Estate consisted of 40 acres at Glebe on the shores of Blackwattle Bay and belonged to Dr James Bowman. Dr Bowman had a keen interest in vineyard, most likely fostered by his brothers-in-law William and James Macarthur and he established a large vineyard on his 12000 acre property near Singleton, called “Ravensworth” after 1824.

Dr James Bowman was born at Carlisle, Cumberland, England in 1774. In 1806 he joined the Royal Navy as an Assistant Surgeon, but in 1816, being reduced to half pay, he accepted a berth as surgeon on the convict ship “Mary Anne” bound for New South Wales. When it arrived in Sydney on the 19th January 1816, he was disappointed with his prospects in the new colony and returned to England, only to return on another convict transport, the “Lord Eldon” in 1817 (his prospects in England couldn’t have been any better either!). It was during this voyage that Bowman met his future father-in-law, John Macarthur.

He again returned to England and finally came back to Australia on the “John Berry”, along with Commissioner J T Bigge in 1819. He had been appointed to succeed Dr D’Arcy Wentworth as Chief Surgeon at Sydney Hospital, despite the fact that Governor Macquarie wanted his protégé Dr William Redfern, to have the appointment instead. He made many improvements to Sydney Hospital wards, nursing staff, rations and an adequate supply of instruments. He added a mortuary and dissecting room.

In 1823, Dr James Mitchell, father of David Scott Mitchell (of the Mitchell Library fame) was appointed to Sydney Hospital to assist Bowman. Dr Mitchell was later to attempt to establish a vineyard on his property at Stockton near Newcastle, only to see it fail.

Bowman married John Macarthur's second daughter "Elizabeth" in 1823 and the following year he became a member of the local committee of the Australasian Agricultural Company, which eventually began trading at a loss. About that time too, he was made a local Director of the Bank of Australasia, which also went into liquidation.

In 1833, Bowman had been appointed Inspector of Colonial Hospitals, but this appointment was terminated when the hospital administration was placed under military control in 1836 and Bowman retired to "Ravensworth", "Waverley" and "Lyndhurst" to William and James Macarthur in 1842.

He died suddenly on the 23rd August 1846. A human and competent surgeon, he had been largely influenced by Macarthur to participate in unsound business ventures, which finally brought about his ruin.

DR WILLIAM BLAND OF "MARK LODGE"

Dr William Bland was one of those colourful and multi-talented characters who make history so interesting. He was born in London on the 5th November 1789.

He trained in Medicine, becoming a Member of the Royal College of Surgeons and was appointed a Surgeon's Mate in the Royal Navy in 1809.

Whilst serving as a Naval Surgeon aboard HMS "Hesper" at Bombay, India, Bland had a wardroom argument with the ship's purser, Robert Case, who challenged Bland to a duel with pistols. The duel took place on 14th April 1813 and Case was mortally wounded in the abdomen. At his trial, mercy was recommended and Bland was sentenced to seven years transportation for murder.

Bland arrived at Hobart Town in the "Denmark Hill" in January 1814 and reached Sydney aboard the "Frederick" on the 14th July 1814, where he was sent to tend the needs of the inmates at the Castle Hill Asylum. He received his pardon on the 27th October 1815 and began full-time practice in Sydney.

He was back in gaol again for one year in 1818 after lampooning the Governor Lachlan Macquarie. Following his release from Parramatta Gaol, William Bland recommenced his private practice of medicine and started his many and varied social good works.

In 1821, he began a long association with the Benevolent Society; he was on the staff of the Sydney Dispensary and was a leading figure in the establishment of the University of Sydney. His long political career began in 1843, when he was elected, along with William Charles Wentworth, to the first Legislative Council of the Colony.

He was noted for his social and constitutional reforms whilst in Parliament and as a philanthropist helped develop basic education in the colony and the formation of the

Sydney School of Arts and the Mechanic's Institute. He was elected first President of the Australian Medical Association. Bland continued in active medical practice until he died on the 2nd July 1868.

To escape from his hectic Sydney life, Dr Bland purchased "Mark Lodge" from the estate of John Horsley as a country retreat in the early 1840's, developing gardens, orchards and extensive vineyards on the property.

DR ALEXANDER BERRY OF "COOLANGATTA" AND "CROWS NEST"

Alexander Berry was born on the 30th November 1781 at Fife, Scotland and studied medicine at the University of St Andrews. He was appointed a ship's surgeon's mate with the ships of the East India Company and whilst serving with the Company, quickly recognised the profitability of trade and abandoned the practice of medicine for trade.

He entered a period of trading in the 520 ton ship "The City of Edinburgh" and arrived in Sydney in January 1808. Operating from Sydney he traded with New Zealand for spars and Fiji for Sandalwood and then onto South America. Eventually the ship sank off the Azores and Berry finally arrived in London in 1812.

During this period, Berry had met Edward Wollstonecraft, who was later to become Berry's business partner and later still his brother-in-law when Berry married Edward's sister Elizabeth on the 21st September 1827.

Whilst in New South Wales, Berry visited the Shoalhaven District in 1822 and later explored the area with Hamilton Hume, whose eventual partnership with Hovel was to identify him as one of the great explorers of Australia.

Berry and Wollstonecraft received a grant of 10000 acres and at the foot of a hill called Cullangatta by the local Aborigines, they established their property “Coolangatta”.

Coolangatta was a model farm and Berry experimented with every type of crop, including the establishment of a vineyard. By 1844 the “Coolangatta” empire of agriculture, livestock and timber getting (mainly cedar) had grown to an area of 65000 acres. Berry and Wollstonecraft integrated their farming and mercantile activities by selling much of their produce from the property through their large George Street store.

The partnership built their own ships to transport their produce to Sydney or to ship their timber overseas. One vessel named after the settlement sank off the coast of southern Queensland and the nearby town now bears its name, Coolangatta.

Wollstonecraft died in 1832 leaving his half of the business to his sister Elizabeth Berry. Included in his estate was his grant of 524 acres at North Sydney he had called “Crows Nest”, because of its prominent position. The present day suburbs of Wollstonecraft and Crows Nest are named after Wollstonecraft.

Following his partner’s death, Berry found the burden of running their joint ventures as before too much and sold the store, leased Crows Nest and moved permanently to “Coolangatta”.

With the cessation of convict transportation and the “fever” of the gold rush, Berry found it very difficult to get labour to run Coolangatta and so in the 1850’s he began to let farms to tenant farmers, thus helping to develop the Shoalhaven district.

In addition to his great pressure of business, Berry found time to be a Justice of the Peace, founder and Secretary of the Agricultural Society (1822), a member of the Philosophical Society, a part time geologist and anthropologist, studying mainly the local Aborigines. Between 1828 and 1861, he was a “very conservative” member of the Legislative Council.

After his wife’s death in 1845, Berry became a recluse and in 1850 moved into “Crows Nest” House, which he had built. David, his brother, managed “Coolangatta”, whilst he developed the North Sydney Estate. Today Berry Street, North Sydney, commemorates the man, but in the mid 1800’s, North Sydney was an orchard and Berry developed a substantial vineyard there and in his letters he commented on the wine he had made.

Alexander Berry died at Crows Nest on the 17th September 1873 without issue and his brother David inherited the entire estate, including over 100000 acres of land. As stated earlier, Berry was keenly interested in agriculture, writing to a friend in 1825, Berry said that if the former returned to New South Wales, he “could not bring a more acceptable thing than some of the latest and most esteemed French publications on agriculture, particularly those treating of the cultivation of the vine and olive”.

Through the Agricultural Society, Berry had access to the best plants available in the colony including vines for his vineyard.

Governor Brisbane wrote “The Governor presents his compliments to Mr Berry and has much pleasure in acquainting him for the information of the Agricultural Society that he has received by the “Minerva” 800 cuttings of eleven varieties of vines from the Cape of Good Hope, a proportion of which he will be happy to present to the Agricultural Society at the proper season for removing them”.

Gov. House, Parramatta 1824

Gov. Brisbane (15)

Berry had one other connection with the wine industry in Australia in that he was a close friend of James Busby and corresponded with him frequently, besides defending him against the Sydney Press as to the origin of the Sydney Botanic Garden vine collection. The original copy of Busby’s book published in 1830, held in the Mitchell Library, has a dedication to “My Dear Alex”, written in the front cover by James Busby.

DR CHARLES MACKAY OF “MININCHINBURY”

The Minchinbury story begins with the arrival in Australia of Captain William Minchin.

Born in Ireland in 1774, he was commissioned in the New South Wales Corps on the 2nd March 1797 and sailed with his wife Ann for New South Wales on the female convict transport ship the “Lady Shore”, from Portsmouth in May 1797, as an adjutant.

Ensign Minchin was placed in command of a company of seventy convicts of the New South Wales Corps, bound for garrison duty in Australia.

These recruits, who were a motley lot, included French and Irish Army deserters and former men of the British Army sentenced to life imprisonment for offences committed whilst serving in the Army. Their sentences had been commuted, provided they joined and served with the New South Wales Corps. The only thing separating the guards from the convicts, in most cases, was the uniform!

Whilst on the voyage, these ‘recruits’ were to guard the sixty-six female convicts. The scene was set for a most interesting voyage!

Before dawn on the 1st August 1797, when the ship was nearing Rio de Janeiro, the recruits mutinied and then were quickly joined by the ship’s crew. The ship’s Captain was killed, along with the First Mate and one of the French mutineers.

Minchin, his wife Ann, some officers and other women and children passengers were kept prisoners for a fortnight before they (29 in all) were cast adrift in a long boat off Rio Grande, Brazil.

The “Lady Shore” sailed away – the only convict ship destined for Australia to ever successfully mutiny, with the mutineers and female convicts enjoying a most celebrated “honeymoon” cruise.

The mutineers eventually reached Montevideo where they were arrested and gaoled as Prisoners of War, whilst the female convicts were forced to become domestic servants and the ship “Lady Shore” was seized and sold as a prize of war. Justice prevailed in the end.

The longboat reached Rio Grande safely and the survivors were returned to England. Minchin was court martialled for his lack of action in the mutiny, acquitted and sent again to New South Wales. (Some people at the time would interpret that as a sentence, anyway).

The New South Wales Corps virtually ruled New South Wales, operating a monopoly in trading, principally trading in rum, which was recognised as the main currency of the colony at this time. Hence, they became known as the Rum Corps.

In 1806, Governor Bligh (of the Mutiny of the Bounty fame), was despatched by the British Government to quell the powers of the New South Wales Rum Corps. Bligh was so successful that on the 26th January 1808, Major Johnson and others instigated the notorious “Rum Rebellion” when they marched on Government House at Parramatta, with the intention of arresting Bligh.

Captain Minchin was on duty that night, supposedly guarding the Governor and as in the mutiny aboard the “Lady Shore”, he was again ineffective and in fact, he not only admitted the mutineers, but joined them as well. He was later to return to England to present Major Johnson’s report on the Rum Rebellion and later still, to give evidence on Johnson’s behalf at Johnson’s subsequent trial.

By now the New South Wales Corps had been disbanded, so Minchin resigned his commission and returned to Sydney in September 1818, where he took up a grant the following year, west of Rooty Hill, which he named “Minchinbury”. The Minchin’s also had a residence in Sydney where Minchin worked as Superintendent of Police, being appointed by Governor Lachlan Macquarie to this position in April 1820. Minchin died in Sydney in March 1821.

Following Minchin’s death, Ann wrote to Governor Macquarie in July 1821, requesting more land at Minchinbury and convicts to work it. Macquarie granted her an additional 200 acres, bringing the total area to 1200 acres. On the 28th April 1823, the Reverend Samuel Marsden married Ann to Captain Eber Barker of the Merchant Navy. Ann’s daughter Maria married Mr Henry Howey in November 1826, when she was only sixteen and had her first child at Minchinbury in October 1827. Maria and Henry then moved to “Strathern” near Goulburn, New South Wales, to take up a large grant.

Ann and Eber Barker separated in 1833 and Ann subsequently lived with her daughter Maria, who had returned to Minchinbury in 1835. Ann died at Minchinbury in 1837, aged 62. Maria Howey now owned Minchinbury.

Meanwhile, Henry Howey expanded his land holdings and purchased a large area in the heart of a new town, soon to be called Melbourne, after Queen Victoria’s favourite statesman, Lord Melbourne. On the 21st June 1838, the Howey family, Henry, Maria and their seven children aged from two years to 11 years, sailed on the brigantine

“Sarah” to inspect their new acquisition. the ship cleared Sydney Heads, only to run into a violent storm, never to be seen again.

As there were no surviving children of Maria, the Minchinbury Estate was inherited by William Minchin’s brother George, who lived in England and who gave Power of Attorney to Mr Justice Dickinson of the Supreme Court of New South Wales, to sell the estate.

On the 23rd July 1859, the property was sold to Dr Charles McKay. Dr McKay was born at Kilren, Ireland in 1822 and it was he who planted the first vines at Minchinbury in the mid 1860’s and had the original winery constructed from sandstone with walls eight feet thick.

Reports of convict’s leg irons being found on the property in recent times would not relate to the vineyard, but to the period when Mrs Minchin owned the property as transportation ceased in New South Wales in 1848.

Dr McKay won medals and honourable mentions for his wines at the 1879 Sydney International Exhibition. The following is an article about Minchinbury from this era.

A Visit to Minchinbury

(BY OUR SPECIAL CORRESPONDENT)

From Town and Country Journal, 14 December 1872

“On Saturday last I accepted an invitation to visit the above estate and vineyard. We took the 1.30 pm train from Redfern station, and arrived at Rooty Hill at about ten minutes to 3 o’clock. When we got to the station and had admired the scenery, clad in deep green, we struck across the bush through some open forest land, slightly undulating, for some distance, and then ascended a slight eminence, where we crossed the Great Western Road, and entered Minchinbury, 25 miles from Sydney.

Minchinbury, Lubin Park, and Rooty Hill three picturesque estates, comprising upwards of two thousand acres of land, altogether, are the property of Dr McKay, of Church Hill Sydney. The soil is chiefly of volcanic origin, and presents, in places, an appearance of surpassing richness, some pointed out to me having been under crop for over a quarter of a century.

Minchinbury was formerly the residence of Captain Minchin who had charge of a prisoner gang forming the Great Western Road. He built a nice residence on a commanding position, near the road side, but it was destroyed by fire.

A tradition still exists that the lady of the captain had some money in the orchard near which she is still buried. The estate is one of the prettiest that can be imagined. On an eminence near the site of the old house there opens out a view in the distance of the Blue Mountains and the railway Zigzag, while spread below and on the neighbouring

hills are the green fields, the wine cellars and the vineyard of the estate, the hole bounded by a military-looking band of tall straight trees.

Since Dr McKay took possession he has shown himself a true colonist by studying the best means of developing the resources of the estate. Among the chief of his labours has been his attention to the cultivation of the vines, and in this he has been eminently successful.

At Minchinbury there are now about 44 acres under vines, but the most of these are young vines from three months to two years in the ground. There are actually undercrop 32 acres. The vines throughout the vineyard are planted 6 feet apart in rows also six feet wide. To each vine there is devoted a strong stake, which is so inserted that the widest part shelters the young vine from the southerly winds. The vineyard nearest the road is 12 acres in extent, and has a north-eastern aspect, being planted on the hillside. Though only recently planted, these vines look very healthy.

The second or principal vineyard is about a quarter of mile distant across a valley. This is 32 acres in extent and is in a great part in full bearing. This vineyard is remarkably well kept and I have not seen in any part of the colony vines looking more healthy. It is also on the hillside, having a north-eastern aspect and divided and subdivided into many squares. There are upwards of six miles of drains intersecting it. The grapes planted are the Lambruscat, Riesling, Shiraz, the Verdelho, Burgundy, Pineau, Blanc, Hermitage and Muscatel. The three former kinds are chiefly grown in the vineyards. The grapes are already forming and promise large returns should they have anything like fair play. I

was informed that a hail storm on Christmas day, 1869 destroyed sufficient grapes to have made 80 hogsheads of wine in less than a quarter of an hour.

From the vineyard we proceeded to the cellars at the foot of the hill. The cellars, under the charge of Mr Gilbert, are well constructed of brick, all made on the estate. The cellars in two divisions, are 64 feet in length, and 40 feet in breadth. Cool wells are in the centre.

There is storage capacity for 80,000 gallons. There are already a large number of casks and vats in the cellars. In the first room entered are two immense vats, and a capital screw. ...I saw a useful article which I must not admit to mention, viz, a grape crusher. Those who have had experience of the wines in several districts of this colony, complain of the bitter taste they possess attributed to the crushers being so constructed that not only the grapes, but also the stones are crushed. When the grape stones are broken a bitter taste is inevitably produced.

In the crusher at Minchinbury there is sufficient space left between the rollers of the crusher, that while the grape is crushed the stones escape. A covering over the crusher separates another objectionable matter, viz, the stalks of the grape. Some of the casks are great size, holding I should think from 800 to 1,000 gallons. Some of them are of oak, and others of colonial black butt. Many of them are supported by iron bands and staves, which prevent the heads giving way.

The next operation, and not the least interesting duty, is the tasting of the Minchinbury wines.

A good deal of talk has been indulged in, regarding the value of Australian wines and the few really good judges in Australia have rendered it a matter of difficulty to determine where the best wines are grown. For myself I can claim almost a cosmopolitan experience, and in offering an opinion I do not wish to undervalue wines made in other parts of New South Wales. The qualities chiefly submitted were Riesling, Burgundy and Heritage, the vintages of 1869 and 1870. I can assert these will compare favourably with the best that I have before tasted in the colony. I was indeed surprised at the excellence of the Riesling, and the near approach the Hermitage seemed to possess to the best claret. The wines were rich in flavour, full in body, and well kept. Dr McKay expects to have this year upwards of 12,000 gallons from his vineyard, and if it turns out as there is every reason to believe, of like quality to that already made, the spirited proprietor of Minchinbury, may justly be congratulated on his success. On every side are evidences that he has spared no expense to make the vineyard everything it ought to be.

Before closing this brief description of Minchinbury, I must not omit to mention that Dr McKay has also directed his attention to the planting of the mulberry and silk culture. He has already done a little under most unfavourable circumstances, and is now about taking the matter in hand on a larger scale. I understand that a large portion of the estate will be planted with mulberries.

After enjoying a capital dinner, we took the 7.30 train from Rooty Hill, and arrived in Sydney shortly after 9 pm, having spent a most delightful afternoon” (16).

Following the Depression of the 1890's, Dr McKay in 1895 was forced to sell Minchinbury to James Angus. James Angus was born in Perthshire, Scotland in 1836 and had made his money in the goldfields of New Zealand and as a railway construction contractor in Australia during the 1880's and 1890's.

He introduced modern winemaking technology to the winery and was a successful exhibitor at the Royal Agricultural Show in 1897. The following is an article about Minchinbury from this era.

MINCHINBURY ESTATE
A WELL-CONDUCTED FARM AND VINEYARD
SENSIBLE METHODS AND PROFITABLE RESULTS
(by 'St Magnus')
(Town and Country Journal, 29th December 1900)

“Minchinbury Estate, the property of Mr James Angus and Sons, the well-known railway contractors, is situated at Rooty Hill, 25 miles from Sydney, on the western railway line. It consists of 2000 acres of prime, undulating country, well grassed and well watered, both naturally and artificially; and commanding a superb view of the Blue Mountains and the Kurrajong Heights. The Estate has been improved by clearing, subdivision into paddocks, the sowing of exotic grasses such as cocksfoot, prairie grass, rye grass, lucerne, etc; the conservation of water in reservoirs, dams, tanks and wells; and clumps of timber have been left here and there for shelter purposes for cattle and horses. The property has an extensive frontage to the western railway line. Minchinbury House, where the family resides, forms a pleasing and conspicuous object in the landscape, and is situated at Rooty Hill station. It is a spacious, two-storeyed brick building of 26 rooms, which are elaborately and tastefully furnished. The grounds are adorned with numerous foliage and flowering plants, and the kitchen gardens contain vegetables of various descriptions, intermixed with fruit trees and various flowering plants, roses being particularly noticeable. The outbuildings and offices are numerous, spacious, and, like the main building are substantial and convenient. In fact, Minchinbury House is very complete, and is one of the best of the kind in the Australian colonies.

The Vineyard

A feature of the estate is the vineyard and wine cellars, which are among the oldest in the colony. The vineyard is 75 acres in extent, some of the vines being over thirty years of age, and still in robust health and luxuriant bearing. The position of the vineyard is on one of the undulating hills of the neighbourhood; the soil is a fairly stiff, brownish loam, of considerable depth, with a clay or shale subsoil. The vines comprise various varieties of wine grapes, and they seem to thrive to perfection. Originally, they were

planted 6 ft. apart, but becoming too crowded as they grow older, Mr Angus had every other row dug out on the diagonal, which gives them over 8 ft. apart between the rows, and the diminished number of plants yield a greater weight of grapes per acre than the large number did. Some portions of the vineyard have been treated by sawing the old stumps of the vines square off a few inches above the surface of the ground and encouraging the growth of new wood. The vines are trained on the trellis or espalier system, on three wires, suspended on stakes set in the ground. The vineyard bears evidence of being well cared for, well cultivated, free from weeds, and worked on a thorough system. The wine cellars are spacious, composed of brick and wood walls, with iron roof. The varieties of wine made mostly consist of Burgundy, Hock, Shiraz, Claret, Port, Hermitage, Madeira and Reisling. The cellar at present contains about 90,000 gallons, mostly contained in casks of 1,000 gallons each, of the best American oak. The annual output of wine from the 75 acres is about 20,000 gallons. The wine presses are two ton each – worked by hydraulic pressure. The hydraulic pump which works the presses is capable of putting on a pressure of 2500 lb per square inch, or on each press a weight of thirty tons. The vessel which contains the water which feeds the pump is 2 ft 6 inches x 15in in dimensions, and the same water may be used over and over again. The most scrupulous cleanliness is observed in the cellar. The bottles are first boiled in caustic sodawater, and then brushed out in cold water, so that the microbes have no chance. Water for cleansing purposes is laid on all over the premises, and there is an abundant supply of this indispensable element furnished by a large catchment reservoir close to the cellar. The wines, of course, made under such conditions are first class, and have a great reputation over all the Australian colonies, their purity and flavor rendering them particularly suitable for family consumption. Much more might be said of the vineyard and cellar, but space forbids.

The Farm

About 1300 acres of the estate are leased to neighbouring farmers for dairy purposes and about 100 acres are cultivated for horse and cow feed for the dairy herd. The crops cultivated are lucerne, maize, oats, pumpkins, magnolds, and various exotic grasses, etc. Messrs Angus and Sons make a point that all the grasses, foddors, and roots grown on the farm are consumed by the animals on the farm, and sent to market in the shape of milk, butter, port, or beef. As Mr John Angus puts it, "We put everything we grow down some animal's throat on the premises, except the produce of the vineyard, and that we make mostly into wine." For instance, maize and oats are made into ensilage, or the latter sometimes made into hay. The ensilage pit is worthy of a detailed description. It is circular in shape, built of bricks laid in cement, the wall 9in. thick. It is 25ft deep and 16 ft in diameter with a concrete floor. It is built partly underground, and about 6ft or 7ft of it above ground, and will contain about 80 tons of ensilage, and the whole building cost 84 pounds covered in. The fodder, say maize, is cut while in the dough stage, chaffed by an ensilage cutter, set close to the side of the pit so that the chaffed stuff falls directly into the pit, where a man spreads it evenly over the surface, and tramps it down firmly, particularly around the walls. No other pressure is applied, and the surface is neither weighted nor covered. It can be used from the beginning, and it matters not if it is worked down for a few feet and then refilled with fresh fodder. The whole plant is used – stalk, leaves, and cob. When put down, about one bucket of common salt is used to every 2 tons of ensilage. There is no waste, except about 2in or 3in on the floor of the pit, and no care is needed in using it more than that a layer of about 2in is taken off each day, so that the surface has no chance to become mouldy.

About 23 lb of ensilage is fed to each cow twice a day, and it does not flavor either the milk or butter. Mr Angus has had considerable experience in the making of ensilage, and he is a close observer. He does not favor square ensilage pits. He says there is much waste in the corners, which is obviated in the circular shape. He does not favor the American ensilage pit, built above ground, of oregon pine, and hopped round. He says the pine planks leak air, especially on the weather side and there is much waste of fodder on that side. This is saved by the cement brick wall built mostly below ground. Sometimes oats are used as ensilage at Minchinbury, and one cubic foot of corn ensilage will weigh 32 lbs, one cubic foot of oaten ensilage will weigh 36 lbs. Mr Angus is a great believer in mangolds for cattle food, in addition to the ensilage, the cows get as many mangolds as they like to eat, and they thrive well on this diet. The ensilage and mangold diet does not taint or flavor either the milk or butter. He cultivated last year 5 acres of mangolds, which yielded 125 tons of roots, some of which weighed 50 lbs each, and the season was a dry one. The mangold field was land on which maize had been grown. It was well cultivated and manured with bonedust and kainit, to the value of 29s per acre. The roots were worked by using the scarifier between the rows, to keep weeds down, and hand hoeing to thin the plants out. Mr Angus believes in mangolds in preference to turnips for milch cows. Turnips, he says, would taint the milk, Lucerne acts very well as pasture at Minchinbury. Cattle are grazed on it continually, without reference as to whether the weather is wet or dry, and no accidents have ever resulted from blowing, immunity being, it is said, due to the fact that the animals are never turned in on it on an empty stomach. The mangolds were sown in drills, the drills opened, seed and maize sown, and drills closed with the corn-planter.

The Dairy Herd and Dairy

The dairy cows are principally Ayrshire and Jersey crossbreds, and Mr John Angus says that they suit the conditions of the country very well. Recently some very superior Ayrshire cattle have been imported from New Zealand. Among others, the fine Ayrshire bull Count, sire Ben Lomond, by Silverpeak, No 40 in the New Zealand stud book, by Ayrshire King, by Baron II, by Drumlarig (imp.). There are a number of cows, all from the famous stud of Mr James Galt of Southland, New Zealand. Among these is Lady, a typical Ayrshire beast, 3 years old, showing noble proportions, sire President, dam Violet III, grand sire Master Jack (imp.). Lady Oliver III is another of the group, and the same sire, dam Alice and the grandsire of Sir James. Agnes comes next, by the same sire. She is the representative of a famous milking and prize-winning family. Edith, her mother, was the winner of the prize for the best cow for dairy purposes shown at the agricultural show at Wyndham, and also at Invercargill. Gladys, Blue Bell, and Ladysmith are other three young cows, members of the same group, and are in every way worthy representatives of the breed, and for quality and performances stand unexcelled in the colony. Various other high-class Ayrshires are noticeable in the herd, as well as some others of a mixed breed. Several of these are in calf to the well-known New Zealand Ayrshire bull Tam O'Shanter bred by the late K.B. Ferguson, of Blueskin (NZ). Tam O'Shanter is by Ayrshire King by Kate O'Shanter, grandsire Teviot. Another very fine animal, owned by Messrs Angus, is the Holstein bull, Milk Boy, by Dairyman, dam Dairymaid II, grandsire Commodore (imp.). All told there are about 130 dairy cattle now on the estate, which are of superior quality, and derived from famous milking families.

The milking sheds are well constructed, the floor being concrete, with asphalt on the top. There are a double row of bails, thirty-two on each side, and the cows stand tail to tail with a 6 ft space, and table drains between. The stalls are 6 ft long and 4 ft in wide. The bails work by lever motion, and may be all opened or shut at once. The cows may be chained up to the stanchions if necessary, and leg-roped if necessary. Generally, however, it is sufficient to pin the tail to one side by a peg in a hold in the stall-post. There is a space for a trough in front for feeding the cows. They are generally given a handful of bran or pollard to chew while being milked. Ensilage too, is fed to them in the trough, and the animals will follow all over the cowhouse for this fodder. All food is chaffed or grammed before being fed to the cows. Water is laid on to the milking bails, and the drains may be flushed on with it at pleasure. The dairy is rather an unpretentious building, but it has every requisite, and is kept scrupulously clean. There are, of course, the milk vats and cooler, Laval separator, Babcock milk tester, churn, butter worker, etc. A windmill is employed to raise water to a tank, from whence it can be delivered to the dairy under pressure. The dairy machinery is run by a 2-h.p. engine. An oil engine is also employed to do the chaffing and gramming of oats, cracking corn, chaffing ensilage, etc., before feeding to the cows; indeed all cattle food is treated in this way. There are also a number of pigs, chiefly crossbred whites, on the estate, about 25 horses, and a large number of implements, all of modern or improved type. The soil on the estate I noticed to be generally brown loam of a good depth on the hills, with a clay or shale, and in some instances sandstone, subsoil. On the flats it is of a stiffer and sometimes poorer nature, while in the hollows and on the creek banks there are good depths of vegetable mould, with clay or shale subsoil, all fair soil. Of course, such soil requires draining, and accordingly the vineyard has been drained where necessary. On one portion of the estate there is a valuable bluestone quarry, capable of producing an

unknown quantity of blue metal. In short, a day spent at Minchinbury is a day well and profitably spent, for we there see the various agricultural industries of the country being profitably, intelligently, skilfully, industriously and economically developed. There is a place for everything, and everything in its place. There is no fuss and no frill, but every operation is conducted with commonsense, giving evidence of practical experience, coupled with sagacity at every turn. There is a close application of useful and improved methods, and a painstaking industry. The results are excellent. The wine does not become vinegar, the milk does not go prematurely sour, the butter is not fishy, and yet there is no straining after high-class so-called scientific terms and methods. Hot and cold water, common sense, and elbow grease comprise the scientific staff of the wine cellar and dairy. The butter is not termed gilt-edged, but it is among the best in the market, and it is all accomplished in a private dairy. In looking over the Minchinbury Estate, one is forced to the conviction that there is a profitable living to be made by mixed farming in Australia, if a man knows his business; but he must know it, and he must know farming under the conditions of soil and climate as obtainable in Australia.

Among our illustrations are portraits of Mr James Angus, and of his son John, the manager of the dairy, vineyard and farm. Mr James Angus is a typical Scotchman, self-made, thorough in his business, and sagacious and prudent in his undertakings. He is an old New Zealander, having immigrated to the country in 1861. After a training to hardship and self-dependence on the goldfields of that colony, he became a railway builder, and constructed many of the best works in that colony. After a time he came to New South Wales, and, in conjunction with Mr Monie, became a railway contractor here. His son John is as yet only a young man, but he shows great promise of becoming a thorough agriculturalist. He is a good dairy manager, and a good cultivator, and is

conversant with vineyard management and winemaking. There is a son, James, a railway contractor in West Australia” (17).

Besides modernising the winery, probably Angus’ main contribution to Minchinbury was his success in obtaining Leo Buring as his wine-maker in 1902. At that time, Leo Buring was working for the Great Western Winery and was undoubtedly the finest pioneer maker of Champagne in Australia.

Under his guidance, the first champagne [sic] at Minchinbury was produced in 1903 and released in 1908. From 1908 to 1912, the high quality of his champagne was recognised internationally and rewarded routinely by carrying off the Gold Medal in the class at the London Breweries Exhibition.

Herman Paul Leopold (Leo) Buring was born in 1876. His father was one of the founding partners of Buring and Sobels, the partnership that was later to become Quelltaler Estate. Buring studied viticulture and oenology at Roseworthy Agricultural College where he was the Dux in 1896. He then went to Geisenheim in Germany and to Montpellier in France to further his studies. He returned to Australia in 1898 to work for his father.

Phylloxera, a mite which attacks and kills vine roots was first observed at Geelong in Victoria in 1875. By 1898 the pest had spread to Sydney and infected the vines at Minchinbury and subsequently destroyed the vineyard. The vines were burned off and the vineyard replanted with American phylloxera resistant root stock.

The opportunity was taken to plant new varieties suitable for light wines and sparkling wines and Minchinbury was able to build up a comprehensive collection of varieties.

In 1912, Frank and Herbert Penfold Hyland saw the need for Penfold's Wines to enter into the sparkling wine sector of the wine industry and were able to purchase Minchinbury from Mr Angus, who wished to retire. Angus was killed by a train on the 12th April 1916 at Rooty Hill station. However, Leo Buring continued with Minchinbury until 1919, when he left to become one of Australia's first wine consultants.

Buring was appointed by the Commercial Banking Company of Sydney to trade the struggling Lindemans Company out of its financial difficulties and was unable to do so, and in 1931, he formed Leo Buring and Company with Reginald Mowat of Great Western.

Whilst at Minchibury, Leo Buring planted 1000 olive trees, which lined the main driveway at the vineyard. The oil from these trees was used to prevent oxidation of the wines made on the estate.

Penfolds expanded the cellars to store the extra quantity of champagne bottles needed until well over 1,250,000 bottles could be cellared and further expanded the vineyard until over 400 acres of vines were producing Verdelho, Riesling, Cabernet Riesling, Pinot Noir, Hermitage, Traminer and Pinot Blanc.

Edouard Emile Bernier was wine maker from 1920-41. This French gentleman came from Sir Josiah Symon's "Auldana" vineyard at Maghill near Adelaide, where he worked with two other famous French wine-makers, Leon Edmond Mazure and Duray between 1909 and 1920. These men were all expert champagne makers and M. Bernier continued and built on Leo Buring's reputation for high quality champagne, and in turn was succeeded by Alexandre Combet.

In 1954, the vineyard was further expanded when 34 acres of Traminer was planted at Southridge, a few miles from the winery. By 1962, soil erosion and exhausted soil from constant cropping meant the vineyard had to be wound down. The winery was still operative until June 1978 using grapes imported from other vineyards and from July 1978, the winery and cellar operations were continued at Tempe.

Whilst making Australia's most famous champagne at Minchinbury, Penfolds led the way in champagne technology in Australia by introducing crown sealing of the corks, to prevent the escape of gases from the bottle. This method replaced the older "Agrafe" method, using a steel clip to hold in the cork.

Another interesting Minchinbury phenomenon is that the cellars were populated by spiders similar to the normal "Daddy Long Legs". These spiders were identified by an entomologist as French spiders, found nowhere else in Australia, and obviously had come from France in machinery and corks imported last century. These spiders kill the cork moth whose larvae destroy the corks in the bottle.

On the night of 13th April 1987, the Minchinbury Winery Cellar complex, which was classified by the New South Wales Heritage Council, was destroyed by fire.

DR FREDERICK NORTON MANNING OF GLADESVILLE ASYLUM

A Psychiatric hospital is a most unusual place to find a vineyard, but in the late 1800's, some more enlightened doctors in charge of these institutions tried to help their patients by providing them with meaningful outdoor activities such as gardening and farming.

These activities not only help the patients, who prior to these innovations, had literally nothing to do in usually barren and austere surrounds, but provided supplementary food for the institution, which helped reduce costs. Any excess produce was sold to further supplement the budget.

Thus besides vineyards, vegetable gardens, orchards and dairies were established. Dr W Beattie-Smith at Ararat Asylum in Victoria established a large vineyard there in the 1880's and the wine he made was called "Golden Chasselas". In 1889, 450 gallons of this wine were made.

Dr Frederick Norton Manning was responsible for establishing the vineyard at Gladesville Psychiatric Hospital (formerly called Tarban Creek Asylum) in 1870.

Manning, born at Rothersthorpe, Northamptonshire, England on the 23rd February 1839, trained at St George's Hospital, London, where he gained MRCS & LSA in 1860 and later an MD at St Andrews in 1862.

In 1864 he was surgeon on board HMS Esk – a brig that took part in the Maori War in New Zealand. He was present at the savage fighting at Gate Pa in which most officers of the Naval Brigade were either killed or wounded.

By the time the HMS Esk had arrived in Sydney in 1867, Manning had suffered so much with sea-sickness he gave up his Naval career and asked the Colonial Secretary, Henry Parkes, for permission to visit Tarban Creek and Parramatta Asylums.

He was invited to be Superintendent at Tarban Creek and returned to London on the HMS Esk to assess the latest psychiatric facilities in Europe and USA. He was appointed Superintendent on the 15th October 1868 and immediately set about improving the lot of the patients who lived in “prison like and gloomy conditions” (18), ate poor rations and had very few facilities for employment or recreation.

The Bishop of Hobart commented in 1863 that Gladesville Hospital had “no green trees and no gardens” (19). Dr Manning, in his initial report, stated that “the chief question of importance as regards this institution is the possibility of the acquisition of land for agricultural purposes” (20).

In his annual report for 1870, Manning noted that “a tank with a capacity of 30000 gallons had been excavated out of solid rock to contain water for the garden”, also that “scurvy had appeared manifested by tender gums and purpuric blotches and it had been necessary to supplement the diet with wine, beer, lemons and salads” (21).

The report of 1872 stated that “The vineyard which had been planted at Gladesville some years before was bearing well” (22).

Other appointments held by Manning included “Inspector General of the Insane 1876, Hon. Sec. of the Board of the Royal Prince Alfred Hospital 1885-87, Director of the Board 1888-89, Medical Adviser to the Government 1889, President of the Board of Health, Immigration Officer, Member of the Police Medical Board, Trustee of the National Art Gallery, President of the Australian Trained Nurses Assoc., and Director of the Equitable Life Assurance Company, as well as lecturer and examiner in Psychological Medicine at the University of Sydney.

He resigned his position of Inspector General in 1898 and entered private practice. Dr Manning died from a stomach ulcer on the 18th June 1903, a bachelor, and was buried at the Gladesville Hospital.

Some of the causes of insanity, last century, make interesting reading. Tertiary syphilis and alcohol abuse were the main causes, but the others included fever, hereditary “taint”, epilepsy, mental anxiety due to business failures caused mainly by drought and depression, sunstroke, domestic troubles, lack of sustenance, congenital mischief (such as meningitis), destitution, old age, isolation, head injury.

DR THOMAS HENRY FIASCHI OF “TIZZANA”

One of the more colourful characters to establish a vineyard in the Sydney region was Dr Thomas Fiaschi.

Dr Thomas Henry Fiaschi was born on the 31st May 1853 in Florence, Italy and commenced studies for his medical degree at the University of Florence where his father was Professor of Mathematics and later trained further at the University of Pisa.

Before completing his studies, he came to Australia in 1874 and set up practice at Cooktown in northern Queensland in the middle of a gold rush.

Cooktown was surrounded by swamps and malaria was rampant. Fiaschi displayed great skill and courage by prescribing quinine rectally to combat the disease.

In 1876 he was listed as a “house surgeon” at St Vincents Hospital, Sydney and here he fell in love with one of the nursing nuns. He aided her to flee the convent and they eloped. Due to the notorious scandal that followed, including excommunication by the Pope, the Fiaschis couldn't remain in Sydney and moved briefly to Windsor on the western outskirts of Sydney.

They returned to Florence in 1877 and Fiaschi completed his studies and graduated MD and ChD (Pisa and Florence). He returned to Australia in 1879 where he again set up practice at Windsor on the Hawkesbury River, acting on the advice of the Chancellor of the University of Sydney. Here he gained an excellent reputation as a surgeon.

Whilst practising at Windsor, Fiaschi purchased 230 acres of land at Sackville Beach on the Hawkesbury River in 1882, with the intention of later developing a vineyard. He imported Italian vines and employed a graduate of the Catania School of Viticulture to

produce the first Chianti wine in Australia. Destitute Italian migrants in Sydney were offered employment at his 55 acre vineyard, which he was developing.

Later Fiaschi produced and sold his light dry wine from his own cellars situated in Spring Street, Sydney. By 1889 Tizzana was producing 9600 gallons of wine.

Fiaschi called his vineyard Tizzana after his family home in Italy.

In 1883 he moved his practice to Phillip Street, Sydney and became an Honorary Surgeon at Sydney Hospital in 1894. He was a foundation member of the New South Wales Branch of the British Medical Association in 1880 and was made president in 1889.

In 1891 he was commissioned Captain Surgeon in the New South Wales Lancers and when war was declared between Italy and Abyssinia in 1895, he arranged a transfer to the Italian Army. During this campaign he was present at several battles and helped care for the mutilated prisoners from the Battle of Adowa.

Natives who had helped the Italians and had been captured had their right hand and left foot cut off by the Abyssinians. The captive Italians were emasculated.

After the war, Fiaschi returned to Australia via America where he observed aseptic surgery with the famous surgeon McBurney.

Another war was to keep him occupied as Commandant of the First Field Ambulance of the New South Wales Corps during the Boer War in South Africa from 1898-1901. Again he observed the fighting at close hand and was decorated with the DSO and MID.

Back in Australia on the 27th June 1906, Dr Fiaschi addressed the Australian Trained Nurses Association, his subject being “The Various Wines used in Sickness and Convalescence”.

This wonderful lecture told how every wine was used in medicine and showed his keen interest in and knowledge of wines.

The Fiaschis had 4 sons and 2 daughters when Mrs Fiaschi died in 1913.

Dr Fiaschi married Miss Amy Curtis in August 1914 and World War 1 broke out in Europe. The tireless Dr Fiaschi immediately volunteered and was placed in command of No. 3 Australian General Hospital on the Greek Island of Lemnos, which received the wounded and sick soldiers from the hell of Gallipoli. He himself was wounded and repatriated to England, only to join once more the Italian Army as a surgeon in their war with Austria.

During this time as Surgeon in Charge of the Italian Army hospital at Trentino, he didn't eat well and developed “beri beri”. He often stated whilst recovering in London under the care of the famous physician Sir William Osler, that he would not have become ill if he had been able to drink his Australian wine.

Following his return to Australia in 1917, he devoted himself to his medicine, family and vineyard and purchased another vineyard, established this time, in Mudgee - "Augustines", where he made sweet wines.

In 1926 he retired from medicine and continued to run his vineyards and the Spring Street cellars. He was president of the Australian Wine Producers Association of New South Wales from 1902 to 1927 and a Councillor of the Royal Agricultural Society of New South Wales.

He stated "The temperate use of wine is a valuable support to healthy man in his thorny path of life" (23). In April 1927 Dr Fiaschi slept on the autumn cold winery floor, developed pneumonia and died in Sydney on the 17th April 1927.

The Fiaschi family ran the Tizzana and St Augustines vineyards as well as the Spring Street cellars until the late 1940's. Vandals burned down the Tizzana cellars in 1955.

Today Tizzana has been re-established by Peter Auld, who has rebuilt the cellars and replanted 5 acres of the original vineyard, mainly with Cabernet Sauvignon and Shiraz. Experimental plantings of Chardonnay, Cabernet Franc and Muscat have also been made to gauge their potential.

DR JAMES MITCHELL OF “STOCKTON”

Dr James Mitchell, father of David Scott Mitchell, who donated his vast book collection and enough money to establish the historic Mitchell Library in Sydney, was born in 1792 in Fife, Scotland. He was fourth son of farmer David Mitchell. After a local education, James Mitchell pursued his medical career through the army. He joined the Army Medical Corps in 1810 and gained his medical qualifications as a licentiate of the Royal College of Surgeons, Edinburgh in 1813. Mitchell saw active service in Spain during the Napoleonic wars and was stationed at the British Military Hospital in Brussels during the Battle of Waterloo in 1815. He also saw service in the Netherlands and at the Battle of New Orleans in the American War, when Britain tried to recapture its lost colonies.

In 1817, Mitchell made his first voyage to New South Wales as surgeon to the 48th Regiment, then in 1820 as the surgeon superintendent of the “Neptune” and finally in November 1821 he arrived in Sydney on the “John Barry” as the assistant surgeon of the 48th Regiment. In June 1823, Dr Mitchell transferred from the Military Medical Corps to become a civilian doctor in the Colonial Medical Department as assistant surgeon and began work at Sydney Hospital. On the 1st January 1829 he was officially posted as a full surgeon at Sydney Hospital.

In 1833 Mitchell officially resigned from the army and commenced private practice at Cumberland Place, as well as working at Sydney Hospital. Also in 1833, Dr Mitchell married Miss Augusta Maria Scott at St James Church, Sydney on the 22nd August 1833. This made Mitchell a member of the landed Scott family, who had much property

in the Hunter Valley region. In 1836 and 1837, Mitchell ran into trouble with John Vaughan Thompson, the newly appointed deputy inspector-general of hospitals. Conflict occurred over Thompson's petty orders and interference in Colonial Surgeons' routines on the one hand and Mitchell's disobedience and refusal to attend floggings on the other. Inquiries occurred and Mitchell's name was removed from the list of Colonial Surgeons, but after appeal, Mitchell was more graciously allowed to resign.

After this episode, Mitchell concentrated on his extensive private medical practice and dealing in land for leasing and agriculture. In 1822 he was given his first land grant, 2000 acres at Burraborang in the Camden District, where he became friendly with the MacArthurs, who advised him about agriculture. Over the following years he acquired much more land, mainly in the Hunter Valley and around Newcastle, by grant and purchase. These new holdings included the Burwood Estate in Newcastle and the Rothbury Estate further up the Hunter River. Mitchell also diversified his interests by industrialising and trying new forms of agriculture.

He was a founder of the Sydney Gas Company and the AMP Society. he tried Saltworks at Stockton in 1838, which failed. A tweed factory was built between 1840 and 1843. He leased the factory to two men who brought workmen out from Scotland to man the new cloth making machinery. On the 11th July 1851, an arsonist burnt the factory down and Mitchell lost £26,000.

W.J. Goola, in his paper on Mitchell written in 1950, states:

“Dr Mitchell had a few acres cleared near the factory and in the early forties (1840’s) he had two Germans employed there cultivating vines, with the intention of establishing a large vineyard – but it did not prove a success and was soon abandoned”.

Despite losing money through the failure of the Bank of Australia when it ceased operation in 1843, Mitchell continued to invest in local industry and services. He invested in the Hunter River Steam Navigation Company, built a smelting works in 1846 on his Burwood Estate using coal also from the estate. In 1853 he established the Newcastle Coal and Copper Company.

On the 1st February 1869, at the age of 77 years, Dr James Mitchell died at his home Cumberland Place in Sydney, leaving an estate comprising over 4500 acres of land, mainly in the Hunter region and £10,279 cash. This large estate was divided up between Mitchell’s three children – Augusta Maria Mitchell born on the 9th August 1834 and Margaret Scott Mitchell born on the 4th June 1840, who became Mrs Quigley. The daughters inherited the Newcastle land of the Burwood Estate, Stockton and Teralba. David Scott Mitchell inherited the rest and let Mr E C Merewether (his brother-in-law) manage it for him so that he could pursue his main interest in collecting books using his newly acquired regular income.

DR WILLIAM BELL CARLYLE OF “HAMILTON”

William Bell Carlyle was born at Satur, Scotland in 1788. After training as a doctor he made six trips to Australia as the Royal Navy Surgeon of convict ships. The fact that

only 7 convicts died from the 998 under his care during these voyages is testimony to his great surgical skills.

His six voyages are summarised thus:

Ship “Asia” arrived NSW on 28.12.1820

“Henry” arrived Van Diemen’s Land on 8.3.1825 and NSW on 27.2.1825

“Andromeda” arrived Van Diemen’s Land on 23.2.1827

“Phoenix” arrived NSW on 14.7.1828

“Marquis of Huntley” arrived NSW on 21.8.1830

During this decade of voyaging out to Australia, Dr Carlyle saw the advantages of owning land in the new colony and as such, acquired as much of it as he could. He obtained 1000 acres in the District of Hill, County of Camden by warrant from Sir Thomas Brisbane, this time a 2000 acre property he called “Satur” near Scone in the Hunter Valley. In 1835 he bought 1070 acres at Piper’s creek.

Finally he moved to Port Macquarie, where he was to remain until his death in 1844. On the 29th October 1838, he bought 49 acres of the original Government Farm called the Old Settlement Farm from W M Clark. On the 10th December 1838 he purchased the adjoining 42 acre and 49 acre blocks from J J Hughes. This property he called “Hamilton” after the maiden name of a close friend, Mr John Stephens, and it was here that he established his vineyard. It must have been an extensive establishment, because at the time of the 1841 census, it was employing 9 gardeners and stockmen, 7 domestic servants and 7 others.

The local Government Surveyor was Mr Clement Hodgkinson. Between 1840 and 1842 he wrote a book called "Australia, from Port Macquarie to Moreton Bay". In this book he mentions Dr Carlyle's vineyard, which must have been the first organised vineyard in the district:

"Having passed at the back of Dr Carlyle's vineyards, I arrived at port Macquarie about one o'clock. After refreshment and given my horse a feed of corn, I continued to the beautiful residence of Major Innes".

Elsewhere he writes "Dr Carlyle has a vineyard near the town of Port Macquarie on an alluvial sandy flat and although a situation such as that is not in general favourable for vines, he has nevertheless made some very good wine" (24). Later, many vineyards flourished in the district. Today the Cassergrain family have re-established the Port Macquarie vineyards with their extensive vineyard west of the township.

A description of the house is given in "Annabella Boswell's Journal": "The house has a deep verandah and a wide passage through it. It is situated on the bank of the River Hastings at Blackman's Point and being so close to the sea, the water is brackish and rises and falls with the tide. There is a fine vineyard with a good variety of grapes. one kind was very large and tasted rather like a passion fruit" (25).

Dr Carlyle was a bachelor and died suddenly at the age of 56 on Thursday the 5th September 1844. He was buried in the garden at "Hamilton" on the following Saturday.

The Sydney Morning Herald wrote:

“In the discharge of his public duties Dr Carlyle had ranked for years as one of the first magistrates of the Commission and in private life he bore an inestimable character. The inhabitants of Port Macquarie, where he has resided for the last ten or twelve years, have entered into a subscription for a marble slab, which they propose to erect to his memory in St Thomas’ Church” (26).

DR JOHN DOBIE OF ‘RAMORNIE’ and ‘STRATHEDEN’

John Dobie was born in England in 1794. He entered the Royal Navy on the 19th October 1813 as an Assistant Surgeon on board the “Montagu” of 74 guns under Captain Peter Heywood, stationed in the Mediterranean. In 1817 he was on board the survey ship the “Shamrock” and in 1819 he served on board the “Leander” of 60 guns in the East Indies. On the 14th August 1820 he was promoted to the rank of Surgeon and continued to serve on the “Leander” until 1822. In July 1824, he sailed as Surgeon on board the convict ship “Princess Charlotte” from England, arriving in Hobart Town in November without losing a single convict – evidence of his good medical ability. In 1825 he served on the “Warspite” of 76 guns on the South American station; in 1826 on the “Boadicea” of 46 guns and 1827 on the “Jewa” of 52 guns in the East Indies again. His last naval ship was the “Madagascar” in 1828 on the Mediterranean station. He served on board her until December 1831.

After this extensive naval career, Dr Dobie again became surgeon on board a convict transport ship, this time the “Lady Nugent”, arriving at Hobart in November 1836, again with no deaths among his 286 charges. In 1837, under Governor Bourke’s orders,

he recruited 272 free settlers for New South Wales and was surgeon on board the “Duncan”, which brought them out.

On the 11th December 1838, Governor Sir George Gipps appointed Dr Dobie as the first Health Officer to the Port of Sydney at a salary of £300 a year. Sydney, by this time, had developed into a large seaport and required a medical officer of considerable naval experience to supervise quarantine of infected ships at the north Head Quarantine station, which had opened in 1832. Dr Dobie held this post for eleven months, resigning on the 5th November 1839 to take up grazing in the colony.

His first grant of land was in the Cassilis district, but in 1840 he led an expedition into the unsettled Clarence River valley on the north coast of New South Wales, taking up Ramornie station in June 1840. Later he took up Stratheden station in the Richmond River valley in 1842.

With his naval career behind him (he was placed on the reserve list in 1854), Dr Dobie pursued a pastoral career as well as becoming involved in the administration of the colony. In 1840 he was made a Magistrate, in 1844 he was appointed to the Commission of the Peace and made a member of the New South Wales Medical Board (a position he held until 1864). From 1851 to 1855 he was a Member of the Legislative Council, serving on eight select committees during this time, including one to inquire into the Quarantine laws. He also was a member of several organisations to promote the Clarence River district.

During his quarter of a century occupation of his Clarence River properties, Dr Dobie engaged in viticulture like many of his neighbours, including the Ogilvies of “Yulgilbar” station. Most of the wine thus made was in small quantities for home consumption. In his history of the Ogilvie family called “Squatter’s Castle”, George Farwell says “Ogilvie had a large vintage and borrowed some casks from Dr Dobie” (27).

After 1864, Dr Dobie sold all his properties and with no family ties keeping him in Australia (he was a bachelor), Dr Dobie returned to England where he died on the 17th July 1866.

DR H J LINDEMAN OF “CAWARRA”

Dr Henry John Lindeman was a graduate of the famous medical school of St Bartholomew’s, London, who established a modest vineyard near Gresford in the Upper Hunter Valley, known as “Cawarra”, which from humble beginnings, formed the basis of what was to become one of the largest and most prestigious wine companies in Australia.

He was a leading advocate for the sensible use of wine as Australia’s national beverage, as well as its use, because of its medicinal virtues. The son of a medical practitioner and grandson of a clergyman of the Church of England, he was born at Egham near Windsor, west of London, on the 21st September 1811.

He spent his early life in Hyth, now an outer suburb of Southampton on the south coast of Britain, where his father and grandfather practiced their respective professions.

It was at the tender age of 14 years – on the 12th February 1825, that Henry John Lindeman was apprenticed to his father, Dr John William Lindeman, to learn the “art” of medicine, for a period of 5 years. At that time it was customary for intending students of medicine to be indentured or apprenticed to a senior ‘mentor’ doctor to learn the basic skills before being accepted by a teaching hospital to complete their training.

Between 1830 and 1834, Dr Henry John Lindeman trained at St Bartholomew’s – a hospital which was founded in 1123 and which is the only one of the medieval hospitals of London still occupying its original site. As it is now, it was then considered one of the most prestigious teaching hospitals and it was a great honour for Dr H J Lindeman to be accepted there as a student, to formalise his training.

One of his contemporaries was the famous surgeon and diagnostician, James Paget, who was to later describe Paget’s Disease of the bone. Following his graduation in 1834, Dr Lindeman was made a member of the Royal College of Surgeons and practiced medicine at Southampton. Between 1834 and 1840, when he sailed for Australia, it is believed that Dr H J Lindeman toured France and Germany and whilst touring these wine producing countries, he gained his knowledge and love of viticulture and wine making, which was no doubt further augmented on the voyage to Australia when the ship “Theresa” carrying the Lindemans (he as a ship’s surgeon) called at Madeira and Capetown.

On the 11th February 1840, just after she celebrated her 18th birthday, Dr Henry John Lindeman had married Eliza Harriet Bramhall at Southampton and a little over a month later, on the 24th March 1840, they sailed for Australia on the 494 ton barque, “Theresa”.

Australia must have appeared as a land of limitless new opportunity to the young couple. However, upon arrival in Sydney on the 18th August 1840, finding the situation unfavourable, they moved to Gresford on the Paterson River early in 1841, where Dr Lindeman established a medical practice.

Their first child, Harriet Jane was born there on the 1st October 1841. With his practice established and a growing family, Dr Henry John Lindeman looked for land to buy.

In 1836, George Townshend of Trevallyn was granted land on the Paterson River, where he eventually possessed large tracts along the river, but the drought and subsequent depression of the 1840’s compelled him to dispense of some 4500 acres at auction.

Dr Henry John Lindeman purchased six blocks totalling 816 acres at the auction on the 12th January 1842 and the property was named “Cawarra”, which was a local Aboriginal term translating as “by running water”. It was here that Dr Lindeman built a slab cottage for his family and set about establishing his vineyard “Cawarra” in 1843. He selected the rich alluvial flats on the north western side of the Paterson River to plant Riesling, Verdelho and Shiraz vines and gradually the vineyard was expanded until it covered 40 acres.

Dr Lindeman's practice expanded as did his vineyards as he purchased two smaller vineyards nearby – "Brinkburne" across the Paterson River to the north west of "Cawarra" and "Talga" towards Peshurst. His stringent policy was never to sell any wine until it had properly matured and he had built a large slab storage cellar full of casks of maturing wine.

This policy has been endorsed and observed by the Lindeman Wine Company, with its range of "Classic Series" of matured wines available today, believing in the quality of wine before quantity.

Following the fire at "Cawarra" in 1851, Dr Lindeman built a winery of stone to store his maturing wines and sections of this building are still visible today.

By 1861 Dr Lindeman was working with John Wyndham at his "Dalwood" vineyard and together they engaged an agent – Mr John Lankaster, to market their production. However, by 1870, Dr Lindeman's production had outstripped Mr Lankaster's facilities and he established his own cellars and bottling complex at the Exchange Cellars in Pitt Street, Sydney.

Dr Lindeman's marriage with Eliza Bramhall had produced 10 children, 5 sons and 5 daughters. By 1879, Dr Lindeman was ageing and his sons were old enough to accept some of the responsibility of running the winery and he placed three of his five sons into the business – Charles Frederick, Arthur Henry and Herbert William. Of course, the other sons, Sidney and Henry John had a financial interest in their father's business.

On the 23rd May 1881, Dr Henry John Lindeman died, and he was buried in the cemetery at St Anne's Anglican Church, Gresford.

The three sons maintained the business with Charles Frederick the Manager, Arthur Henry the Winemaker and Herbert William the Taster. They traded as H J Lindeman and Company.

Dr Lindeman's thoughts on wine as a medicine are included in the appendix.

DR ROBERT PARK OF "LEWINSBROOK"

Alexander park was a Scot who arrived in Sydney on board the "Prince Regent" in 1826. Fellow passengers on board this ship included George Townshend, who was later to establish a property called "Trevallyn" and Charles Boydell, who would establish "Cam-Yr-Allyn".. With Alexander Park establishing "Lewinsbrook" from a 2560 acre grant on the 3rd November 1826, these three men were the first three large landowners in the Gresford area of the Hunter Valley. Lewinsbrook was situated on Lewin's Brook on Park's Creek, which was a branch of the Allyn River.

In 1837 Alexander Park's brother, Dr Robert Park, came to Australia also. He served as a doctor in the district until the 1st January 1863. Dr Park was a close friend of Dr Lindeman and two Park children and two Lindeman children eventually married each other. Dr Park also tended to Dr Lindeman and signed his death certificate in 1881.

By 1840 Alexander Park was in financial troubles, along with many others during the 1840's depression. Lewinsbrook was put up for sale, but no one bought the place. According to the sales advertisement in the "Australian" dated the 10th June 1841, a vineyard was "in full perfection". In 1853 Alexander Park was elected to the old legislative Council, a position he held on and off until 1873. During this time, Dr Robert Park joined the Hunter River Vineyard Association. When Alexander Park died in July 1873, he was unmarried with no children to succeed him, so Dr Robert Park inherited Lewinsbrook and its vineyard, which was the second largest vineyard in the area, with 30 acres planted.

On the 30th April 1861, Dr Robert Park married Henriette Mary Boydell (daughter of Mr Charles Boydell mentioned earlier). Dr Park not only was a medical practitioner, but also Warden of the District Council and a senior Magistrate of the Bench due to a lack of professional people able to do the job in a non-biased way.

Dr Park died at his residence at Lewinsbrook and was buried at the Gresford Church of England cemetery on Sunday the 15th April 1888.

The Lewinsbrook vineyard has the rows 5ft apart and vines planted 4ft apart on individual stakes to allow cross ploughing. Grape varieties planted included Shiraz, Semillon (called "Shepherd's Riesling"), Black Mamburg and Lambriscat. Some of the wine was branded for "Gentlemen Drinkers".

DR CHARLES GABRIEL

Enoch William Rudder founded the town of Kempsey on the Macleay in northern New South Wales. The Rudders had a large family and developed their property in the Macleay Valley. The valley produced mainly maize, with sugarcane, cattle, horses, pigs and sheep. To quote Marie Moses' book "Valley of Macleay" ... "Some wine was also being produced locally, notably by members of the Rudder family" (28). The grape vines of Enoch William Rudder were planted on the hill where their house was built after they arrived in 1836, overlooking the river.

Enoch William Rudder's son, Enoch, also planted a vineyard, but his was at Euroke, further upstream from Kempsey.

Rhoda Emma Rudder was the sixth child of Enoch William Rudder. She married Dr Charles Louis Gabriel. By 1873 they had eight children.

The following extract comes from Patricia Rigg's history of Kempsey Hospital called "Century of Caring":

"The first two doctors at Kempsey Hospital in 1876 were Dr Gabriel and Dr George Gildea. Neither Dr Gabriel nor Dr Gildea was registered to practice in New South Wales. There is no record of Dr Gildea's qualifications, but Dr Gabriel had some period of formal training. A native of Martinique (French West Indies) he was apprenticed to Dr L'Estrange for three years, attended the Hospital Fort Royal for two years, went to Montpellier (France) to complete his study but was compelled to relinquish it for lack

of means. He became a surgeon aboard a French whaler but left the ship at Akatoa (New Zealand). From there he went to the South Sea Island where he practised for three years under the auspices of the French Catholic Mission. He came to New South Wales and practised medicine here for 36 years” (29).

Dr Gabriel attended at his mother-in-law, Emma’s, death in 1883 and his father-in-law, Enoch’s, death in 1888.

I have not been able to confirm whether Dr Gabriel made wine, because most of Enoch William Rudder’s papers were lost when his home was destroyed circa 1885. It is possible that he did make wine, given the fact that he was French, a doctor who no doubt used wine as a medicine and he married into a large family well established in the district with vineyards of their own, so I include him for the sake of thoroughness.

DR LOUIS SEGAL OF “BEAULIEU”

Dr Louis Segal was born in France in 1833. After his medical training he served as a surgeon in the Crimean War. In 1871 he was the doctor at Narrabri and from 1875-1885 was the doctor at Inverell. During this period in Inverell he established his vineyard “Beaulieu” (French word meaning “beautiful place” and named after his father’s house in France). The wine industry of Inverell was established in 1849 when George Wyndham’s sons Alex and Charlie brought a number of vine cuttings from George Wyndham’s Hunter River vineyard “Dalwood” (established in 1830) to George Wyndham’s Inverell property “Bukkulla”, which he had taken up in 1839.

“Beaulieu” was a 220 acre property consisting of red soil fronting onto Gum Flat Road. Twenty-five acres was planted with vines and Dr Segal used a Swiss gentleman, Mr A Clottu, as cellarman.

Dr Segal’s first wife died in 1881 and his young second wife died in 1884. Segal, shattered by the deaths of two young wives in three years, went to Emmaville in 1885.

“Beaulieu” was bought by Dr Segal’s close associate Mr Joel Barnett, the local chemist and Mr Joseph Moore, a local building contractor. They planted an additional 10 acres of vines. Dr Segal died in Inverell in 1898 after an overseas trip.

The wine industry of Inverell declined between World War I and World War II, hit by the depression and the decline in the popularity of wine during this period eventually to cease during World War II.

DR READ OF “KELSO VINEYARD”

Dr Richard Read was born in Dublin, Ireland, in 1849. When he was 14 he came to live in Victoria, Australia, spending 5 years on a station before returning to Dublin to study medicine. He studied at Queen’s University and spent two years at Trinity College. In 1872 he gained his M.D., M.Ch., Queen’s University, Ireland, with L.M. Dublin. After graduating in 1872, Dr Read came to Newcastle, New South Wales, where he practised for 4 years with his brother-in-law, Dr S T Knaggs. He then moved to Singleton where he practised until his retirement from practising medicine in 1898, when he moved to Sydney and became a member of the Board of Management at the Royal Alexandra

Hospital for Children. Dr Read died at Wahroonga Sydney, on the 5th May 1920 and was survived by his wife and five sons, the eldest of whom is Dr W H Read, also of Wahroonga. The other four sons were all graziers.

Whilst at Singleton, Dr Read pursued many interests. He was greatly involved in the local choral and operatic societies because of his fine voice. He was President of the School of Arts. In 1881 Dr Read, along with others, opened up the Rix's Creek Colliery and in 1893 they purchased the Great Cobar Copper Mining Company. Dr Read was the Honorary Surgeon to the Benevolent Asylum and other local friendly societies, as well as being the local Government Medical Officer and Vaccinator. On the death of Dr Henry Glennie on the 15th August 1880, Dr Read was appointed Medical Officer at the Singleton Hospital.

Also during his stay in Singleton, Dr Read developed the Kelso vineyard. It was located on the southern outskirts of Singleton and is now included in the town. On Saturday the 20th July 1907, the vineyard was auctioned under instructions from Dr Read. An advertisement for the auction in the "Singleton Argus" details the statistics of Dr Read's vineyard. The Kelso vineyard comprised "an area of 43 acres 1 rood 27 perches (more or less) adjoining the G.N. Railway; 25¹/₂ acres of Vines, planted in 1889-90 and in full bearing; 7 acres of Cultivation with Fruit Trees; the balance being grazing land. Good brick Dwelling House and Outbuildings, Wine Cellar (Hardwood) 62ft x 56ft with large leanto attached; Tower 18ft x 18ft; and the following Casks in good order:- 6 Casks, 1040 galls.; 9 Casks 500 galls.; 8 Casks 400 galls.; 4 Casks 300 galls.; 2 Casks 220 galls.; 3 Casks 120 galls.; 10 Casks 60 galls.; 3 Casks 80 galls.; 5 Casks 10 galls. each; 2 Wine Presses good order; 1 Still (complete) for distilling wine. The following

quantities of Wines in stock (approximately):- Port, 1850 galls.; Sherry, 470 galls.; Claret, 60 galls.; Hock, 820 galls.

This magnificent property must eventually prove a splendid investment for an energetic man, in view of the fact that there is an early prospect of an extensive vineyard and distillery company being formed on the Hunter, and the property is considered to be an ideal place for a depot for maturing wines etc., the appliance also for such a purpose being complete and up-to-date.

DR THOMAS HENRY OF CLARENCE RIVER VALLEY

Dr Thomas James Henry was born at Brickfield Hill, Sydney. His father was James Henry, an Irish migrant who ran a well-known chemist shop in Sydney. James Henry was a well respected, strict Methodist, who married twice and had a large family. He was a foundation member of the Deaf and Dumb and Blind Institution and was often consulted in his shop by people like Sir Henry Parkes for his opinion.

Dr Thomas Henry was educated at the Cleveland Street Public School and used to work in his father's chemist shop after school. In the early 1880's he attended Edinburgh University Medical School. Two of Dr Thomas Henry's brothers, Edward and Arthur, later qualified as doctors also. Whilst at Edinburgh University, Dr Henry began to show his flair for literature and writing. He later became one of the best Shakespearian scholars in Australia and was fluent in Latin, Greek, Italian, Spanish, French and German. When he later was a doctor at Grafton in northern New South Wales, he had many German patients. These German settlers had come out to Australia to be vine

dressers for the various vineyards in Australia and in particular for the vineyards of the northern rivers of New South Wales (the Macleay and the Clarence Rivers). In order to learn German he used to translate a chapter of the Bible from German into English each morning before breakfast, learning the pronunciation from his patients.

In 1881 Dr Henry wrote “The Awful and Ethical Allegory of Deuteronomy Smith – The Life History of a Medical Student. By a Student of Medicine with many Realistic Sketches by the Author”. The book was a humorous account of medical student life at Edinburgh University. In 1897 he wrote “Clause Garton – a Story of Durburgh University” to satisfy the publisher’s demands for another book. It ran for several editions. Dr Henry gained his L.F.P.S. Glasgow 1886, L.R.C.P. & L.R.C.S. Edinburgh 1886 and later his F.R.C.S.E. during this period.

By 1888 Dr Henry had returned to Australia and started practice at Warialda, after a residency at Sydney Hospital. In 1895 he came to Grafton after buying the practice of Dr Taylor Young. Dr Henry continued to practice medicine in Grafton until he retired in 1920 at the age of 60. During this period he was the Government Medical Officer for Grafton Hospital and in 1915, as Captain Henry of the Australian Army Medical Corps, served at the Australian Base Hospital at Helopolis in the Greek Islands, where many seriously wounded soldiers from Gallipoli were treated.

According to his son Goya, who was one of Australia’s early aviators, Dr Henry was a very cultured person who developed a vineyard along the Clarence River during his 25 year period of practice in Grafton. No doubt he called upon the expertise of his German vine dressing patients.

After his retirement he moved to Manly to live. An old medical friend asked him to deputise for him as a ship's doctor one day after he was settled in at Manly and so began the last phase of his full and varied life. He made seventeen trips to Canada and USA, six to the East and many to England, Perth and the South Sea islands as a ship's doctor.

On the 17th October 1940 Dr Thomas James Henry "The Country Medico", "The Walking Encyclopaedia" died.

DR LANCE ALLEN OF "TAMBURLAINE"

Lance Allen was born in Sydney in 1912. Initially training as a pharmacist, he later did medicine at Sydney University in 1953 and became a GP at Cessnock. After Dr Max lake of "Lake's Folly" and Jim Roberts of Belbourie, Lance Allen's was the third new vineyard established in the Hunter this century. In 1966, he bought 77 acres in Pokolbin and established "Tamburlaine", primarily to provide for retirement and / or illness leading to disability. In 1972 an extra 93 acres was purchased nearby at Rothbury Ridge.

Plantings finally were Shiraz 10 acres, Cabernet Sauvignon 6 acres, Semillon 12 acres, Chardonnay 3 acres, divided between the two properties. The winery was built in 1972 – a series of steel sheds based around a tractor shed developed as the demand expanded.

Dr Allen has had no formal oenological training, but has been helped by Murray Tyrrell and followed the old traditionalist methods of wine making using open concrete fermenting vats and hand plunging of the cap.

In 1987 Dr Allen retired to Soldiers Point in the Port Stephens area and sold Tamburlaine to a consortium, which included several local and Newcastle doctors.

DR BARRY BRACKEN OF “RICHMOND ESTATE”

Dr Barry Bracken graduated from Sydney University in 1954 and trained in England to become an orthopaedic surgeon, gaining his F.R.C.S. Edin. in 1959 and F.R.A.C.S. in 1962.

Now Dr Barry Braken is an orthopaedic surgeon at Royal North Shore Hospital and bought 25 hectares of grazing land in North Richmond in 1967. In 1968 he planted 6 acres of grafted vines (because Sydney is a phylloxera area). Over the next 3 years, all attempts at establishing the vineyard failed using grafted vine stock due to a virulent soil fungus. In 1971 he then planted direct producer vines and took the risk with phylloxera under the management of Mick Lesnik.

Eventually 22 acres of vineyard were planted, mainly Cabernet Sauvignon and Shiraz, with some Merlot and Malbec. Experiments with Chardonnay failed. There was also 5 acres of Black Muscat table grapes producing annual crush of 30 tonne.

Wine produced by Richmond Estate has been of very high quality using the different blends of reds. The winery was originally the farm house, which had been built around an old dairy. This house has gradually been converted and extended to become the winery. In 1984 Dr Bracken sold out to Tom Allen and his son, with Mick Lesnick staying on as manager/wine maker. Unfortunately, Mr Allen let the property run down and eventually sold to Tony Radanovic in 1987. Tony Radanovic comes from a wine making background in the area of Yugoslavia bordering Hungary and came to Australia when aged 16. He tended the vines for the next 3 years to bring them back up to the standard once maintained by Dr Bracken before making any wine, so that the high standards of Richmond Estate set by Dr Bracken were again met.

Original wine labels used by Dr Bracken show a Blue Wheel, because the vineyard was originally the Blue Wheel Dairy Farm.

The vineyard is now used as the field laboratory of the University of Western Sydney's Wine School.

DR DAVID DIXON OF "TERRACE VALE"

Dr David Dixon was born in Sydney in 1936. He graduated from Sydney University in 1962 and became a GP on Sydney's north shore. Dr Dixon is a partner in the Terrace Vale vineyard, along with some lawyers and accountants, who were stimulated by Murray Tyrell to establish Terrace Vale – named after Terrace Mountain several miles to the east. Murray's son, Bruce, is a member of the Syndicate at Terrace Vale and Tyrells buys approximately 50% of the fruit each vintage.

Terrace Vale was established in 1971, when 165 acres was purchased at Deaseys Road, Polkolbin. Thirty acres of Shiraz and 23 acres of Semillon were planted in 1972; 10 acres of Cabernet Sauvignon and 12 acres of Chardonnay, 10 acres of Traminer, 2 acres of Sauvignon Blanc and 7 acres of Pinot Noir in 1973 and in 1987, 1 acre of Merlot for blending.

The winery was built in 1976 on the vineyard and has a capacity of 140 tonnes, producing roughly 5000 cases of red and 5000 cases of dry whites. The wine maker is Alain le Prince from the Loire region of France.

Terrace Vale is now owned by Mr Batchelor, former CEO of AMP.

DR JOHN FARRELL OF “FARRELLS”

Dr John C Farrell was born in Farrell Street, Kings Cross, Sydney in 1927. He graduated M.B.B.S. from Sydney University in 1952, then pursued a career as an Endocrinologist, gaining his M.R.C.P. in 1957, his M.R.A.C.P. in 1958, his F.R.A.C. in 1971 and finally his F.R.C.P. London in 1978. Now Dr Farrell is an endocrinologist at St Vincent’s Hospital, Darlinghurst, and also practises at Auburn and Concord.

Whilst working overseas, Dr Farrell developed an interest in wine, which grew deeper upon his return to Australia. The next logical step was the purchase of 50 acres on Mount View road at Mount View, in the lower Hunter Valley, near the established vineyard area at Pokolbin, in 1981. Dr Farrell completed the Wagga College

Correspondence Course on Viticulture whilst establishing his vineyard, which now consists of Semillon 2 acres, Sauvignon Blanc 2 acres, Chardonnay 5 acres, Pinot Noir 1.5 acres, Merlot 1.5 acres, Cabernet Sauvignon 1.5 acres, Verdelho 1 acre, Cabernet Franc 1 acre and Shiraz 2 acres.

Dr Farrell's vineyard doesn't have a winery, but supplies local wine makers with grapes and is now run by Dr Farrell's children.

DR SUE HANCKEL OF "CAMDEN BRIDGE FARM"

Martin Thurn was one of the five vine dressers brought to New South Wales by James and William McArthur from Nassau, Germany, in 1852. After he had completed his indentured period at Camden Park, he established his own vineyard across the Nepean River from "Camden Park".

This property is now owned by Mr Norman Hanckel and his daughter, Dr Sue Hanckel. In 1979 Dr Sue Hanckel graduated M.B.B.S. from the University of New South Wales. Thurn's original colonial house is still used as a family residence.

Mr Norman Hanckel graduated from "Roseworthy" College in 1947 and has had vast experience in the Australian wine industry, working at "Yalumba" and is noted for establishing "Hungerford Hill" in the lower Hunter Valley.

In 1975 Norman re-established a vineyard on Thurn's former land, selling the grape production to "Hungerford Hill". Since 1980 he has produced his own wine with

assistance of Sue. Today 38 acres produce 180 tonnes per annum – 75% Chardonnay and 25% equal parts Cabernet Sauvignon, Trebbiano and Traminer.

Now the grapes are sold to the Evans Wine Company, who make the wine under the Camden Park label.

DR RAY HEALY OF “AUGUSTINE”

Dr Raymond J Healey was born in Sydney in 1930. After graduating M.B.B.S. from Sydney University in 1954 he did his residency at St Vincent’s Hospital and studied to be a surgeon, gaining his M.R.A.C.R. in 1958, F.R.C.S. Eng. 1959, F.R.C.R. 1961 and F.R.A.C.S. in 1964.

Dr Healy’s interest in owning a vineyard began with his wine judging in the early 1970’s. Now Dr Healey is a noted National Wine Judge (along with Dr Max Lake).

From 1970 to 1973 Dr Healey was part of a syndicate that owned half of Craigmoor, the oldest vineyard in the Mudgee district, having been established in 1858 by Adam Roth, a German immigrant.

In 1971 this syndicate also established the Settler’s Creek vineyard in the Mudgee district. Three other doctors were involved with the syndicate at this stage. They were Dr James Smith, a surgeon, Dr Joe Ross, an anaesthetist and Dr David Smith, a Mudgee GP.

A new syndicate was formed to buy a share of the rundown Augustine Vineyard in 1982. Dr Healey, a pharmacist and two accountants bought into the vineyard and in 1988 they bought out the other share to gain total control. The Augustine vineyard was established in 1918 by Dr Thomas Fiaschi upon his return from medical duties in World War I. (Dr Fiaschi is discussed in detail in the section dealing with his Tizzana vineyard). Dr Fiaschi died in 1927 and his family continued to manage the property until it was abandoned in the mid 1940's. In 1969 Peter and Ken Spencer, with the financial backing (as a silent partner) of Sydney ophthalmologist Dr Peter Rogers, acquired the property and began to re-establish the vineyard. The only vines surviving in 1969 from Dr Fiaschi's original vineyard were the Aleatico vines. Aleatico is a black grape from Italy, which makes a desert wine or a Rose if the juice is not left in contact with the skin for long. The variety is grown on the island of Elba, where Napoleon was banished and became one of his favourites. These vines brought out to Australia from Italy by Dr Fiaschi are unique in Australia. No other vineyard in Australia has this variety.

Augustine, under the Spencers' control, did not flourish and it is only now doing so under the management of Dr Healey's syndicate. The combined Augustine and Settler's Creek properties total 200 acres with Chardonnay, Cabernet Sauvignon, Semillon, Pinot Noir, Traminer and Merlot varieties being grown. Most of the vintage is sold to wine makers in the district, whilst the rest is made into wine at the winery at Augustine for cellar door sales, mail order sales and for the vineyard restaurant also on the property.

Augustine later became a Rothbury Estate label.

DR IAN HENDRY OF “AFFLECK VINEYARD”

Dr Ian Hendry was born in New South Wales in 1944 and graduated from Sydney University B.Sc.(Med) 1966 and M.B.B.S. 1969. He later studied at Cambridge, gaining his PhD in 1973.

In 1975 he and his wife, Susan, bought 40 acres at Bungendore outside Canberra and planted 7 acres of grape vines – one acre each of Rhine Riesling, Chardonnay, Pinot Noir, Cabernet Sauvignon, Semillon, Shiraz and Sauvignon Blanc.

The winery was built in 1985 under their house. They called the vineyard “Affleck” after the Hendry property at Huntley in Scotland from whence came Ian’s ancestors. Affleck means “stoney ground” in Gaelic.

Ian has had no formal training in viticulture or oenology, but is greatly helped by his medical and biochemical training. He has many other academic doctor friends who are also making wine in the Canberra / Lake George area.

DR TED JACKSON et al OF “AMBERTON”

Amberton Wines was begun in 1975 when a 310 acre property was purchased on Henry Lawson Drive at Mudgee by Manuel Damien and a group of Radiologists from Randwick, who frequented Damien’s restaurant “The Little Snail”. The doctors were Ted Jackson, Bill Vautin, Colin Franklin and Peter Kitchener.

Dr Edward Ashley Jackson graduated from Dublin University in 1948 and later gained his DDR (Sydney) 1958, M.R.A.C.R. in 1959 and F.R.A.C.R. in 1975.

Dr William Robert Vautin graduated from Sydney University in 1946 and gained his DDR in 1959, M.R.A.C.R. in 1959.

Dr Peter Norman Kitchener graduated from Sydney University in 1966 and became a M.R.A.C.R. in 1970.

Dr Colin Frederick Franklin graduated from Sydney University in 1967, gained his D.Obst. Auckland in 1969 and his M.R.A.C.R. in 1973.

These doctors worked in a group Radiology practice in Randwick and also visited Mudgee District Hospital weekly, hence visited the winery regularly and knew the district well.

Fifty-seven acres of vines have been planted between 1975 and 1987 in the following proportions – Cabernet Sauvignon 20%, Shiraz 20%, Traminer 10%, Rhine Riesling 5%, Chardonnay 15%, Sauvignon 10% and Semillon 20%.

The wine maker was John Rozentals, who graduated from the Riverina College of Advanced Education in 1979 with a Bachelor of Applied Science (Wine Science) degree and the College Medal.

The winery was built in 1980 with a capacity of 300 tonnes and it produced about 10,000 cases in the same proportion as the grapes.

In 1984 Dr Bill Vautin died and the remaining partners' ambition to have a profitable winery was not achieved, so Amberton Wines was sold to Montrose Wines on the 30th June 1987.

DR MAX LAKE OF "LAKES FOLLY"

Dr Max Lake is one of those rare "larger than life" figures who enhance the wine industry during their time. Not only did he have the drive and determination to establish the first new family-owned small vineyard in the lower Hunter Valley in the 20th Century, thus beginning the recent new wave of small boutique wineries in Australia, but he planted Cabernet Sauvignon as well – unthinkable, according to the "locals". However, fortunately for us, Dr Lake stuck to his principles to produce great Hunter reds after being very impressed by a 1930 Dalwood Cabernet Sauvignon, which he had tasted in 1960. This inspired him to sample soils from all over the lower Hunter Valley to find the right area to establish his vineyard. Finally he decided to buy land on the south eastern side of a hill on the Broke Road at Pokolbin, near the Cessnock airport. This land was a combination of volcanic hill and alluvial creek flats.

The following history lists the subsequent developments of the estate and is taken from the Estate promotional literature.

- 1963 Cabernet planting by Max Lake's family and friends.
- 1964 A-frame erected, later to become the vineyard logo.
- 1966 The first true vintage, truly hand (and feet) made.
- 1967 First commercial vintage.
- 1968 Barrel trial of the oaks of twelve different forests.
- 1969 First Chardonnay plantings.
- 1970 Fermenting wing added to original A-frame.
- 1973 Len Evans, Australian Complete Book of Wine: "its influence and the quality of wine it produces have given it an importance which greatly outweigh its size".
- 1974 Dan Murphy, Classification of Australian Wines: "The impact which (the) wines have had on the Australian wine world...places the red in the 'very great' category. A classic wine in its own right...does not fit easily into any style".
First Chardonnay vintage.
- 1977 Stephen Lake becomes assistant wine maker. Cask Room and residence added.
- 1979 Further Chardonnay plantings. In Robin Bradley's Australian Wine Vintages, Lake's Folly has the distinction of 5 stars for both red and white wines.
- 1981 Building extension and Chardonnay cellar completed.
- 1982 Stephen Lake now the wine maker. Max Lake consulting.
- 1983 Quoted in Bradley's book "Small Wineries of Australia" as being one of the important vineyards of the world.
- 1984 Jeremy Oliver's new book "Thirst for Knowledge" ranks Lake's Folly in the 4 consistently best Australian Cabernets.
- 1986 Substantial exports to the USA and UK including the Ritz in London, help put Australia's mark on the wine world map.

In all there are 12 hectares of vineyards at the estate, mainly Cabernet Sauvignon and Chardonnay with some Shiraz, Merlot, Malbec and Petit Verdot for blending with the Cabernet in the great tradition of the Bordeaux region.

Dr Lake graduated from Sydney University in 1946 and specialised as a surgeon. His higher degrees were F.R.C.S. Eng. 1954 and F.R.C.S. Ed. 1954. On return to Australia from training in England, he became a surgeon at Bankstown and Ryde Hospitals in Sydney and later specialised in the new field of surgery – hand surgery. One son, David, has followed him into the medical profession and became a GP in Mona Vale, Sydney, whilst the other son, Stephen, took over the wine making duties from Max in 1982. This left more time for Dr Lake to pursue his other main interests of wine judging, writing books about wine, man's sense of smell, and music, more fully, Dr Lake having retired from medicine earlier.

Lake's Folly is now owned by Perth businessman, Peter Fogarty.

DR DAVID MADEW OF MADEW WINES

David Michael Madew was born in Cooma in 1935 and graduated from Sydney University in 1958. After a residency at Royal Prince Alfred Hospital, Sydney, and being a Registrar at Concord Hospital and in UK, Dr Madew became a General Practitioner at Queanbeyan, gaining his F.R.A.C.G.P. in 1973.

Dr Madew has an 8 hectare farm on which he had tried unsuccessfully to grow crops and raise sheep and cattle. After a visit to the Napa Valley in California, he realised that the areas were similar so he planted a trial 0.5 hectare plot in 1980 to see how the vines

would go. By 1985 he had finished planting 5 hectares in all. Rhine Riesling 1 hectare, Merlot 0.5 hectare, Semillon 0.25 hectare and 0.25 hectares of “odds and ends”.

Dr Madew’s training, both viticultural and oenological, was from the Riverina College and local experience. His own first vintage was in 1983. The winery was built in 1987 and has a capacity of 30 tonnes with a present production of 2,500 cases.

Dr Madew is an active member of the Canberra Vignerons Association, which boasts one of the highest percentages of medicos and PhD’s or DSc’s of any wine region in Australia.

DR DON MAXWELL OF “MAXWELL’S MALUNA”

Dr Donald Charles Maxwell was born in 1931 in Sydney. After graduating M.B.B.S. from Sydney University in 1955 he specialised as an anaesthetist, gaining his F.R.A.R.C.S. in 1960 and F.F.A.R.C.S.Eng. 1961. He is currently an anaesthetist at St Vincent’s Hospital, Prince of Wales Hospital and Prince Henry Hospital in Sydney’s eastern suburbs.

In 1969 Dr Maxwell bought his 165 acre property in Pokolbin in the lower Hunter Valley and called it “Maluna”. It had been originally planted by the Wilkinson family and went out of production in 1930 due to the depression. The property was then used as pasture land until a bush fire in 1968 destroyed everything. The first plantings of vines was in 1971 and the first vintage was in 1973. Wine was made with an annual production of about 10,000 cases being the maximum. Due to the time and effort

involved, the wine making stopped in 1979, so that Dr Maxwell had more time for his medicine.

Dr Maxwell maintained his 50 acre vineyard and sold the grapes to local wine makers. Grape varieties grown include Pinot Noir, Cabernet Sauvignon, Malbec, Chardonnay, Semillon and Shiraz.

DR DAVID McMANUS OF “McMANUS WINES”

David Boyd McManus was born in Yenda in the Murrumbidgee Irrigation Area in 1930. He graduated MBBS from Sydney University in 1964 and later trained at Sutherland Hospital.

In 1969 Dr McManus and his sister, Marguerite, established their vineyard of 22 acres on a 104 acre farm. Their father had settled in the area and bought the farm in 1922 after serving for 4 years in the 18th Battalion AIF in World War I. Dr McManus grew up on the farm and learnt his viticulture from practical farming. He has planted Cabernet Sauvignon 6¹/₂, Chardonnay 2, Black Shiraz 3, Pinot Noir 1, Semillon 1-2, Merlot 1, Traminer 1, White Shiraz 6 acres and Malbec 1.

The winery was built in 1973 by insulating and converting the old hayshed. It has a capacity of 50 tonnes and witnesses Dr McManus' self-taught unconventional wine making techniques. The vines are under irrigated by M.I.A. standards, resulting in poorer yields, but fruit with greater colour and flavour. This fruit is then made into wine by wine making techniques that are as simple and as natural as possible. Old French

methods are adopted – there is no over pressing or over filtering. No sophisticated laboratory is used, but rather progress is assessed more by taste. The resulting wines are what wine used to be like before modern techniques made it too weak, too sterile and lacking in character in some cases. The reds are stored in stainless steel tanks with oak wood chips added.

The wines were usually blends named after family members and friends. For example, the Cabernet Raghall style was 80% Cabernet, 10% Malbec and 10% Shiraz and the Margurite style Dry White was made from 70% Semillon, 20% White Pinot and 10% Trebbiano.

DRS FRANK MILLS and JOHN BURGESS OF “ROTHBURY ESTATE”

Drs Frank Mills and John Burgess were members of the original 11-man syndicate that founded the Rothbury Estate. Other members of the syndicate included Len Evans and Murray Tyrrell.

Dr Mills graduated from Sydney University in 1933, later gaining his F.R.C.S.Eng and F.R.A.C.S. and became a surgeon at the Royal Prince Alfred Hospital in Sydney. He served as a Major in the A.A.M.C. and served with the AIF in Malaya in 1941, later to be taken POW in Singapore in 1942.

Dr Burgess graduated from Sydney University in 1940 and became a M.C.R.A. He was a radiologist at St Vincent’s Hospital, Sydney.

Rothbury Estate is now part of Fosters Beringer Blass group.

DR PHILIP NORRIE OF “PENDARVES”

Dr Philip Norrie was born in Sydney in 1953 and graduated with M.B.B.S. from the University of New South Wales in 1977. After working in various Sydney hospitals for 3 years, Dr Norrie “squatted” at Elanora in Sydney’s northern beaches area and has been in general practice there ever since as a solo general practitioner.

Dr Norrie is a direct descendent of Alexander Norrie, who migrated from Aberdeen in 1839 and settled at Gresford, working “Commodore Farm” and the Poulton family, who also settled at Gresford in the mid 1800’s. Both families were contemporaries of Dr H J Lindeman, who settled on his property “Cawarra” just outside Gresford in 1841 and was the general practitioner for Gresford.

In 1986 25 acres of land was purchased in the Old North Road, Belford, on the northern extreme of the lower Hunter Valley vineyard area. Also in 1986, research was commenced into a history of all the doctors in Australia who established vineyards. Over the subsequent or following years, another 50 acres of adjacent land was purchased and research continued into the life of Dr H J Lindeman, all the vineyards of Sydney and the life of Leo Buring.

In 1988 24 acres of vines were planted – mainly Pinot Noir, Verdelho and Chardonnay, with small areas of Merlot / Malbec / Sauvignon Blanc. Eventually, 50 acres of vines

were cultivated at “Pendarves Estate”, including more of the previously mentioned varieties, plus Chambourcin and Shiraz.

DR GERALD O’NEIL OF “McPHERSONS”

Dr Gerald O’Neil graduated M.B.B.S. from Sydney University in 1953, then specialised as a gynaecologist, becoming a F.R.C.O.G. and F.A.G.O. in 1973 and F.A.C.O.G. in 1979.

Dr William Basil graduated M.B.B.S. from Sydney University in 1960 and later became a M.R.C.P. (London) in 1965. After returning to Australia he became a GP in Sydney’s southern suburbs.

In 1970 both Dr O’Neill and Dr Basil were part of a 15 member syndicate, which established a vineyard on a 350 acre property in the Pokolbin district run by Jock McPherson. McPherson’s was the first vineyard to plant Marsanne in the Hunter Valley. Other vines included Cabernet Sauvignon, Semillon, Shiraz and Oeillade (commonly known as Blue Imperial).

Three bad seasons, one of hail, one of drought and one of heavy rain affected the vineyard production. This financial blow was compounded by large borrowings from several banks to finance the building of a large, modern, gravity-using winery on the property. The venture went into liquidation in 1978, when the poor yields from the vines couldn’t fund the winery repayments. The vineyard and winery became Sobels Winery and now is Bimbadgen Estate.

DR NEWTON POTTER OF “ALLANMERE”

Newton Potter was born in 1930 in Durham, England. He graduated M.B.B.S. from Durham University in 1955 and worked at Newcastle General Hospital at Newcastle on Tyne in northern England. In 1960 he qualified as an anaesthetist, gaining his F.P.A.R.A.C.S. Between 1965 and 1971 he was anaesthetist at Sydney Hospital and later at Crown Street Women’s Hospital.

In 1975 Dr Potter bought 240 acres on Allendale Road in the lower Hunter Valley. It was formerly Penfolds Sparkling Vale vineyard. He planted 2 acres of Semillon and leased George Harmon’s Vineyard at Broke. This vineyard consists of 6 acres Cabernet, 3 acres Shiraz and 3 acres of a mixture of Traminer, Sauvignon Blanc and Chardonnay. Other fruit required is purchased from local vineyards, who produce fruit of the high quality needed by Dr Potter.

Dr Potter’s motivating philosophy to wine making is worth recording. He is basically a self-taught viticulturalist and oenologist –

“Wine making is creative. It is in some ways a very practical occupation and yet is a great deal more “cerebral” than many imagine. It is a perpetual search for excellence... vintage variations accepted”.

Between 1984 and 1986 the winery was built and called “Allanmere”.

In 1986 Allanmere really made its mark on the wine scene by “cleaning up” at the Hunter Valley Wine Show. Allanmere was the most successful exhibitor in the small wine making class with truly excellent reds and whites that had extraordinary balance and flavour.

The winery has a capacity of 7,000 gallons made up as Chardonnay 750 cases, Semillon 500 cases, Cabernet 500 cases, Hermitage 1,000 cases, Sauvignon Blanc 250 cases and Traminer 250 cases.

Monarch wines now owns the “Allanmere” label and a Qantas pilot owns the property.

DR IVOR ROBERTS OF “WELBY PARK WINES”

Dr Ivor Charles Roberts was born in 1926 at Orroroo in South Australia. He graduated M.B.B.S. from the University of Adelaide in 1952 and later trained at several hospitals in England including the Royal Surrey Hospital, the Royal South Hants Hospital and the Royal Marsden Hospital. In 1964 he completed a diploma of Sports Medicine at the University of Innsbruck, Austria.

With no formal viticultural training, In 1973 Dr Roberts bought 50 acres in Pokolbin, between Hungerford Hill and Rothbury Estate. In 1974, 2¹/₂ acres each of Shiraz and Cabernet Sauvignon were planted, followed in 1976 with 2¹/₂ acres each of Semillon and Chardonnay. The wine was made by Ed Joualt locally.

Dr Roberts set out originally to make his own wines in his own winery. The winery location had even been selected on the property – it was to be near the road and on a slope so as to use the force of gravity to help drop the grapes and juice from crusher to press, to fermenters and finally to casks on the lowest level. What stopped the plan and eventually forced Dr Roberts to sell his vineyard was the fact that all his time, energy and money were needed to start a restaurant.

As Dr Roberts wrote to me “Then (after establishing the vineyard) I bought a beautiful old house in the Southern Tablelands near Mittagong and set about turning it into a restaurant. This was the death-knell to my ambitions to build a winery”.

Dr Roberts also wrote two wine books, the first being “Australian Wine Pilgrimage”, followed by “Great Australian Wines”.

DR ROGERS OF “AUGUSTINE VINEYARD”

Dr Peter Augustine Rogers was born in 1922 in Hobart. He graduated M.B.B.S. from Sydney University in 1946, then specialised in ophthalmology, gaining his O.O. Sydney in 1949, M.A.C.O. in 1969 and finally his F.R.A.C.S. in 1972.

In 1969 Peter and Ken Spencer bought Dr Thomas Fiaschi’s Mudgee vineyard, which had been abandoned in the 1940’s. Dr Rogers was the silent financial backer of the venture and gave his middle name, Augustine, to the vineyard. The only vines surviving from Dr Fiaschi’s time were the Aleatico vines, unique to Dr Fiaschi’s vineyard. (Aleatico is discussed more fully in the section dealing with Dr Ray Healey).

A major replant of 38 hectares was commenced. Cabernet Sauvignon, Shiraz, Pinot Noir, Semillon, Traminer, Chardonnay and Trebbiano were all planted and straight varietal wines were made. Those wines released under the Augustine label were to be drunk early, whilst those released under the Chevalier label, were to be cellared for five years or more.

Despite the best of intentions, the venture never really flourished and was eventually sold to local interests in the early 1980's. The difficulty of distributing and selling the wine was the main reason for the failure of the venture.

DR JOHN SCHMIDT OF "TALGA"

Dr John Schmidt was born in Sydney in 1946. He graduated with M.B.B.S. from the University of New South Wales in 1972 and after training as a gynaecologist in Sydney and London, he gained his M.R.C.O.G. in 1978 and F.R.A.C.O.G. in 1981.

In 1987 John Schmidt bought the "Talga Vineyard", which had been established by retired Sydney pharmacist, Mr Harry Foran between 1983 and 1985 and was located on Talga Road in the lower Hunter vineyard district.

Talga vineyard then consisted of 8 acres of Chardonnay and 4 acres of Semillon. In 1988 Dr Schmidt planted an extra 6 acres of Chardonnay and 6 acres of Cabernet Sauvignon, but has since sold out.

DR PETER SEVILLE OF “BROKENWOOD”

In 1971 three lawyers Tony Albert, John Beeton and James Halliday bought 4 hectares next door to Hungerford Hill. Initial plantings of Cabernet Sauvignon, Pinot Noir and Shiraz commenced in 1972. In July 1978 a further 16 hectares, adjacent to the original 4 hectares, was purchased from Hungerford Hill. This land was planted with more Shiraz and Cabernet to supplement the original plantings, which was necessary due to the low yields of high quality grapes generated from the heavy red clay soil. Other varieties have also been planted including Merlot, Malbec and Cabernet Franc for blending with the main red varieties of Shiraz, Cabernet Sauvignon and Pinot Noir. Later Semillon and Chardonnay were added, with the first whites being produced in 1982.

The winery was built in 1975 and a new winery was added in 1983. To help accommodate this new expansion of winery, plant, equipment and vineyard, six new partners, each with smaller interests, were taken into the fold in 1978.

Dr Peter Seville was amongst these six. Dr Seville works on the medical staff of the large drug company Smith Kline & French.

DR BRUCE SHEPHERD OF “RICHMOND GROVE”

Dr Bruce Shepherd was born in Tamworth in 1932 and graduated originally in dentistry from Sydney University with B.B.S. in 1953. He then did medicine, graduating M.B.B.S. Sydney University in 1958. After the usual training in England, Dr Shepherd

gained his F.R.C.S. London and F.R.C.S. Edinburgh in 1961 and upon returning to Australia, became a F.R.A.C.S. in 1964, specialising in orthopaedic surgery.

Whilst on a holiday with his friend John Muddle in the late 1970's, the idea of establishing the Richmond Grove vineyard was begun. John Muddle had just bought a cattle property called Richmond Grove in the upper Hunter Valley vineyard area, but knew nothing about wine, preferring to drink beer. Dr Shepherd educated him about the virtues of wine and suggested establishing a vineyard on his property. Brian McGuigan was brought in as the technical consultant and each person John Muddle, Dr Shepherd and Brian McGuigan was an equal third partner in the new vineyard. The initial planting of 29 acres of Semillon and Shiraz commenced in 1969. John Muddle became so involved with the vineyard that Dr Shepherd sold out his share in the vineyard after a year or so. Later Brian McGuigan went to run the Wyndham Estate operations, leaving John Muddle in full control. The wheel went full circle with the Wyndham Estate syndicate under Brian McGuigan, buying Richmond Grove. The Richmond Grove label is now owned by Orlando Wyndham.

DR BOB SMITH OF "HORDERN'S WYBONG ESTATE"

Dr Robert Gordon Smith was born in Sydney in 1931. After gaining his M.B.B.S. at Sydney University in 1954, he trained as an Orthopaedic Surgeon in Sydney and in England, where he became F.R.C.S. Eng. 1958 and later F.R.A.C.S. in 1962. Now Dr Smith is a Specialist Orthopaedic Surgeon at Harbord in Sydney.

Dr Smith's interest in wine was started by one of his surgical lecturers, Dr Gilbert Phillips (who founded the New South Wales Wine and Food Society), and reinforced by a visit to the Chateau Beychevelle in France in 1959. This interest was to finally be satisfied when he planted his vineyard on the south west corner of the Brogheda property in 1967. Two years prior to this, the owner of Brogheda, David Hordern, became the first private individual to plant vines in the Upper Hunter Valley when he established his vineyard by planting 3.2 hectares of Shiraz cuttings. Brogheda is on the Wybong River, east of Muswellbrook.

David Hordern and Dr Smith formed a partnership to build a winery. They chose the old Bongala Prison. It had been built by convict labour in 1838 and was purchased for a reasonable price, but the cost of demolition and transport to Brogheda proved a large hurdle. This problem was solved in true country fashion, when David Hordern challenged the coach of the Denman Football Club that his strongest players couldn't move the sandstone blocks. Eventually the team moved the goal to Brogheda and a stonemason used the blocks to construct the winery with the aid of ironbark supports from the old Dalgety Wool Stores and rafters from Reschs Brewery. The end result is a functional winery full of old-world charm, the ideal setting in which to make good wine.

Dr Smith went to Germany and California to learn wine making by working vintages there. He later combined with David Hordern's nephew, John Hordern, to make the wine. The first vintage was in 1971 and it wasn't long before top quality wines were made, as shown by the multi-award winning 1974 Semillon. Now a professional full-time wine maker is employed, leaving Dr Smith free to manage the whole operation and

to continue his medical practice. One other change has occurred recently, in that the 20 acres of red grape vines have been pulled out because the red wines made were of indeterminate quality and the vineyard now concentrates on its 20 acres or more of white varieties, mainly Semillon and Chardonnay, because that is what Dr Smith thinks they and the Upper Hunter in general do best – making exceptional whites.

Dr Smith sold out to Ian Reynolds, who formed Reynolds Wines, which in turn sold out to Cabonne Ltd in Orange in 2000. Cabonne Ltd has now gone into liquidation.

DR QUENTIN TAPERELL OF “QUENTIN VINEYARD”

Doctor Quentin John Taperell was born in 1911 at Waitara on Sydney’s north shore. He studied pharmacy first at Sydney University and became a Pharmacist in 1932. Later he studied medicine, again at Sydney University and graduated M.B.B.S. in 1947. He now practises as a dermatologist between Fairfield and Campbelltown.

Dr Taperell’s love of wine led him to purchase 100 acres in Deasey Road, Pokolbin in 1971. When I asked about viticultural and oenological training, Dr Taperell replied “owning own vineyard” to my questionnaire.

In 1972, 20 acres of Shiraz was planted. In 1973 another 10 acres of Shiraz was planted, plus 5 acres of Cabernet Sauvignon, 4 acres of Traminer, 1 acre of Brown Muscat, 1 acre of White Muscat, 17 acres of Semillon and 2 acres of Sultana and Doradillo.

The winery was built between 1974 and 1977, gradually enlarging due to increased demand. Eight 500 gallon stainless steel tanks were used for cold fermentation and the resultant wine was aged in French, German or American Oak. Port was made from Shiraz and blending of the Semillon and Traminer occurred.

Due to health reasons, Dr Taperell sold the “Quentin Vineyard” early in 1979 at the age of 68. Peter Marsh, also a chemist who was involved at Terrace Vale, bought the property and has stayed ever since as “Marsh Estate”.

DR ERROL THOMPKINS

Errol Tompkins is a psychiatrist at Gladesville Psychiatric Hospital, who has a small 3 acre vineyard in the Mudgee District, which he works with his family.

DRS PHILIPPA & KEITH WHISH OF “GILGAI WINES”

Drs Philippa and Keith Whish established the Gilgai vineyard in Inverell in New South Wales’ north west in 1967. Dr Philippa Nancy Whish was born in Sydney in 1931 and graduated M.B.B.S. from Sydney University in 1956. She trained at Royal Prince Alfred Hospital, Sydney and is now a General Practitioner in Inverell and a Visiting Medical Officer at Inverell District Hospital. Dr Keith Mulroy Whish was born in 1925 in Young, New South Wales and graduated M.B.B.S. from Sydney University in 1953. He trained at St George Hospital in Sydney and Western General Hospital in Edinburgh. In 1971 he became F.R.A.C.G.P. and in 1977 gained his D.Obst. R.C.O.G.

Today he is a General Practitioner in Inverell and a Visiting Medical Officer at Inverell Hospital.

In 1967 they bought 100 acres at Gilgai (Aboriginal for “waterhole” or “place of refreshment”), 10 kilometres south of Inverell and in 1968 established Gilgai Wines, thus reviving the Inverell wine industry. In 1830, George Wyndham established Dalwood vineyard near Branxton in the Hunter Valley. In 1849 his sons Charles and Alex established a vineyard at Bukkulla using cuttings brought by horse back from Dalwood. At each river crossing he dipped the ends of the vines in the water to help keep them alive. Dr Louis Segal established his “Beaulieu” vineyard at Inverell after 1875. So the tradition of Inverell medicos establishing vineyards was begun and now carried on by Philippa and Keith Whish.

The soil is red laterite and is at an elevation of 760 metres. The warm, dry weather (750 mm rainfall per year) is good for grape maturing and ripening with the vintage of three weeks occurring in March. The vineyard covers 5 hectares in all, and was planted with vine cuttings procured from Dalwood – so history is repeating itself.

The winery was built in 1973 with a capacity of 40 tonnes, producing 4,000 gallons of wine annually. Historically, the Inverell district was very suited to Malbec and the Doctors Whish found this to be true.

Their second son, Charles, graduated in oenology from the Roseworthy Agricultural College and helps at Gilgai when not working for other wineries.

ORCHARD HILL

The Orchard Hill district in Sydney's western suburbs near Penrith grows black muscat table grapes on a volcanic soil outcrop on clay. The vines are planted to run north to south. The district growers rely on selling their grapes to the Sydney markets early in the season, before the Queensland and Riverina grapes come up for sale.

Originally the area growing table grapes along the Great Western Highway extended from Rooty Hill to Penrith. From the 1950's, the pressure from housing estates has caused a contraction of the area to Orchard Hills only. The minimum area, which is economically viable, is 10 acres and Orchard Hills seems to be the inner limit to successfully grow grapes in Sydney now, due to the effects of excessive rainfall. Despite this, the growers have to spray fortnightly during the season. Birds are the only other problem now for growers, and onion bags and netting are used to thwart them.

The 170 hectares of vines at Orchard Hills is being subjected to pressure from housing estates, but the vineyard area should be preserved and maintained as a "green belt" oasis in the western suburbs urban sprawl.

Two doctors are involved in viticulture in the Orchard Hills area. The first was Dr Graham Dinning, who graduated from Sydney University in 1952, then gained his F.R.C.S.Eng. in 1960. He is now a General Surgeon at Nepean District Hospital.

The newcomer to the area is Dr Daryl Chamberlain, who is another graduate from Sydney University, this time in 1962. He is a local General Practitioner.

VICTORIA

Victoria was originally part of the colony of New South Wales, known as the Port Phillip district, until it gained its independent colonial status at the beginning of the gold Rush in 1851. The coast was visited by Bass and Flinders between 1797 and 1802.

In 1803, Colonel David Collins made an abortive attempt at settlement just inside Port Phillip heads. After this, the Victorian coast was only visited by sealers and whalers. In 1825 Hume and Hovell made their famous overland trek from Lake George to Port Phillip Bay, thus opening up the development of Victoria from New South Wales.

Between November 1826 and January 1828, another abortive settlement was made, this time a military post at Western Port to prevent French colonisation of the area. In November 1834, Edward Henty on the “Thistle” settled on the shores of Portland Bay. He brought with him some vines from Tasmania, but they didn’t survive.

In 1835, John Batman and later John Pasco Fawkner, came from Tasmania and settled the Yarra River Basin area and founded Melbourne. By 1840, Fawkner had nearly 9 acres of vines planted near Flemington in Melbourne. After the settlement of Melbourne and after Major T L Mitchell had entered Victoria from the north (from New South Wales), the State developed rapidly, so much so that by 1836 Governor Bourke of New South Wales sent officials down to Melbourne to establish government control.

In 1837, William Ryrie travelled overland from the Cooma area of New South Wales to the Yarra Valley. He brought with him vine cuttings, which he planted in his new home in the Yarra Valley in 1838.

In the 1840's the Melbourne region, the Yarra Valley and Geelong all developed as vineyard areas. It was not until after 1875 that things went wrong for the Victorian wine industry.

In that year phylloxera began in the Geelong region, most likely from infected root stock from France. The Geelong regional vineyards were destroyed quickly and then followed the rest of Victoria's vineyards. The pressure from the urban sprawl ended Melbourne's viticultural aspirations and the combination of the pressure from dairying and the influence of the Temperance League, saw the demise of the Yarra Valley by 1921.

The Yarra Valley was the home of the de Castellans and the de Purys (one of many Swiss families, which populated Victoria). It wasn't until Drs Middleton and McMahon began their viticultural pursuits in the very early 1970's that the Yarra Valley took off again as a viticultural area.

The Gold Rush of 1851 opened up Victoria even more and vineyards followed, being established in the newly settled districts such as Bendigo in 1855, Great Western in 1858 and Ballarat in 1859. As usual, the medical profession was at the forefront of this new development.

After phylloxera destroyed the Victorian vineyards in 1875, only the stronger vineyards were able to bear the cost of replanting.

DR ROBERT HOPE OF “LYNNBURN”

Robert Culbertson Hope was born on the 12th April 1812 at Morebattle near Kelso, Roxburghshire, Scotland. His father was Robert Hope, a local landowner and his mother was Joan, nee Culbertson. He did his medical training at the University of Edinburgh, gaining his M.D. in 1834 and also won a prize in surgery. After graduation, Dr Hope became Dr John Douglas’ assistant at Hawick in Roxburghshire.

On the 18th April 1838, Dr Hope sailed for a new life in the colony of New South Wales as the surgeon on board the “Lady Kennaway”, arriving in Sydney town on the 12th August 1838. After settling in, he practised medicine at Narellan near Cobbitty for the next eight years. Eventually he met and courted Catherine Elizabeth Hassell, eldest daughter of the Reverend Thomas Hassell and grand daughter of the Reverend Samuel Marsden, who established his vineyard at his property “Mamre” in St Marys in Sydney’s outer western suburbs. On the 12th August 1846 Robert and Catherine married.

In the meantime, Dr Hope’s brothers, George and James, who had come to Australia in 1836 had established grazing properties in the Port Phillip district in 1837. In 1841, Dr Hope travelled overland to be with them. He practised medicine in Geelong until he and his brother George established their respective properties in the nearby Batesford area. Dr Hope called his property Lynnburn and George called his Darriwill. Together they

built two flour mills, one on the nearby Moorabool River and the other on the Barwon River, near the town of Inverleigh and established large flocks of sheep.

During the gold rush period, both men prospered by supplying meat, bread and vegetables from their properties to the diggers, especially at the Bendigo and Ballarat fields. They were also early viticulturists in the Geelong district. Between 1856 and 1858, Dr Hope planted the vineyard at Lynnburn on the Moorabool River and James and George planted 20 acres of vines at Darriwell.

Besides medicine, wool growing, flour milling and viticulture, Dr Hope's other main interest was in politics. The doctors in the 19th century certainly were diverse in their interests. From 1856 until 1874, when poor health forced him to resign, Dr Hope was the Member for South West Province in the Victorian Legislative Council. He bought the house "Summerlea" in St Kilda for his frequent stays in Melbourne whilst Parliament sat. In 1860 he became Chairman of the Board of Agriculture. He also was a founder of the Mechanics Institute at Batesford and President of the Geelong and Western District Agricultural and Horticultural Society.

Dr Hope died on the 24th June 1878. He was survived by 9 sons and 2 daughters, of whom, Thomas Culbertson was the only one to pursue medicine, practising in Geelong. His vineyard was destroyed by phylloxera late in the 1870's.

DR AUGUSTE MUELLER OF “YACKANDANDAH”

Dr August Mueller was born in Westphalia, Prussia, in 1828, graduating with an M.D. at Geissen in 1854. In order to avoid conscription into the army and service in the Crimea, he boarded a ship at Hamburg and migrated to the other side of the world. After arriving in Adelaide, he made his way up the Murray River to find a friend, who was practising in Albury. Due to the fall in the level of the river, the boat was stranded, so Dr Mueller proceeded by foot overland to Corowa, only to learn that his friend had left Albury for Woolshed. During this time, Dr Mueller had been aided by the Aborigines, had survived a bushfire and treated himself for snakebite. Eventually he arrived in Stanley, where he practised until upon hearing of the death of Dr Ford, Yackandandah's first and only doctor, he moved there in 1862 or 1863.

Dr Mueller was an industrious man. He collected a large library, established a vineyard and wrote many articles for the medical publications. One article published in 1893 was entitled “On Snake Poison it's Action and it's Antidote” and described the use of strychnine as a cure for snakebite. Another article in 1897 was entitled “On the treatment of Typhoid Fever with Perchloride of Mercury”.

His vineyard contained Verdelho, Shiraz and Muscatel. His burgundy was supposed to be very good and was used as a medicine by the good doctor. In about 1870, Dr Mueller built his house called “Melville”, with large cellars and a winery on the corner of Kars and High Streets, across the road from his vineyard.

By this time his practice had extended up the Murray River and at the end of his “house call rounds” he had quite a sum of money on him, from fees paid. Susan Reynolds, in her history of Yackandandah, writes on page 32 “once during the time of Morgan the bushranger, he protected himself by dressing shabbily and distributing money in various places in his saddle and clothes. He was not molested”.

Susan Reynolds writes further about his death “...On his death on New Year’s Eve 1898, the town mourned a citizen “Of affable manner and charitable disposition”. The Yackandandah Times of January 6, 1899, printed a long and detailed obituary detailing the illness which resulted in his death. “...Dr Mueller’s end came exactly as he had wished and he died with the fortitude of one who was assured that he was simply passing from one state to another”. Although suffering from both a diseased thigh and a weak heart, neither of these seem to have caused his death. Diagnosed by himself and following a heavy fall “paralysis of the throat set in and the doctor knew his case to be hopeless”. He had in fact been visiting his patients till the evening of his fall on a Thursday and until he died on Saturday he had time to farewell his friends and set his business in order.

His funeral “a mile in length” was the biggest seen in Yackandandah for many years and both the Church of England (Reverend Warry) and Presbyterian (Reverend Meek) officiated at the graveside. Dr H Mueller, a nephew from Geelong attended, although there was no mention of a daughter, who is believed to have survived him. Mrs Mueller had died in 1887, after which Mrs Kuhlmann became housekeeper, Mr Kuhlmann having been Cellarman for some years. Just prior to his death, Dr Mueller had “disposed of his vineyard and cellars to Mr Kuhlmann”.

The Yackandandah Times of 1902 wrote: "...Melville Vineyard. Fine Old Invalid Wine. Vintage 1890, specially selected and carefully matured by Dr Mueller. Nothing like a reliable old wine when required in sickness. Wines in the vineyard gained prize medals in London, Bordeaux, Calcutta, Amsterdam, Paris and Melbourne. Four Silver Cups at Melbourne. Latest Gold Medal at London Exhibition", a fitting tribute to Dr Mueller (30).

DR LOUIS SMITH OF "L L VALE"

Louis Lawrence Smith was born in London on the 15th May 1830. He was the son of theatrical entrepreneur Edward Tyrell Smith and it may be this that gave Louis his self-promotional flair later in life. His education included five years at St Saviour's Grammar School, Southwark, from 1841, followed by five years' apprenticeship to Sir Thomas Longmore, a surgeon. This training was followed by study at the Ecole de Medecine in Paris in 1848, lectures at the London Society of Apothecaries in 1849 and training at Westminster Hospital in 1850. He gained his L.S.A. in 1852, after which he practised with Dr R J Culverwell, before migrating to Australia as ship's surgeon on the "Oriental".

After arriving in Melbourne on the 11th December 1852, Dr Smith went to the gold fields to practise before opening his surgery in Bourke Street, Melbourne in July 1853. Now that he had a permanent base, he began to make the Bourke Street rooms a real business. He advertised widely in the newspapers and made consultations by post, charging one pound per prescription. In 1861 he published his first Medical Almanac,

which was a comprehensive book detailing home treatments for illnesses. Thus began a long career of writing on medical matters. Dr Smith's section in the Bibliography of Australian Medicine 1790-1890, is one of the largest, covering over one and a half pages of manuscript titles such as:

- "How to get thin and how to get fat; or Banting superseded" 1864
- "Impotence and Sterility" 1864
- "On obstacles to marriage – a popular work on sex, with anatomy and ailments" 1864
- "The means of prolonging life and avoiding diseases" 1864
- "To the nervous. To those to whom married life is a burden. To those who have tried their family medical adviser without ... relief. And to those who suffer from spermatorrhoea and other fearful results of indiscretion in youth. Dr L L Smith ... begs to state he has devoted the whole of his life to the study and treatment of syphilitic diseases" 1872
- "Discoveries in the nature and treatment of gout, with original notes and observations after 26 years constant treatment of that disease...Claims discovery of an un-named neutraliser and solvent of uric acid. He will divulge his method only after he has gained his reward. Those who like to avail themselves of my knowledge can do so and reap the benefit, those who do not can bear their pain and keep their prejudices and their gout". 1878 (31)

The main title was the yearly Medical Almanac, which continued until 1925, ie. over 65 years! Other titles included "Our Doctor; on the Colonial Medical and Surgical hand

book” of 1886 and many articles appearing in the “Australian Journal” under the name of “Colonial Lancet”.

It can be seen from the titles that Dr Smith was very interested in venereal disease. He became notorious after he was acquitted of a charge of procuring an abortion in 1858. He later promoted his “Dr Smith’s pills for men” to treat venereal disease. Again he continued advertising and was allegedly earning £10,000/-/- per year by 1880.

Dr Smith’s next step up the self promotion ladder led him into politics. He promoted himself as “the peoples’ candidate for South Bourke” and was their member in the Legislative Assembly from 1859 to 1865 and again in 1877, but his political career was marred by self-seeking actions bordering on corruption of power. Despite this, Dr Smith served as a Minister without Portfolio from 1881 to 1883, spoke often about manufacturing and coal exploration, agriculture, chaired three select committees, was a member of several other committees, served on the Coal Royal Commission between 1889 to 1893 (initially acting as Chairman). He championed Victorian industry and wines and advocated protection from imported wines.

This interest in agriculture and especially wine, reflects Dr Smith’s third occupation, that of farming. He had farms in Dandenong, Narre Warren, Nunawading and Beaconsfield. He raised sheep, pigs and bred bloodhounds. He also bred race horses and had stables at Emerald Hill and at Kensington. However, his main agricultural interest was wine. He grew grapes on his vineyard at “L L Vale” at Nunawading and exhibited his wines successfully overseas, again by flair and self promotion. The following quote from Dr Sam Benwell’s book “Journey to Wine in Victoria” well illustrates this point:

“At Bordeaux in 1882, the Great Exhibition held by the Societe Philomathique of Bordeaux, under the patronage of the Government of France, the Conseil General of the Gironde Department and the Municipality and the Chamber of Commerce of Bordeaux, was a general one for France, Spain, Portugal and their colonies and an international one for wines, spirits and fermented drinks. Here was a Wine Olympiad, staged at the very centre of the world’s most prestigious vignoble – the ancient port of Bordeaux, the shipping centre for the greatest wines of France. It was the year following the closing of Melbourne’s Great Exhibition and Australia, full of confidence, was there in force, especially Victoria. There were forty-four Australian exhibitors, forty from Victoria exhibiting 260 samples mainly dry red and white wines, some Sherry, some Muscats and Tokays – and six cases of Champagne, which looked like a pretty cheeky entry from Dr L L Smith of the Victorian Champagne Company at the Eastern Market, Melbourne, that once romantic space now occupied by the Southern Cross Hotel. Cheeky or not, it took a silver medal” (32).

In 1883 he became President of the Victorian Wine Growers Association. As a member of the Phylloxera Committee, Dr Smith made the following famous quote. “...As a medical man, I know that desperate cases require desperate remedies”. Cures for the vine disease, which destroyed all before it, varied from flooding the vineyard to applying 6 cups/acre of sodium chloride, but all to no avail unfortunately, until phylloxera resistant American root stock vines were introduced in 1900.

Dr Smith was a colourful character with many interests, boundless enthusiasm and the gift of self-promotion. The Bulletin dubbed him £ £ Smith.

In the late 1890's, Dr Smith suffered from gout (despite his claims of a cure) and died in East Melbourne on the 8th July 1910 of pneumonia.

He left behind ten children by his first wife, Sarah Ann Taylor (who died in 1882) and five children by his second wife, Marion June Higgins, who survived him.

THE VICTORIAN LUNATIC ASYLUM VINEYARDS

At the Tarban Creek Asylum, Sydney (later the Gladesville Psychiatric Hospital) Dr Frederick Norton Manning began a new trend by establishing a vineyard at the asylum. (Please refer to his story earlier).

In Victoria the insane were usually housed in gaols prior to the establishment of the first asylum at Yarra Bend, Melbourne, in 1848. Even then the plight of the poor unfortunates was not much better off. Instead of being mistreated by gaolers and prisoners in the prisons, they were housed in prison-like asylum wards and mistreated by the asylum attendants.

Market gardens, orchards, dairy farms and vineyards were established by enlightened doctors to free their patients from the constant boredom of asylum life. The vineyard grapes and wine also provided a variation in the monotonous diet and supplemented the patient's meagre vitamin C intake (thus preventing scurvy, which was a common

complaint in large institutions). Any excess produce was sold to help the asylum's budget.

DR WILLIAM ARMSTRONG AND DR BEATTIE SMITH OF "ARARAT ASYLUM VINEYARD"

After the gold rush in Victoria began in 1851, many people became restless and mentally disturbed, often by drunkenness and unemployment, especially after the easily found surface gold began to run out. During the gold rush period, the population of Victoria expanded rapidly as well. All these factors contributed to a marked increase in the number of insane needing accommodation; hence two new asylums were established in the gold field areas in 1867 (the first since Yarra Bend in 1848). They were Beechworth in the north east and Ararat in the west.

The vineyard at Ararat has been credited to Dr Beattie Smith, but he only continued its cultivation whilst he was Medical Superintendent there from March 1887 until January 1899. In 1889 he made 450 gallons of wine he called "Golden Chasselas".

The first Medical Superintendent to mention the vineyard at Ararat was Dr William Armstrong in his Report to Parliament for the year 1883. In December 1881 he was appointed Resident Medical Officer at Ararat. In July 1882 he was Deputy Medical Superintendent at Yarra Bend Asylum, then Kew Lunatic Asylum. He became Medical Superintendent at Ararat in March 1883. In his Report for 1883 he states: "...A vineyard which the gardener planted some three years ago gives good promise for next vintage".

In 1884 he states "...The vineyard has now come into bearing and supplied a few hundred pounds of grapes last vintage and gives promise for next". While in 1886 he states "...The vineyard as anticipated yielded a good supply of grapes. Over a ton and a half was used as fruit. With the rest over 200 gallons of wine were made and in this operation young lady volunteers rendered valuable assistance by picking the grapes. The gardener and carpenter constructed an old fashioned lever press in the vineyard. The wine gives every promise of turning out well. A large amount of work has been done, the whole of vines have been trellised by the aid of iron wire and redgum posts". In his last Report for 1887 he comments: "...During the winter an underground cellar was dug for the storage of wine and this is capable of great extension. The whole of the vineyard has been trellised and it is expected that this will greatly augment the yield" (33).

Dr Beattie Smith became Medical Superintendent in March 1887. He was born in Northumberland, England, in 1854. His father was a doctor at Newcastle-on-Tyne. After training at the University of Edinburgh and the London Special Hospitals, he gained his F.R.C.S.E. and L.R.C.P.E. in 1876. He practised at Stockton-on-Tees in Durham County until the end of 1881, when he came to Australia for health reasons. He began work as a Resident Medical Officer at Ararat Asylum for a few months until he was promoted to the position of Deputy Medical Superintendent of Yarra Bend Asylum. Dr Beattie Smith continued at Ararat from 1887 until 1899, when he was made Medical Superintendent at the Metropolitan Asylum, Melbourne. He retired from State service in September 1902, when he became the first psychiatric consultant to enter private

practice in Melbourne and continued his lecturing in clinical mental diseases at Melbourne University.

He died in 1922. His will left money for the foundation of the Beattie-Smith Lectures at Melbourne University. They were the only public lectures given on psychiatry in Victoria and have been delivered annually at Melbourne University from 1928 (exception World War II).

Dr Beattie-Smith's Report to parliament for the year 1889 states "The vintage was excellent, some 450 gallons of wine being made notwithstanding that over 7000 lbs weight of grapes were sent in to the patients. The vineyard has been extended by the addition of five acres of land, which has been planted with rooted vines, partly from our own nursery and partly from Bendigo, the plants being Red Hermitage and Cabernet".

The 1890 Report had this to say: "...The vintage of 1890 was smaller than heretofore but more fruity. The patients had 3,740 lbs. weight of grapes sent in to them. The new vines are going well and in the cellar former vintages are maturing. The prospects for the coming vintage are extremely good. The profit on the account is 51 pounds, 2 shillings and 7 pence" (34).

The Ararat Advertiser Newspaper dated Friday 17 April, 1891, talks about the last vintage at the Ararat Asylum.

Eventually wet seasons with resultant depleted crops, forced the Government to have the vineyard closed.

DR WILLIAM WATKINS OF “SUNBURY ASYLUM VINEYARD”

Dr William Longworth Watkins was born in Roscommon, Ireland. He trained as a medical practitioner in Dublin, gaining the following qualifications: M.R.C.S. Ireland, Diploma King and Queen’s College of Physicians, Dublin, Diploma from Rotunda Lying-in Hospital and Cow-pock Institution, Dublin.

He came to Victoria in December 1869, after which he practised for a short period at the Ballarat Hospital before joining the Lunacy Department of Victoria in February 1870. He spent two years at the Beechworth Asylum before spending five years at the Kew Asylum. From 1881 until 1888, Dr Watkins was Medical Superintendent at Sunbury Asylum, before being transferred to Yarra Bend Asylum until his retirement on the 30th June 1905.

Whilst Medical Superintendent at Sunbury Asylum Dr Watkins had a small vineyard established, as shown by the following Reports he submitted to the Victorian Parliament. In the Report for the year 1882, under the section dealing with the garden, he reports: “...Endeavours are being made to cultivate fruit and vines”. In 1886 he had the pleasure to announce: “...A small vineyard was started during the year, and further planting of vines will be carried out in the ensuing season, as it is considered Sunbury is very suitable for their culture”. In 1887 he states: “...The small vineyard which was started last year, I regret to say, was sadly injured by the flood at the latter end of the year, but fresh efforts will be made to restore it and replace the vines destroyed” (35).

The vineyard was not mentioned ever again, so one can only assume that with its destruction by the flood and Dr Watkins' transfer to Yarra Bend the following year, no new attempts were made to establish a vineyard at the asylum.

DR ROBERT BOWIE

In December 1942, the famous wine personality Francis de Castella presented a paper entitled "Early Victorian Wine Growing" to the Victorian Historical Society. On page 156 he stated: "...Sunbury was first settled by John Aitken and by Samuel and William Jackson who took up runs in 1836. Samuel Jackson was Melbourne's first architect. They and also W.J.T. Clarke probably had small vineyards in the early 1860's ... other Sunbury vineyards were owned by J.S. Johnson at "Craiglee", Dr Bowie..." (36). Dr Robert Bowie was born in East Lothian in 1787 and became M.R.C.S. London in 1811. He initially practised as a General Practitioner in Scotland, before moving south to London after 1815. Here he practised also as a General Practitioner for nearly 40 years, devoted much time to the subject of sanitary science, before migrating to Victoria. Dr Bowie was appointed Surgeon Superintendent of the Yarra Bend Lunatic Asylum on the 21st October 1852. Here he worked tirelessly against great odds to improve the lot of the poor patients in the asylum.

After his retirement from Yarra Bend on the 25th August 1862, Dr Bowie began the final phase of his long medical career as the doctor in charge of an extended country practice at Northcote. It was during this period that Dr Bowie must have established the vineyard in Sunbury referred to by Francis de Castella.

Dr Bowie's sons, Walter and William, maintained the vineyard after his death in 1869 for Bailliere's Victorian Post Office Directory of 1875 lists: "Bowie, Walter and William – Vignerons, Sunbury'. Walter Bowie has been credited with introducing the cultivation of opium into the colony.

Even to the end Dr Bowie practised his beloved medicine. He literally died "in harness", as shown by his obituary in the Australian Medical Journal. "He died suddenly and without previous illness. He had gone on his customary rounds on Saturday and retired to bed in his usual state of health. He was found comatose on the following morning and died during the day without pain" (37). He was 82.

SIR JOHN HARRIS

John Richards Harris was born on the 24th January 1868 in Chiltern, Victoria. he was the second son of Thomas Henry Harris, a Cornish miner and Mary Richards Hollow, also from Redruth in Cornwall. He was educated at the Rutherglen State School and Grenville College at Ballarat.

He studied medicine at Melbourne University, graduating M.B. 1890, B.Sc. 1891 and M.D. 1902. His residency was spent at Melbourne Hospital from 1891 to 1902, followed by him establishing his practice at Rutherglen in 1892. At this time his father was gold mining in the Rutherglen district. His general practice expanded well and he later established a private midwifery hospital and also became a surgeon.

On the 16th December 1896, Dr Harris married Jessie Lily Prentice, the daughter of a local vigneron. His new father-in-law may have suggested that Dr Harris became a vigneron as well, for he sought out the advice of one of Australia's best wine authorities in Francois de Castella. After being advised as to soils and vine types, Dr Harris bought his property called "Trahna" one mile past Lake Moodemere, to the east of Rutherglen, in 1909. He became so conscientious about wine making, that he moved his bed into the winery to sleep there during fermentation. At this time it was traditional to make sherry in Australia by oxidisation, which involved protecting the wine from bacilli during the short period of time that the sherry base was exposed to the air.

The best sherries were made in Jerez, Spain, where the flor yeast found on the leaves of the vines was allowed to multiply on the surface of the fermentation in the presence of air, eventually covering the surface completely after a year or so. After the wine had taken up enough of the flor qualities, the wine maker had it removed and the wine filtered, fortified and aged as required. During one of his visits to Europe, Francois de Castella visited Jerez and obtained some of the flor yeast illegally and smuggled it back to Australia. Legend has it in his handkerchief. In 1912, Dr Harris was the first in Australia to make sherry in the traditional European (Jerez) way, but it was not until the 1950's that it became common practice in Australia.

Dr Harris continued to make his own wines and sherries, even though he was a busy medical practitioner and surgeon. He made a dry sherry from Palomino grapes and one was called Phar Lap, after the race horse. Sherry made from flor yeast in the Jerez manner became affectionately known as "Dr John" sherry.

World War I saw Dr Harris enlist in the Australian Army Medical Corps on the 9th August 1917 and served as medical officer of No. 1 Squadron Australian Flying Corps in Palestine. Late in 1918, after becoming ill, he was repatriated back to Melbourne, arriving in January 1919. Now Dr Harris began a new phase in his career – that of politics. On the 2nd September 1920, he became the North Eastern Province member in the Legislative Council, representing the Victorian Farmers' Union (later the Country Party), until defeated in June 1946. Because there were so few Country Party members in the Legislative Council, he quickly rose to prominence. He became Minister Without Portfolio from July 1925 until May 1927 and Minister of Public Instruction and of Public Health from April 1935 until January 1942. He was the unofficial leader of the Legislative Council from 1928 to 1935 and Government Leader from 1935 to 1942. In 1937 he was made a Knight of the British Empire for his services to Parliament.

Other public memberships held by Sir John Harris included membership and later Chairman of the Council of Agricultural Education from 1925 to 1945, member of the Australian Wine Board, member and later President of the Rutherglen District Winegrowers' Association and Chairman of the State Emergency Council from 1939 to 1942.

Lady Harris died in 1937. Sir John died on the 16th September 1946 and is buried in the Carlyle Cemetery, Rutherglen. He was survived by his three sons, the eldest of whom, Tom, became an anaesthetist in London and the youngest, Jack, took over the family vineyard, which later became grazing land.

DR FETHERSTON

Gerald Henry Fetherston was an Irish doctor, born in 1821, who spent four years as a ship's surgeon before settling in Melbourne in 1860. He later became the resident surgeon at the Melbourne Lying-in Hospital (now the Royal Women's Hospital). His wife, Sarah Ellen, had been Matron there prior to giving birth to their son Richard Herbert Joseph Fetherston on the 2nd May 1864.

"Bertie" as he became known, was educated at a preparatory school in Toorak, then at Wesley College. In 1881, at the age of 17, he sailed for Britain and studied medicine, firstly at the Royal College of Surgeons, Dublin, then at the Medical School of Trinity College. He gained his Licentiate of the Royal College of Surgeons, Ireland, in June 1884. He also won prizes in anatomy and surgery. In 1885 he gained his M.B. Ch.M. from the University of Edinburgh. After some hospital work in London during the winter of 1886-7, Dr Fetherstone returned to Melbourne to help his father in general practice in Prahran. In 1890 he became a Resident Surgeon at the Women's Hospital and in 1891 he was appointed honorary surgeon in the midwifery department after his father's retirement as a member of the honorary staff. By 1901, Dr Fetherston was senior enough to transfer to the gynaecology department and there he stayed until his appointment to the newly created position of honorary gynaecologist at Royal Melbourne Hospital, which he held until his retirement in 1924.

Dr Fetherston's other medical contributions included succeeding his father as Medical Officer for Prahran, being Medical Officer for the Blind, Deaf and Dumb Asylums and to Wesley College. In 1911, he was also president of the Victorian Branch of the British

Medical Association, founder of the Medical Agency and Medical Insurance Company, foundation member of the Royal Australian College of Surgeons, Trustee of the Medical Society of Victoria, co-founder and Director of the Australasian Medical Publishing Company, Director of the British Medical Insurance Company in Victoria. He became a F.R.A.C.S. in 1927 and held an M.D. from the University of Edinburgh and from Melbourne University.

Dr Fetherston not only followed his father's footsteps into medicine, but also into politics and the army. Dr Fetherston Jnr. was a member of the local council and elected M.L.A. in 1921, but retired in 1924 after finding politics was not for him. In 1887 Dr Fetherston became a Captain in the Victorian Militia, by 1915 he was a Colonel and later became Director General of Medical Services, where he made a great contribution to the medical care of the Australian Imperial Forces until his retirement in 1918, after World War I ended. During this period, he did some of his best work in the Gallipoli Campaign and in France.

Upon his return to Australia from Europe, Dr Fetherston acquired a vineyard near the lake at Rutherglen. Eventually he sold the vineyard to Fred Bright and Co., of Melbourne.

In 1943 Dr Fetherston died at his home "Derwent", located in St Kilda Road, Melbourne.

Drs Gerald and Bertie Fetherston are now remembered by the triennial R H Fetherston Memorial Lecture at the University of Melbourne on some facet of Maternal Welfare.

DR HARKIN

Chiltern in Victoria is situated on the Hume Highway running between Sydney and Melbourne (locally known as the Melbourne Road). Its importance as a wine producing area has always been in the shadow of its more famous and larger wine producing neighbour to the west – Rutherglen. Chiltern was not only a service centre on the Melbourne Road, but also the centre of a gold mining industry. When the gold ran out in 1911, it was necessary to find an alternative industry to keep the town alive, so a group of local business men, led by the local GP Dr Harkin, established the Chiltern Vineyard Co. in 1913. Later, Dr Harkin bought out the others and kept the vineyard going until he, in turn, sold it to Mr Roscoe H Gayfer in 1948, when it became known as Gayfer's Vineyard.

Dr Charles Fitzmaurice Harkin was born at Bright in 1866, the only son of Henry Harkin, who was a local Police Officer and later Police Sergeant at Wodonga. After schooling at Wodonga and Albury, he studied medicine at Dublin University, where he won the surgical prize in his day, though he left most of his surgical work from his Chiltern practice to be done by his friend in Rutherglen, the famous surgeon and wine maker, Sir John Harris.

After practising in Albury for a short time upon his return from Ireland, Dr Harkin bought out the practice of Dr Walter in Chiltern in 1890, which was situated in the historic house "Lakeview". "Lakeview" is now owned and restored by the Victorian

Branch of the National Trust, in remembrance of the authoress “Henry Handel Richardson”, who lived at “Lakeview” as a young girl.

In 1892, Dr Harkin purchased the house in Main Street owned by James Moore, the local blacksmith. In 1897 he renovated it and added a new brick surgery, waiting room and one other room for his medical practice.

Other activities pursued by Dr Harkin, other than medicine and wine making, included golf and tennis. He was the first President of the Chiltern Rifle Club in 1891, a Justice of the Peace in 1898, a Shire Councillor 1894-1900 and Shire President 1896-1897 and 1899-1900, a Director of several of the local gold mines, President of the Viticultural Association and Victorian Representative of the overseas Wine Marketing Board. He had the first car in Chiltern, a Stanley Steamer.

Dr Harkin’s son, Charles, was also a Chiltern Shire Councillor from 1935-1938.

The Chiltern Vineyard Company was located on 96 acres of land on the south side of the Hume Highway, west of the Old Chiltern Cemetery. The property was later expanded to 150 acres and in 1922, the cellar building was moved to the vineyard from the Chiltern Valley Gold Mine No. 3.

The vineyard made a rich burgundy-style red wine from black Shiraz grapes, which was used widely as a treatment for anaemia. The famous agency of Burgoyne imported Dr Harkin’s wines into England, where they were promoted as a cure for anaemia as late as

the 1930's. Dr Harkin delivered into the world Keith Gayfer, the current owner of the vineyard, over seventy years ago.

Dr Harkin's wife, Emily Elizabeth, died late in 1948 and was buried in Chiltern's new cemetery on the 27th November 1948. Dr Harkin was buried there on the 29th September 1950. Today he is remembered by a display of his surgical instruments at "Lakeview" and by a street in Chiltern named after him.

DR GRAEME BERTUCH OF "CATHCART RIDGE ESTATE"

Graeme Bertuch was born in Melbourne in 1947 and graduated from Monash University in 1971. He is a country GP who bought 40 acres in 1976 at Cathcart, out of Ararat, between Mt. Ararat and Mt. Chalambar. The cooler climate at Cathcart, due to its altitude of 350 metres, resembles that of Bordeaux, hence the classic Bordeaux reds of Cabernet Sauvignon and Merlot have been planted, with small areas of Cabernet Franc, Riesling and Chardonnay. Total area planted equals 4.5 hectares. Shiraz grapes are bought in from Bruce Dalkin's "Westgate" Vineyard in the hills at Rhymney.

The winery was built in 1981 and has a capacity of 60-80 tonnes. With the help of wine making consultant, Trevor Mast, Dr Bertuch was the "hands-on" wine maker, having attended courses at Wagga College and learning from the expertise of others in the Great Western Area.

Dr Bertuch made good quality reds with an annual production of 1900 cases, but eventually he sold out and now the Farnhill family owns the property, with a production of 10,000 cases per year.

DR ROGER BUCKLE OF “TUCK’S RIDGE”

Dr Robert Buckle is a psychiatrist, who gained his basic medical degree from Melbourne University in 1961. Later he obtained a Diploma in Psychiatric Medicine also from Melbourne University in 1966, followed by his Fellowship F.R.A.N.Z.C.P. He was a lecturer at Monash University between 1970 and 1981.

His love of wine led him to the Mornington Peninsula, where in 1990 he was President of the Mornington Peninsula Vignerons Association. He owned the original Red Hill Estate, but later sold out so that his vineyard is now part of the Tuck’s Ridge vineyard and the name Red Hill is now associated with the neighbouring vineyard owned by Sir Peter Denham.

DR LEONARD HUGH CATCHLOVE OF “MT. PRIOR”

Dr Leonard Hugh Catchlove graduated M.B.B.S. from Melbourne University in 1941, then became a Surgeon Lieutenant in the R.A.N.R. during World War II, from 1942 to 1946. After completing this service, he began his chosen career as a Radiologist, gaining his D.D.R.Melb. in 1947 and F.R.A.C.R. 1957. He became a radiologist at Royal Melbourne Hospital, then Frankston Community Hospital, Dandenong and

District Hospital and Sandringham Hospital. After his move to the country, his latest appointment was at the Wangaratta and District Base Hospital.

In 1974 Dr Catchlove bought Mt. Prior, the 176 hectare vineyard and cellars on Howlong Road, 14 kilometres east of Rutherglen in Victoria, which was established in 1874 by Alexander Caughey. The red brick homestead was built in 1884. After his death, his son, Henry, had to watch the devastation of the vineyard by phylloxera at the turn of the 20th Century, followed by the destruction of the cellars by fire in 1908. After this, the property became a general farm and the homestead fell into disrepair.

Henry Caughey sold in 1923 to Mr Nesbitt, who still owned the property when Dr Catchlove bought it in 1974. Dr Catchlove was kept busy restoring the homestead, including rebuilding the tower and renovating the interior. He also rebuilt the cellars and replanted the vineyard. The old cellar walls were incorporated in the new cellars.

In 1975/76, six hectares of vines were planted, followed by six hectares every year until a total of 40 hectares were under vine. Vine varieties planted included Carignan, Grenache, Cabernet Sauvignon, Cabernet Franc, Malbec, Durif, Shiraz, Chardonnay, Traminer and Chenin Blanc.

In December 1988, Mt. Prior was sold at auction to a border grazier.

DR ALAN CUTHBERTSON OF “MURRINDINI”

Dr Alan Cuthbertson is a retired colorectal surgeon from Melbourne, who established the Murrindini vineyard, which is between the Yarra Valley and Macedon. According to James Halliday, it is in a very cool climate, which means that special care has to be taken with the viticulture to produce ripe fruit flavours. In more recent vintages, Murrindini has succeeded handsomely in doing so.

Dr Cuthbertson gained his medical degree at Melbourne University and later gained a Master of Surgery, along with his fellowships – F.R.C.S., F.R.A.C.S., F.A.C.S. He bought his land in 1970 and planted 2 acres of Chardonnay, 2 acres of Cabernet Sauvignon and 1 acre of Merlot in 1979. In 1982 he planted a further 3 acres of Cabernet Sauvignon and 1 acre each of Cabernet Franc and Sauvignon Blanc. Running the vineyard and the winemaking is a family affair and 2000 cases of Chardonnay and Cabernet blend are produced each year.

DR JOHN GRIFFITHS OF “ST HELENA”

Dr John Griffiths was born in Melbourne in 1929. He graduated from Melbourne University in 1955 and trained as an O&G, gaining his F.R.C.O.G., F.A.G.O. and F.R.A.C.O.G.

In 1981 he bought a 60 acre property at Sulky, outside Ballarat, which had a vineyard called St Helena, already planted on it. The 5 acre vineyard was planted between 1971

and 1974, with Cabernet Sauvignon, Riesling, Rose Croix and Charreuais. Dr Griffiths kept the vineyard going by selling his grapes to a Mildara winery.

DR MAX HANKIN OF “HANKIN ESTATE”

Dr Maxwell Hankin is a GP who gained his medical degree at Melbourne University in 1958 and trained at the Alfred Hospital, Royal Children’s Hospital and Royal Women’s Hospital in Melbourne.

The Fitzpatrick family, Melbourne liquor wholesalers, planted large areas of red grapes at Northwood in the 1960’s. Northwood is a small settlement in the Goulburn Valley, between Seymour and Nagambie. This well-established wine country is home to such famous vineyards as Chateau Tahbilk and Michelton. When the 1960’s red wine boom went bust, the Fitzpatrick family had to sell up and in 1975, Dr Hankin bought a block.

In 1977 he started to make his own wines from quite a large range of grapes. Production is small at 1700 cases and includes the following wine styles – Semillon, Verdelho, Rose, Shiraz, a Shiraz-Cabernet-Malbec blend and Cabernet Sauvignon-Merlot.

DR DAVID LESLIE OF “TURRAMURRA ESTATE”

Dr David Leslie is another medico in the Mornington Peninsula area. Born in Auckland, New Zealand, he gained his medical degree M.B.Ch.B. at Otago University and did his time in Wellington Public hospital, then Royal Melbourne and Royal

Women's, also in Melbourne. Dr Leslie trained as a pathologist, obtaining the following higher qualifications – Dip.Bact.(Lond), F.R.C.P.A., F.R.C.Path (UK).

In 1988, he and his wife Paula, bought 70 acres at Dromana and planted 7 acres of Chardonnay the following year to start their vineyard. In all, the full Vineyard area is now 26 acres, with plantings of Cabernet Sauvignon, Cabernet Franc, Merlot, Pinot Noir, Shiraz, Sauvignon Blanc and more Chardonnay.

Dr Leslie is one of the few doctors to also become a fully qualified wine maker, having passed his Bachelor of Applied Science in Wine Science degree at the Charles Sturt University in Wagga Wagga. Current production is 6000 cases.

DR CLIVE LEVIS

Dr Clive Dentis Levis is a semi-retired surgeon, who grows grapes and makes wine at Wyung via Bairnsdale in Victoria.

Dr Levis graduated B.A., M.B., B.Ch., B.A.O.T.C. from Dublin in 1950 and specialised in surgery, gaining his F.R.C.S.Eng. in 1957 and F.R.A.C.S. in 1959.

DR JONATHAN LOWTHER OF “THE ELAN VINEYARD”

Dr Jonathan Lowther is a GP, who is a partner with his wife Selma in the very small Elan vineyard on the Mornington Peninsula. Selma is the qualified wine maker, from Charles Sturt University at Wagga Wagga. Dr Lowther gained his M.Med.Sc., from

Monash University in 1979, followed by his M.B.B.S. in 1981, Dip.S.M. in 1984 and Dip.R.A.C.O.G. in 1985. He is now a local GP, who helps at the 2.5 hectare Elan vineyard, which is made up of Chardonnay, Shiraz, Cabernet and Merlot. Production is tiny at 400 cases per annum, made by Selma.

DR FREDERICK MAIR OF "COALVILLE WINERY"

Frederick Ernest Stewart Mair was born in Melbourne in 1940 and graduated M.B.B.S. from Melbourne University in 1964. He trained at the La Trobe Valley Hospital at Moe and now has his vineyard (in partnership with his photographer wife, Mavis) in the Moe area. Dr Mair later gained his F.R.A.C.P. and became a Consultant General Physician at Moe.

In 1972 5 acres were purchased on Moe South Road to establish the vineyard. More adjacent land was purchased for a further 3 acre extension. In 1975, 2¹/₂ acres of Cabernet Sauvignon were planted and in 1984 a further 1¹/₂ acres of Cabernet Sauvignon were planted. Also, small areas of Cabernet Franc and Merlot have been planted. Dr and Mrs Mair have the only vineyard in the area and hope to encourage further plantings in the La Trobe Valley. The coal fields of the La Trobe Valley seems an unlikely place for a vineyard, but the Hunter Valley in New South Wales is also one large coal field as well.

The small vintage was processed by Stephen Hickenbotham at Arakie in 1983, 1984 and 1985, while Downy Mildew destroyed the 1986 crop. Ken Eckersley at Nicholson

Winery made the 1987 wine. In June 1987, a winery was built and future vintages were produced using a contracted wine maker.

Dr Mair has sold out to Peter Beasley, who has increased production to 3,000 cases.

DR GORDON McINTOSH “PARISH WINES” OF “BRIAGOLONG ESTATE”

Dr Gordon Edward McIntosh was born in Melbourne in 1939, graduating M.B.B.S. from Melbourne University in 1963. Dr McIntosh “found most of the available good wines lacking” and had an interest in wine making, so he decided to establish his own vineyard and make his own wine. Dissatisfaction with the way medicine is heading and his mid-life crises also helped precipitate action.

In 1974 Dr McIntosh bought 40 acres at Briagolong (the name of the local Aboriginal tribe and also means “land of the rising sun”) at Maffra, in the Gippsland district. Initial plantings commenced in 1975, with subsequent plantings in 1980 and 1983. In all, 2 hectares of Pinot Noir and Chardonnay have been planted, with a trial area of Sauvignon Blanc.

The winery was built in 1980, with current production runs of 400 cases. Dr McIntosh’s only oenological training has been by attending short courses at Wagga Wagga.

DR RICHARD LOVELL McINTRYE OF “MOOROODUC ESTATE”

Dr McIntyre is a surgeon, who was inspired to establish his vineyard in the Mornington Peninsula by his surgery tutor, Professor Watts, who now owns part of the new Fox Creek Vineyard in South Australia.

Dr McIntyre graduated from Monash University in 1969 and trained at Prince Henry's Hospital. He completed his surgical training (F.R.A.C.S.) in 1976 and followed this with a D.Phil. (Oxon) in 1979.

In 1982, 20 acres of land was purchased at Moorooduc on the Mornington Peninsula. The following year 2.5 hectares of Chardonnay and 2 acres of Cabernet Sauvignon were planted, along with small parcels of Cabernet Franc and Pinot Noir. In 1985 some Merlot was planted, followed by more Pinot Noir in 1987. Today, 12.5 acres of vines in total have been planted, with more Chardonnay and new plantings of Shiraz, Sauvignon Blanc and Semillon going in.

The 25 ton capacity winery was built on the vineyard in 1986. A feature of this building is its rammed earth wall construction. From this winery comes 4,600 cases of excellent quality Chardonnay, Pinot Noir and Cabernet Sauvignon wines.

DR PETER McMAHON OF “SEVILLE ESTATE”

Dr Peter Givan McMahon was born in 1925 in Melbourne. He graduated M.B.B.S. in 1947 from Melbourne University and became a GP in the Lilydale area just outside Melbourne, where his father had also been a GP. Dr McMahon spent his whole life in the Yarra Valley, so it was natural for him to become interested in viticulture since the Yarra Valley has always been famous for its wine. A Swiss Italian migrant encouraged Dr McMahon to plant vines at his home in Lilydale in 1962. By 1970 Dr McMahon and Mrs McMahon had decided “that our future was in viticulture”.

So they purchased 30 acres of land at Seville and began planting a 3.6 hectare vineyard in 1972, consisting of Cabernet Sauvignon, Cabernet Franc, Merlot, Pinot Noir, Shiraz, Chardonnay and Riesling. The winery was built in 1974, with extensions in 1983 and has a capacity of 30 tonnes.

Dr McMahon has attended the Wagga Quality Control Course and visited France, Germany and California. This experience has been supplemented by technical courses and much reading to complete his oenological training. Dr McMahon retired from medicine in 1980 to concentrate on his wine making. Currently his vineyard produces approximately 1,500 cases of wine, the most famous of which are his sweet desert wines made from Riesling grapes affected by the “Noble Rot” *Botrytis cinerea*. The grapes have to be picked very late when they are very ripe and full of sugar (25° Baume). Because of this ripeness, the grapes have become a favourite delicacy of the local birds. To discourage their attentions, Dr McMahon covers his vines with a fine net and has “scantily dressed mannequin scarecrows” also to protect the grapes. The

resultant Beerenauslese and Trockenbeerenauslese desert wines are unique, magnificent classics.

Unfortunately, Dr McMahon will no longer be making any more Botrytis affected wines, concentrating on his other wine styles instead.

In 1997, Brokenwood, from the Lower Hunter Valley, bought control of Seville Estate.

DR TONY MICELI OF "MICELI"

Dr Tony Miceli graduated with his medical degree from Melbourne University in 1984. He was an intern at the Repatriation General Hospital at Heidelberg and followed that with residency work at Frankston Hospital, where he gained his Dip. R.A.C.O.G. Now he is a GP at Hastings and lives on his vineyard at Main Ridge on the Mornington Peninsula.

In 1991 4 acres of Pinot Noir and Chardonnay were planted at the vineyard and just recently, Dr Miceli completed the wine making course at the Charles Sturt University at Wagga Wagga. The limited Miceli supply of 2,000 cases is sold cellar door and includes an unwooded Chardonnay.

DR JOHN MIDDLETON OF "MT. MARY"

Dr John William Dyer Middleton was born in 1924 in Melbourne and after graduating M.B.B.S. from Melbourne University in 1951 and training at the Royal Melbourne

Hospital, he went into General Practice at the Lilydale Medical Clinic with another future vigneron, Dr Peter McMahon of Seville Estate and two others.

During World War II, Dr Middleton served in the R.A.A.F. with Ian Kilpatrick of the “Allandale” property in the Great Western area of Victoria. During leave there, they visited Seppelts Great Western winery and cellars, where they met the famous wine maker, Colin Preece. It was Colin Preece who encouraged Dr Middleton’s interest in wine and his later planting in the Yarra Valley.

Lilydale is in the Yarra Valley near Melbourne, which had a thriving wine industry up until 1921. In 1957, when Dr Middleton planted a small experimental vineyard just 5 kilometres south of his present Mount Mary vineyard, he was the first to reintroduce vines to the Yarra Valley. The subsequent wines were encouraging, so in 1971, Dr Middleton and his wife, Marli, bought a 72 hectare property nearby called Mount Mary. The old homestead, dating from the 1880’s, was restored and the barn was converted into a winery. Most of the land is used to graze Angus cattle, but 5.5 hectares were planted with Cabernet Sauvignon, Cabernet Franc, Merlot, Malbec, Petit Verdot, Chardonnay and Pinot Noir. In 1982 an additional 3 hectares of Sauvignon, Semillon and Muscatel were planted.

In the initial plantings, Dr Middleton was the first in Australia to plant all the classic Bordeaux grape varieties to make his superb “Cabernet” style blended reds and his excellent Chardonnay and Pinot Noir. The 1982 plantings make a “Sauvignon” style blended white.

The winery contains much modern equipment and is kept scrupulously clean by Dr Middleton, who will not tolerate any form of contamination that could harm his wines. Dr Middleton is a self taught viticulturist and oenologist.

The production is very variable, being between 2,000 and 3,000 cases and is much sought after, being sold mainly by mail order. The blended Cabernets are legendary and have been compared to Chateau Lafite in Bordeaux.

PROFESSOR TREFOR OWEN MORGAN

Professor Trefor Morgan is a highly qualified renal physician of Welsh descent, who owns a small vineyard at Mt Charlie Road, Riddells Creek, near Mt Macedon. He gained a B.Sc.Med.(Hons) from Sydney University in 1958, then his medical degree in 1960, followed in 1972 by his M.D., also from Sydney University and his F.R.A.C.P. He did his training at Sydney's Royal Prince Alfred Hospital, before becoming a Professor at the University of Newcastle from 1977 to 1981. In 1984 he was appointed a Professor at Melbourne University and worked at the Repatriation Hospital, Heidelberg.

Professor Morgan's vineyard was planted in 1988 and comprises 2.5 hectares of Chardonnay, Sauvignon Blanc, Shiraz and Merlot varieties, which are sold under the Mount Charlie label. First vintage was in 1991 and production runs at 2,500 bottles of Chardonnay and 2,500 bottles of Merlot-Shiraz.

DR JAMES MUNRO OF “MOUNT IDA VINEYARD”

Dr James Alexander Munro was born in the Melbourne suburb of Carlton in 1927. He graduated with a B.Sc. from Melbourne University in 1950, then gained a M.B.B.S. in 1958. Later he trained to become a pathologist.

In 1976 Dr Munro, in conjunction with his good friend and noted Australian artist, Leonard French, bought 20 acres of rich red volcanic soil at the base of Mt Ida, in the Heathcote district of Victoria. Four thousand five hundred Shiraz vines were planted in 1976 and a further 200 in 1978. Four thousand Cabernet Sauvignon were planted in 1977, with a further 100 in 1978. Also in 1978, 300 Riesling and 300 Chardonnay were planted. Mt Ida uses no irrigation and an air current around the base of Mt Ida protects the vineyard from frost.

There is no winery at Mt Ida, rather, Dr Munro and Leonard French initially used the services of John Ellis, wine maker at Tisdall Wines, then Jeff Clarke, also a wine maker at Tisdall Winery. They have won a great reputation for Mt Ida red wines by winning the Trophy for Best Red Table Wine in Open Class at the Seymour Victorian Wine Show in 1983 and 1986. production runs at 2,000 cases per year, but after severe damage to the vineyard during the 1987 Heathcote bushfires, the next few vintages had only a limited supply and Mt Ida was sold to Tisdall's.

French says, art and wine go together “they are things which nicely come together” and that he can grow good fruit because he has “a beautiful piece of dirt”.

Leonard French designed the label, which features a symbolic turtle with three fish swimming under it. These symbols, are French's trademark – he believes the turtle symbolises the association with the “land” and the fish stand for “creativity”.

Mount Ida is now owned by Beringer Blass.

DR BERNHARD OSTBERG OF “HEYFIELD HOMESTEAD”

Bernhard Nils Ostberg was born in Melbourne in 1919 and graduated M.B.B.S. from Melbourne University in 1943. After working at Launceston General Hospital and at Oxford in England, he became a General Practitioner.

In 1982 “Heyfield Homestead”, a 169 acre property in Heyfield, Victoria, was purchased. Dr Ostberg's son-in-law now runs the property, but Dr Ostberg has set aside some land for a vineyard. In 1982 1 acre of Sauvignon Blanc was planted and a hayshed has been adapted to make a winery. The first vintage was in 1985, when 200 bottles were made. No crop was picked in 1986 and 1987, but 500 bottles were made in 1988.

Dr Ostberg has studied wineries in France, South Africa and California, but has had no formal viticultural or oenological training.

A quote from Dr Ostberg in his response to my Wine Doctor Questionnaire: “...A wine making friend of mine told me he changed from doctor to vigneron because his vines survived all his malpractice and they never sued him!”.

DR RON PARKER OF “LONG VIEW CREEK VINEYARD”

Dr Ron Parker is an ophthalmologist at Sunbury, who has completed the Viticulture course at the Charles Sturt University at Wagga so that he can properly tend the vines on his vineyard called Long View Creek, whilst a neighbour, David Hodgson, does the wine making in the small winery on the property.

Dr Parker gained his M.B.B.S. in 1961 from Melbourne University, followed by a D.O. and later he became a F.R.A.C.O. In 1986 he bought 45 acres of land at Sunbury, which is 400 metres high so only suitable for cool climate varieties. In 1988 Pinot Noir was planted, followed by Cabernet Franc in 1989, Chenin Blanc in 1990 and Cabernet Sauvignon and some Shiraz in 1995. All in all 5 hectares of vines have been planted out. The Chenin Blanc has turned out to be a real winner, being very suitable to the cool climate. Dr Parker says he can't make enough of that wine.

1992 saw the boutique winery made, with a production of 700 cases. The aim is for the winery to have a capacity of 30 tons. Another unusual feature of Long View Creek, besides the Chenin Blanc, is the variety Charango, a blend of Chardonnay and the CSIRO bred Tarrango variety.

DR HUGH ROBINSON OF “MORNINGTON VINEYARDS”

Dr Hugh Robinson is a Scot who graduated from the medical school at Glasgow University in 1967. Dr Robinson then trained as an obstetrician/gynaecologist, gaining

his M.D., F.R.O.C.G. and F.R.A.C.O.G., before gaining his D.D.U. and going exclusively into diagnostic ultrasound practice.

In 1985 Dr Robinson bought land on Moorooduc Road on the Mornington Peninsula and planted 3 acres each of Chardonnay and Pinot Noir in 1988 to start his vineyard. Currently 1000 cases of Chardonnay and Pinot Noir are made using Kevin McCarthy as contract wine maker.

DR WAYNE STOTT OF “WILDWOOD VINEYARD”

Dr Wayne Glenn Stott was born in 1944 in Melbourne and graduated M.B.B.S. from Melbourne University in 1968. After training at Royal Melbourne Hospital, he did plastic surgery in Miami, USA and hard surgery in Louisville, USA. In 1973 he became F.R.C.S. in General Surgery and a F.R.A.C.S. in Plastic Surgery in 1975. He now specialises in Reconstructive Plastic Surgery and hand surgery.

In 1980 Dr Stott bought 200 acres at Wildwood, Bulla in Victoria. The property was called “Busby Park” and the vineyard became known as Wildwood Vineyards, after the area. In 1983 8 acres of Cabernet Sauvignon, Merlot and Cabernet Franc were planted at Busby Park. In 1988 a further 2 acres was planted, this time with Pinot Noir. Also in 1983, 10 acres of Chardonnay was planted at Cairnbrae, the neighbouring property of Dr Stott’s lawyer partner, Norman Sheehan. 1987 saw the first small vintage.

In 1988 the partnership was dissolved, when Norman Sheehan retired to Queensland, leaving Dr Stott sole owner of Wildwood.

Also in 1988, Dr Stott completed his B.App.Sc.(Oen.) from the R.M.I.H.E. and the winery was completed at “Busby Park” with a capacity of 100 tonnes.

Dr Stewart Mair of Coalville Vineyard, Moe and Mr P Carmody of Craiglea Vineyard, Sunbury, influenced Dr Stott to try viticulture, plus the fact that the area produced excellent wines last century before its demise early in the 20th Century.

Today 2000 cases are made each year, comprising a Chardonnay, a Pinot Noir, a Shiraz, Cabernets and a Merlot-Cabernet Franc blend.

DR PETER TISDALL OF “TISDALL WINES”

Dr Peter Thomas Tisdall was born in 1939 in Launceston, northern Tasmania. He graduated M.B.B.S. from Melbourne University in 1963 and trained at Royal Children’s Hospital and Mercy Hospital, Tasmania.

Dr Tisdall and his wife, Diana, live at Kyabram, about 40 kilometres south-east of Echuca in northern Victoria, where he practises medicine. They also developed a nearby grazing property, breed Clydesdale horses and made cheese at the Echuca cheese factory.

In 1971 the Tisdalls established an 80 hectare vineyard called “Rosbercon” at Picola, 20 kilometres south-east of Echuca, where they grew the bulk fruit for the Tisdall label. Once this was in production, the Tisdalls began searching for an area suitable for

premium fruit production. In 1976 they purchased an 80 hectare property in the Strathbogie Ranges of central Victoria and called it “Mount Helen”.

Forty hectares of Chardonnay, Pinot Noir, Rhine Riesling, Sauvignon Blanc and Traminer were planted. To complete the picture, the Tisdall’s Echuca cheese factory was converted into the winery in 1978 and John Ellis, the 1971 Roseworthy College Dux and man responsible for Rosemount’s great success, was brought in as wine maker, commencing his duties also in 1978. The winery processes over 1000 tonnes of fruit each vintage, with sales of nearly 100,000 cases per year.

The next development was of an economy range of wines called the Hopwood Estate range, named after Henry Hopwood, an early Echuca pioneer. So there now is an economy range called Hopwood Estate, the normal commercial range called Tisdall Wines and the premium range called Mount Helen. Exceptional wines are reserved for the “Chairman’s Selection” range of wines.

Dr Tisdall has continued the tradition of Australia’s medicos, introducing new technologies or new areas to the wine industry. He has pioneered a totally new wine growing area in Victoria (Strathbogie Ranges) – not a rediscovered wine area that grew grapes during the 19th Century, but a totally new area, which had never before grown grapes. Dr Tisdall has also been one of the pioneers in new wine styles such as the Fume Blanc style of wine made from 100% Sauvignon Blanc or a 100% Merlot, which is an Australian leader of the genre. Tisdall Wines has become expert in thermovinification, resulting in wines of brilliant colour and low tannin content. Temperature-controlled wood storage is also used.

As one can see, Dr Tisdall was not afraid to be innovative, the hallmark of an intelligent doctor. Unfortunately, Dr Tisdall over-extended himself developing a tourist complex at Echuca and was taken over by Mildara Blass.

DR PETER WALLIS OF “FLINDER’S RIDGE”

Dr Peter Wallis is a pathologist who works with Dr Leslie of Turramurra Estate, in their Melbourne pathology practice. He gained his basic medical degree from Melbourne University in 1972 and became a pathologist, gaining his F.R.C.P.A. in 1978. Dr Wallis later specialised as a histopathologist/cytologist with a M.I.A.C.

Dr Wallis’ 50 acre property is on Musk Creek Road at Main Ridge, on the Mornington Peninsula. In 1992, 5 acres of Chardonnay were planted, followed in 1995 by 8 acres of a mixture of Pinot Noir, Pinot Gris and an unusual Spanish red grape variety similar to Cabernet Sauvignon called “Tempranillo”. Eventually, 20 to 22 acres of vines will be planted, with the fruit being sold to the innovative nearby winery T’Gallant, which is making a name for itself with their Pinot Gris.

Dr Wallis has completed some TAFE wine making courses, but there is yet no plan to put out wines under the Flinder’s Ridge label.

DR IAN WHEATLEY

Dr Ian Wheatley is a general surgeon who also has a vineyard on the Mornington Peninsula. Dr Wheatley followed his basic medical degree from Melbourne University in 1966 with his F.R.A.C.S. in 1972.

Dr Wheatley's 10 acre vineyard comprises 6 acres of Chardonnay and 2 acres each of Pinot Noir and Sauvignon Blanc. The fruit is sold to the nearby T'Gallant winery.

Dr Wheatley has completed the Wagga wine course, more out of interest than as the start of a career change, because he doesn't plan to start making wine and is happy being a surgeon. Out of interest and aesthetics, he and his wife also grow a few acres of daffodils on their property.

TASMANIA

Tasmania was first discovered by Europeans on the 24th November 1642, when the Dutch explorer, Abel Tasman, first sighted the west coast. Later the French explorer Marion du Fresne sighted Tasmania in 1772 and 1792 and in 1793, his fellow countrymen, navigators Bruri d'Entrecasteaux and Huon de Kermadec, explored the south-east and discovered the Derwent River.

Fearing French colonial aspirations in the region, the English explored the island in 1773 with Captain Tobias Furneaux, in 1777 with Captain James Cook, in 1788 with Captain Bligh and in 1789 with Captain Cox.

The first settlement did not occur until Lieutenant John Bowen established his colony in September 1803 at Risdon Cove on the Derwent River with 10 soldiers, 21 male and 3 female convicts. Later David Collins sailed directly from England to establish his colony at Hobart in February 1804 with 358 men, 39 women and 36 children, of whom 279 men and 2 women were convicts. On the 15th October 1804, Lieutenant Colonel William Paterson sailed from Sydney with 67 soldiers, 74 convicts and 40 free settlers to establish a settlement in the north of Tasmania at Georgetown on the 11th November 1804. In 1823 Bartholomew Broughton established the first vineyard in Tasmania at Prospect Farm, New Town. According to Dr Shewin, his wine was better than Gregory Blaxland's. In 1828 the vineyard was taken over by Captain Swanston.

Tasmania was the vine nursery for the early Victorian and South Australian vineyard industries. In 1834 William Henty took vines from Launceston to Victoria, in 1837 John Hack and in 1838 John Reynell took vines from Port Arthur to South Australia.

By the end of the 1860's, the Tasmanian wine industry had demised due to a reduced demand for table wines and a government policy forbidding the production of the more profitable brandy and fortified wines, due to the influence of the temperance lobby. The gold rush of the 1850's meant that there were no labourers to tend the vineyards and poor viticultural techniques, such as inferior sprays, also contributed to the downfall of the Tasmanian wine industry.

After World War II viticulture was recommenced with Claudio Alcorso of Moorilla Estate in Hobart planting in 1960 and Graham Wiltshire of Heemskerk vineyard planting in the north of Tasmania at Pipers Brook, 35 kilometres north of Launceston in 1966.

Many doctors have now joined the growing band of vigneron in Tasmania, a practice originally started by Dr Gaunt at Windermere in the Tamar Valley in 1844.

DR GAUNT

After Dr Gaunt graduated in medicine, he spent some time in South America before returning to practice in London. Because of his dislike for the English climate, Dr Matthias Gaunt sailed from London on the 28th August 1839 for Tasmania (then known as Van Diemen's Land) with his wife Frances and five sons on the 342 ton ship "Eliza",

arriving in Hobart town on the 2nd May 1831. He received a grant of 2560 acres on the east bank of the Tamar River. Later he received a further grant of 1280 acres and called the property “Windermere”. In his application for a land grant dated the 4th May 1831, Dr Gaunt stated that he was 36 years old, from Yorkshire and had capital of 2,313 pounds, 19 shillings and one penny.

Before leaving England, Dr Gaunt had promised his wife that if there was no Church near their new home, he would build one. Consequently, Dr Gaunt gave the land and paid the balance necessary for the construction of St Matthias’ Church of England at Windermere. Other funds included 60 pounds from local subscriptions and 40 pounds from the Society for the Promotion of Christian Knowledge. Building began in 1842 and was completed in 1843, with the Archdeacon of Launceston, the Rev. W M Browne, conducting the opening service in November 1843. Dr Gaunt was appointed the Chaplain’s Churchwarden. As another display of his Christian background, Dr Gaunt was a staunch opponent of the transportation of convicts to Tasmania. He petitioned the Governor and high officials, he aided various religious bodies, who were opposed to the moral pollution of the transportation and supported the Anti-Transportation League. Dr Gaunt was also a member of the standing committee of Church of England schools in Launceston.

Windermere was Dr Gaunt’s main interest. Here he built the Union Steam Saw Mills by 1839. This was converted into a flour mill in 1844. His other main interest at Windermere was his vineyard. To quote from Dr Gaunt’s obituary, which appeared in the Launceston Examiner on the 12th May 1874 “...Thirty years ago he commenced the

cultivation of grapes and from his vineyard some very superior wine is annually produced”.

His flour was well known and won a first prize at the Great Exhibition held in London in 1851. By 1853 Dr Gaunt transferred the Windermere property and flour mill to his sons and moved to Launceston, where he “entered into the flour and grain trade”. Here he owned the Union Flour Mills.

During his years in Launceston, Dr Gaunt was a Director of the Commercial Bank in Launceston, a Director of the Cornwall Fire and Marine Insurance Company, a Warden of the Marine Board and on the committee of Christ College.

On the 10th May 1874, in his 80th year, Dr Gaunt died in Launceston and was survived by his widow, five sons and three daughters.

DR MICHAEL BEAMISH OF “GLENGARRY” AND “NOTLEY GORGE”

Launceston pathologist, Dr Michael Beamish, started his involvement in Tasmania’s emerging wine industry by being a partner in the Glengarry Vineyard. Eventually, he bought out his partners and then expanded by buying the nearby Notley Gorge Vineyard in December 1994.

Dr Beamish graduated from the Birmingham Medical School in 1964, then trained as a clinical pathologist, gaining his F.R.C.P.A. and F.R.C. Path.; and is now in practice in

Launceston. He has also been doing a four year viticultural diploma as an external student at the Wagga Wagga campus of the Charles Sturt University.

The 12 hectare Glengarry property was bought in 1989 and was planted with 4 hectares of Pinot Noir and 1.5 hectares of Cabernet Sauvignon. The vineyard is being extended with new plantings of Chardonnay (1.5 hectares), Sauvignon Blanc and Pinot Gris.

Production at Glengarry is small at 600 cases of Pinot Noir and Cabernet Sauvignon, with Chardonnay coming on stream later; the wine being made by Tamar Valley Wines at the Heemskerk winery.

The Notley Gorge vineyard has a larger production than Glengarry, at 1800 cases and a greater variety of wine styles including Sauvignon Blanc, Chardonnay, Pinot Noir, Cabernet Sauvignon and Cabernet Merlot from 4 hectares, with Andrew Hoad of Wellington Hoad Wines making the wines.

DR DONALD C BODEN OF “REBECCA”

Dr Donald Campbell Boden was born in Brisbane in 1933. After graduating M.B.B.S. from the University of Queensland in 1959, he trained in Australia and Britain to become an Obstetrician and Gynaecologist. He became a M.R.C.O.G. in 1966, then later a F.R.C.O.G. In 1974 he gained his F.A.G.O., and in 1979 his F.R.A.C.O.G. Today Dr Boden is a Specialist Gynaecologist at the Launceston General Hospital and the Queen Victoria Hospital in Launceston.

In 1986 Dr Boden bought 10 acres in Rosevears Drive, Rosevears, in the Tamar Valley. Later he purchased the adjacent block of land owned by local plastic surgeon Dr Boyle, bringing his total acreage to 160. The vineyard has been called the Rebecca Vineyard after John Batman's boat, Rebecca, which was built not far from the vineyard. It was in Rebecca that John Batman sailed from the Tamar River to establish Melbourne.

In 1986, 2¹/₂ acres of Gamay grapes were planted. These have been subsequently uprooted because Dr Boden is going to concentrate on Chardonnay and Pinot Noir, with lesser plantings of Cabernet Sauvignon and Merlot. So far 10 hectares have been planted with a further 10 hectares planted in 1988 and every year after that until a total of 50 hectares is planted.

It was envisaged that the grapes from Rebecca vineyard would be sold to the Heemskerk Winery nearby, but the vineyard was bought out by Pipers Brook in 1994.

DRS JIM CARTLEDGE AND DAMIEN HOPE OF "MEADOWBANK"

Hobart Paediatric Surgeon, Dr Jim Cartledge and pathologist, Dr Damien Hope, are partners with Gerald Ellis in the Meadowbank vineyard. The Ellis family own the 3,900 hectare property called Meadowbank, which is located 60 kilometres upstream from Hobart on the slopes of the Derwent Valley. The vineyard was developed separately from the rest of the Meadowbank property, which produces peppermint and parsley oils, as well as superfine merino wool.

The initial plantings were of Cabernet Sauvignon and Riesling in 1974. Since then, four hectares each of Pinot Noir and Chardonnay have been planted, along with some experimental plantings of Semillon, Gamay, Merlot and Shiraz. In 1990 the winery was built, with Ian Holmes being the winemaker. Now, former Norman's wine maker, Greg O'Keefe, with the assistance of Gerald Ellis, makes the 2,000 cases of wine each vintage.

In 1986 Dr Jim Cartledge invested in the established Meadowbank vineyard, followed by Dr Damien Hope. Dr Cartledge graduated from the Melbourne University Medical School in 1958, then trained in the United Kingdom, where he gained his F.R.C.S. With his F.R.A.C.S, Dr Cartledge now practices paediatric surgery at the Royal Hobart Hospital and has been doing a four year Roseworthy Wine making course as an external student. Dr Damien Hope gained his M.B.B.S. Tas. in 1972, followed by his F.R.C.P.A. in 1979 and trained at Royal Hobart Hospital. He is now a pathologist in Hobart.

Wine styles made at Meadowbank include Cabernet Sauvignon, Riesling, Shiraz, Chardonnay and Pinot Noir.

The vineyard is now owned by the Ellis family.

DR STEPHEN HYDE OF "ROTHERHYTHE"

Stephen James Hyde was born in New Zealand in 1949. He graduated in 1972 from Otago University and later gained his F.R.A.N.Z.C.P. to become a Consultant

Psychiatrist. His viticultural and oenological knowledge has been gained from experience with local growers and wine makers.

In 1985 Dr Hyde bought 10.5 acres at Gravelly Beach in northern Tasmania and named his vineyard “Rotherhythe”, which was the original name for the Gravelly Beach area.

In 1986 he planted 2.5 acres of Chardonnay, 4 acres of Pinot Noir and 4 acres of Cabernet Sauvignon, Merlot and Cabernet Franc.

Dr Hyde finds his medical work demanding, hence requires some outlet that requires “different skills” to psychiatry. The vineyard also provides a means of involving his family in a worthwhile ongoing rural activity.

Current production is 1,600 cases.

DR SUNDSTRUP OF “DALRYMPLE VINEYARDS”

Dr Bertel Sundstrup was born in 1931 in Wondai, Queensland, He graduated M.B.B.S. from Sydney University in 1956 and trained at Royal North Shore Hospital, Royal Hobart Hospital and Launceston General as an oncologist. He became M.R.A.C.R. in 1972, F.R.C.R. in 1977, F.R.A.C.R. in 1980 and is now an oncologist in Launceston.

In August 1986 Dr Sundstrup bought 70 acres at Pipers Brook in northern Tasmania, next to the famous Pipers Brook Vineyard of Andrew Pirie. October 1987 saw 1 acre of Pinot Noir rootling planted. Later much more Pinot Noir and Chardonnay, with some Cabernet Sauvignon and Merlot planted.

The vineyard is called “Dalrymple” after Port Dalrymple, an estuary of the Tamar River, only a few miles away and after the town in Queensland where Dr Sundstrup’s school was moved to in 1942, when the army took over his original school “All Souls” of Charters Towers, as a hospital.

Dr Sundstrup has no formal training in the wine industry, but has helped his father-in-law, who was “one of the amateur vine growers in the Tamar Valley in the early 1970’s”. Dominique Portet of Taltarni vineyards is giving his expert guidance and will use Dr Sundstrup’s Pinot Noir and Chardonnay to make sparkling wine in the future.

Current production is 4,500 cases.

SMALLER TASMANIAN WINE DOCTOR VINEYARDS

The following group of wine doctors are either financial “silent” partners in the vineyard or have small vineyards or vineyards that are not fully commercial or vineyards that don’t have a label of their own.

Wellington Hood Wines

Andrew Hood is the wine maker at Wellington Hood Wines in Cambridge, near Hobart. With the financial backing of “silent” partners, Drs Ian Stewart and Graeme Riddoch, Andrew Hood sources fruit from local grape growers to make his Chardonnay, Pinot Noir, Cabernet and Rhine Riesling under the Wellington Hood label.

Dr Graeme Riddoch is distantly related to John Riddoch of South Australia's Coonawarra district fame. He now has a Family Planning practice in Hobart, after moving to Tasmania in 1975. Dr Riddoch gained his M.B.B.S. from London in 1970, followed in 1972 by his Obst. R.C.O.G. and F.P.A. Cert; D.A. in 1975, F.R.A.C.G.P. in 1979 and Dip. R.A.C.O.G. in 1980.

Dr Ian Stewart is a Paediatrician in Hobart, gaining his M.B.B.S. Tas. in 1972 and F.R.A.C.P. in 1979.

Craigow

The Craigow vineyard is owned by Dr Barry Edwards, a general surgeon in Hobart. Dr Edwards gained his M.B.B.S. at Sydney University in 1965, followed by his F.R.C.S. London in 1969, his F.R.A.C.S. in 1971 and eventually he became a F.A.C.S. He trained in Glasgow and at the Royal Prince Alfred Hospital in Sydney, before moving to Hobart. Dr Edwards is also involved in the Royal Australian College of Surgeons Road Trauma committee.

Craigow is a 190 acre property situated on Richmond Road at Cambridge, outside Hobart. The plan is to eventually have 25 acres of Pinot Noir and Traminer planted, using a very expensive and complex trellising system to maximise sunlight exposure in this southern cool climate area. Currently the grapes are sold to a local wine maker and 500 cases are made.

Tree House Wines

Tree House Wines is the name of the small vineyard owned by Hobart General Practitioner, Dr Margaret Smith and her plant virologist husband, Dr Gadon Johnstone. Dr Smith gained a B.Sc. Tas. 1969, M.B.B.S. Tas. in 1974 and became a F.R.A.C.P. in 1978, after training at the Royal Hobart Hospital.

The Tree House label's first wines were released from the 1995 vintage. The 1 hectare vineyard is planted to Pinot Noir, Cabernet Sauvignon, Chardonnay and Rhine Riesling – all classic cool climate varieties. In 1995 2¹/₂ tons of fruit were picked, with maximum production being 700 cases, assuming 4 tons of fruit to the acre and 70 cases of wine per ton. Andrew Hood is the wine maker at nearby Wellington Hood Wines, also in Cambridge, just outside Hobart.

Lake Barrington Estate

The late Obstetrician-Gynaecologist, Dr Roger Taylor, developed the Lake Barrington Estate vineyard near Devonport. Andrew Hood makes the wines. Dr Taylor gained his M.B.B.S. in Queensland in 1960, followed by his M.R.C.O.G. in 1968, his F.R.A.C.O.G. in 1981 and his F.R.C.O.G. in 1985.

Oyster Cove

Dr Jean Syme is a GP working part time in Tasmania. She gained her M.B.Ch.B. from Glasgow in 1972, followed by her D.Obst. from Auckland in 1974. After training at the

Glasgow Royal Infirmary, Dr Syme worked as a General Practitioner in Kalgoorlie in Western Australia in 1975 and 1976. This work was followed interestingly by Dr Syme being the Medical Officer from 1976 to 1979, for the Antarctic Division at Macquarie. Dr Syme and her husband Rod Ledingham, developed a small vineyard called Oyster Cove with Andrew Hood again making the wine. Jean and Rod Ledingham now own Oyster Cove.

Bream Creek

Dr Robert Ware is a partner in the Bream Creek vineyard, along with Moorilla Estate's vineyard manager, Fred Peacock. The wines are made under contract by Julian Alcorso at Moorilla Estate. Styles of wine include Chardonnay, Cabernet Sauvignon, Pinot Noir and Riesling. The latter, according to Australia's leading wine writer James Halliday, is the best to date. Dr Ware gained his M.B.B.S. from Sydney University in 1978 and followed with his F.C.P.R.S.A. in 1982. He currently specialises in Nuclear Medicine in Hobart and is developing another vineyard at Mt Rumney on Hobart's eastern shore.

Woodlands

Not to be confused with the small Woodlands vineyard in Western Australia, this Tasmanian version is backed by a group of doctors. They planted 10 of the 90 acres on the property with mainly Pinot Noir and Chardonnay and some Cabernet Sauvignon, in 1989 and 1990. The vineyard is located on Tea Tree Road, near Richmond, but is not yet producing commercially, preferring to sell the fruit each vintage.

Obstetrician-Gynaecologist, Dr Bill Watkins, along with Physician, Dr Nick Petrovsky, Pathologist Dr Richard von Watt, Casualty Physician Dr Peter Sexton and Hobart GP, Dr Annette Douglas, make up the partnership. Dr Bill Watkins is the son of Hobart Obstetrician-Gynaecologist, Dr Rodney Watkins, who has a share in the Pipers Brook vineyard to the north.

QUEENSLAND

The Queensland coast was first sighted by Captain James Cook in 1770, but it wasn't until 1824 that the first settlement was established. This was a Penal Settlement at Moreton Bay, which continued as such until 1842.

Inland exploration followed with Oxley, Major Edmund Lockyer, Captain Logan and Alan Cunningham, being at the forefront. In 1840, convict transportation ceased and pastoral occupation of the rich Darling Downs region occurred. Ludwig Leichhardt explored north Queensland overland and in 1848 Queensland had developed to such an extent that it was granted independence from New South Wales on 6th June.

One of Queensland's first vineyards, "Romavilla", was established by Samuel Bassett at Roma in 1863. Bassett had come from Cornwall at age 16 in 1856 to work for his uncle at East Maitland. It was from his uncle's property that he acquired his first vine cuttings. By the late 1890's "Romavilla" had 180 hectares of vines and was not affected by the phylloxera epidemic that was destroying vines in Victoria and New South Wales at that time, hence it thrived. William had been taught by Leo Buring and continued in charge of Romavilla until his death in 1973.

The only other vine area of Queensland is known as the "Granite Belt". This area of granite-based soil centred around Stanthorpe, near the New South Wales border, is a well-known stone fruit area. In 1872 Thomas Fletcher first planted vines in the area, but they didn't thrive. It was only after an Italian born Roman Catholic Priest named Father David planted a small vineyard in 1878 and encouraged the other Italian migrants to

follow suit, that viticulture took off in the area. Table grapes were the grapes grown and wine was made from them. In 1965 the area was redeveloped, when the first wine grape vines were planted. The Granite Belt is now a well-established wine area due to its high altitude effect.

DR BRIAN SPROULE OF “ROMA VILLA”

Dr Brian Creighton Sproule was born in 1929 in Sydney. In 1954 he graduated M.B.B.S. from Sydney University. He later did his residency at Royal Prince Alfred Hospital and then trained at Royal Alexandra Hospital for Children.

Dr Sproule later became a Fellow of the Royal Society of Medicine in London and is now a General Practitioner in Sydney.

In 1975 a syndicate of Sydney businessmen headed by Dr Brian Sproule purchased the “Roma Villa” winery and vineyard to prevent it from going out of production, after the death in 1973 of the last of the Bassett family, who founded the business.

In 1863 Samuel Bassett founded Roma Villa at Roma, 450 kilometres north west of Brisbane with vines from his uncle’s property in the Hunter Valley. When Samuel’s son William took over in 1912, the vineyard covered over 180 hectares – an indication of how great a success the venture had become. William had been taught by Australia’s greatest wine maker, Leo Buring, and made highly sought after wine. Upon his death in 1973, it seemed “Roma Villa” may go out of production, but this was not to be the case due to Dr Sproule’s intervention.

Dr Sproule has been actively involved with the International Wine and Food Society for many years and has been the President of the Society in Australia.

David Wall now owns Roma Villa.

WESTERN AUSTRALIA

Western Australia was possibly first sighted by the Portuguese explorer Meneses in 1527, but it was left to the Dutch explorers making their way to the rich East Indies, to really first explore the Western Australian coastline. Dirk Hartog in 1616 reported a barren, sterile land with little profit to be made from trade or agriculture with the poor Aborigines. William de Vlamingh in 1696, described a similar picture and the Dutch Government discouraged further exploration as not worthwhile.

The English appeared on the scene next, with William Dampier describing the inhospitable coastline when he sailed in the “Cygnet” in 1688 and as Captain of HMS “Roebuck” in 1699.

French exploration began with de Bougainville in 1769, St Alouarn in 1772 and D’Entre Casteaux in 1792, but when French interest increased in the early 1800’s with Baudin in 1801-03 and Freycinet in 1817, exploring the west coast, English fears of French colonisation interests were aroused.

For strategic reasons, to prevent French settlement of the West, and not for economic development reasons, the British Government decided to settle the western half of Australia. On the 25th December 1826, Major Edmund Lockyer founded a settlement at King George’s Sound. On the 2nd May 1828, Captain Fremantle of HMS “Challenger”, took formal possession of Western Australia and awaited the arrival of Captain James Stirling and his colonists from England. Stirling arrived on the 1st June 1829 to form Perth further upstream on the Swan River, from where Fremantle was staying at the

mouth of the Swan River and proclaimed the Colony on the 18th June 1829. Perth was named after the city represented by the Secretary of the Colonies, Sir George Murray, in the House of Commons.

Charles McFauld planted the first vineyard in Western Australia near Hamilton Hill in Perth. Thomas Waters was the next. He was a botanist, who had left England with Stirling on the “Parmelia” and brought vine cuttings with him. He first planted in Perth where the Perth International Airport is now located. Later he planted vines on his 20 hectare grant at Guildford, further up the Swan River. This later vineyard is now known as Olive Farm vineyard.

In 1840 John Septimus Roe, Western Australia’s first Surveyor General, planted at Caversham, further upstream on the Swan River from Waters. Today the vineyard is known as Sandalford. In 1856 Dr Ferguson established Houghton’s winery in the Middle Swan area.

The move away from the Swan River occurred in 1890, when Ephrain Clarke planted his vineyard in the northern edge of today’s Margaret River area. The 1890’s gold rush and the post World War I period saw many European migrants, mainly Yugoslav, come to Western Australia. They increased the viticultural areas. In the mid 1960’s, new areas at Margaret River and later Mt Barker and Frankland were opened up. The Margaret River area was mainly developed by doctors, as will be shown later in this chapter.

DR FERGUSON

Houghton vineyard is situated on the banks of the Swan River, in the middle of the Swan Valley, near Perth. The vineyard was part of a larger grant of 8,000 acres made soon after white settlement in Western Australia in 1829, to Mr Rivette Henry Bland. In the early 1830's the property was bought by a syndicate of three British servicemen stationed in India. This syndicate was headed by the senior ranking officer, Colonel Houghton, and consisted of two others, namely Thomas Yule and Lowis.

Colonel Houghton never set foot in Australia, but Thomas Yule was despatched to look after the syndicate's interests as Resident Manager. During this time, in 1833, the first vines were planted using cuttings from South Africa. This period of time also corresponded with an economic recession and the property was consequently subdivided.

In 1859 Dr John Ferguson purchased Houghton, which by then had reduced in size to a 322 acre property, for 350 pounds. Dr John Ferguson was born at Dundee, Scotland, in 1802 and in 1822 obtained his M.R.C.S. from the Edinburgh College. From 1828 to 1835 he practised at Auchtermuchty, Fife. Times must have been hard, for in 1842, Dr Ferguson, his wife Isobella and their two children, migrated to Western Australia on board the "Trusty", arriving on the 6th December 1842. He worked as a doctor, was made a Magistrate in 1843 and became Colonel Surgeon in 1847.

Dr Ferguson must have been a good doctor, not only in his ability to keep up to date, but also in his clinical diagnoses. In 1849 he amputated an Aboriginal's leg using

chloroform as the anaesthetic, only six months after its trialing in England. He claimed to being the first person in the infant colony to use anaesthetic. In August 1852 he warned the Colonial Secretary of an outbreak of whooping cough on board the Anna Robertson, which would have had a grave effect on the Aborigines. By enforcing strict quarantining he drastically reduced the number of deaths.

Other positions held by Dr Ferguson whilst Colonial Surgeon included being medical officer in 1852 for a convict road party building the Perth to Fremantle Road, a member of the Central Vaccination Board in 1861, immigration agent and medical officer for the Perth Poorhouse in 1867.

Dr Ferguson believed in the health-giving qualities of wine and began to develop his new acquisition of Houghton after he bought it in 1859. As there were only a few vines on it when he bought it, which only made 25 gallons of wine during its first commercial vintage in 1859, Dr Ferguson began to plant out his vineyard. At this time, he relied on wheat for most of his income from the property and planted an orchard as well as a vineyard. Eventually it was the vineyard which began to dominate.

Initial plantings were 4 acres of Verdelho, 2 acres of "Galops Large" Verdo and White Sauvignon. This was followed by 4 acres of Verdelho, Muscat, Gordo and Hermitage, followed by a further 1½ acres of Hermitage.

In 1863 the homestead was built and 2 years later, 1½ acres of Malbec, Pedro, Grenache, Mataro, Carignane and Fontainbleau were planted. By 1866 15 acres had been planted.

Dr Ferguson, by now, began to rely more and more on his son Charles William (1847-1940) to help manage the property. In 1863 Dr Ferguson bought “Strelley”, an adjoining property for 500 pounds. Now he had 572 acres to develop and Charles William was sent to manage “Strelley”.

As stated earlier, only 25 gallons of wine was made in the first vintage. In order to keep the cask full during fermentation, Dr Ferguson washed pebbles from a nearby creek and placed them in the cask to take up space, hence fill the cask. C W Ferguson continues the story: “...It was my job for many days after to drop in more pebbles (to make good the loss from evaporation) and to test the progress of fermentation by holding a lighted match at the bung hole, the fumes extinguishing it quickly at first: but when half a dozen matches burned to one’s finger in succession, fermentation was deemed to have ceased” (38).

In 1869 Charles was involved in the capture of Moondyne Joe, Joseph Bolitho Johns (1827-1900), who was Western Australia’s best-known bushranger and prison escapee.

“On February 25, 1869, when I was living at Upper Swan, I had been to Perth on business, and just after returning home I received a message stating that a man had been drowned in the river and requesting me to notify the police at Guildford. I did so, and two mounted troopers were despatched to undertake the dragging of the river at the spot where it was believed the man had been drowned. The troopers were assisted by about a dozen other men but it was not until about 1 o’clock the next morning that the body was recovered and taken by the police to the man’s home. I had been one of the searchers,

and invited the police officers and others to come across to the cellars at the Houghton Vineyards, which I owned, and have a drink of wine, as we were all very wet and cold.

Unknown to us at the time, another man, Moondyne Joe, had selected that very night to force an entry to my wine cellars....

In anticipation of the plunder he expected to carry away with him from the cellars, he had cut a hole in the centre of a wheat sack and fitted it over his head. In each end of the sack he had a two gallon keg, one in front and one in the back. He had covered his boots with sheep skins to disguise his tracks. In a small canvas bag around his neck were six skeleton keys, a brass tap, a dark lantern, and a waddy made from a piece of York gum, about 2 ft long.

It was unfortunate for Moondyne that he arrived at the cellars not long before the police search party, at my invitation, also arrived....

One of my men was carrying a large jug, and we commenced to walk towards a cask of which was on tap. We had only gone a few yards from the door when there was an unearthly yell and the tall figure of a man, with hair streaming over his shoulders and looking extremely weird, with the contrivance he carried over his head and shoulders, sprang out of the darkness. He made a tremendous blow at me with his waddy, which just grazed my shoulder, made a second plunge at the man who was carrying the jar, and dashed past us towards the door straight into the arms of the police officers and the other men who were following. The cellar had been plunged into darkness, as the candle had dropped from my hand, and my man had also dropped his jug. I confess that

I was scared for the moment as, I think, most men would have been in similar circumstances, and was relieved when I got outside to find that my attacker had been captured by the police, and was sitting on the ground securely handcuffed. No one at first recognised the intruder, and then some one called out, “Why, its Moondyne.”

“Yes”, replied the prisoner, “you have got me at last”.

Moondyne coolly asked me to give him a drink as he had not had time to get one for himself. He had, he declared, just put the tap he had brought with him into the cask when he heard voices outside, and was afraid that his arrival had been noticed and that he would have to fight his way out. He said he was sorry he had struck me as he had no ill-will towards me...” (39).

In 1875 Dr Ferguson transferred ownership of his vineyard to his son Charles William. In August 1879 he retired on a pension of 216 pounds per annum. On the 11th September 1883 at the age of 81 he died and was later buried at the East Perth cemetery.

Under Charles William, Houghtons expanded until it was a major international wine company.

In 1950 the Emu Wine Company bought Houghtons from the Ferguson family descendants. In 1976 Thomas Hardy and Sons (started by Dr Alexander Kelly) takes control of the Emu Wine Company and thus Houghtons.

DR ALFRED WAYLEN OF “DARLINGTON VINEYARD”

Dr Alfred Robert Waylen was Western Australia's first “home grown” medical practitioner, having been born at Point Walter in Western Australia in 1833. His parents had arrived in Western Australia on the “Skerne” in 1830 and his father, Alfred Waylen, was also a doctor. In 1841, at the age of 8, he was sent to England for his education. In 1856 he gained his Licentiate of the Society of Apothecaries and his Membership of the Royal College of Surgeons with a Licentiate in midwifery. In 1857 he briefly returned to Perth before returning to Britain to attend St Andrew's University in Scotland, where he gained his M.D. in 1858.

He again returned to Perth, but this time to settle permanently as the Colonial Medical Officer for the Swan District, based at Guildford, in 1859. He was also surgeon to the convict establishment locally. On the 11th January 1870 Dr Waylen was appointed to the Medical Board and in 1872 he succeeded Western Australia's only other colonial “wine doctor”, Dr John Ferguson, as Colonial Surgeon for all of Western Australia, which also included being Director of the Colonial Hospital, Medical Officer of the Perth Prison and Superintendent of Vaccination.

Dr Waylen's main interests in the sphere of public health were improvements to sanitation, infant mortality and Aboriginal health. Between 1883 and 1884 he was Chairman of a Royal Commission into the welfare of Aboriginals, especially on Rottnest Island. Later he was Chairman of the new Aboriginal Protection Board, formed in 1886. In 1884 and 1885 he was Chairman of a Royal Commission on Perth's water supply and sewerage problems.

Australia's Commonwealth Department of Health Director General and famous medical historian, Dr J H L Cumpston wrote the following short paper on Dr Waylen in the July, 1923 edition of "Health" – a monthly journal on health put out by the Commonwealth Department of Health. It summarises Dr Waylen's contribution to Western Australia's Public Health and is entitled "A Public Health Pioneer in Western Australia".

"There is a regrettable tendency in these times, when every day is expected to bring some new sensation, and when the medical world is mostly concerned with new discoveries, to forget the patient workers of past years, who, often without great knowledge, saw the necessity for certain reforms, and persisted until they achieved some measure of success. It is, therefore, a pleasant task to recall the work of some of these men. Such a pioneer was Alfred Robert Waylen, Doctor of Medicine, who was "Colonial Surgeon" in Western Australia from some date (not ascertained) prior to 1876, was appointed first President of the Central Board of Health on 29th November, 1886, and retired from that position in 1895.

Dr Waylen, in his capacity as Colonial Surgeon, presented to the Government a series of annual reports on "The Public Health of the Colony" each year from 1875 to 1880, and these reports, which were printed and thus preserved, form a valuable source of information concerning conditions in those times.

The following quotation from the report for the year 1877 illustrates both the defects and the virtues of Dr Waylen's career:

“The subject of fever in its various forms has hitherto occupied a prominent position – in Perth more particularly – inasmuch as it was intimately connected with the very insanitary arrangements of the city. The general type of fever prevailing in Fremantle and the southern districts has been the simple and continued, but in Busselton several cases of enteric or typhoid fever have occurred; these have been traceable, in the first-named town, to defective water supply and sewage contamination; from the same causes there has been a case reported from Newcastle as resembling typhoid. It would appear that many of the towns of the colony are in quite as unsatisfactory a state as Perth so far as sanitation is concerned, and much has to be done before fever in its various types ceases to be endemic.”

Dr Waylen cannot be said to have been a highly scientific man. The confusion as to the identity of typhoid fever, at a time when the nature of the disease become fully recognised, indicates a certain lack of familiarity with the progress of medical knowledge. Even in 1890, the report contains this statement:-

“There were 189 admissions to the Colonial Hospital, Perth – there were ten admissions for fever, one case proving fatal; they were all of the continued form, and wanted the characteristics of true enteric fever.”

Notwithstanding this lack of knowledge of the latest medical progress, Dr Waylen devoted himself for twenty years to two purposes – reducing the infantile mortality, and improving general sanitation.

In the report for 1876 he says:-

“Of 146 children who died under the age of five years, 105 died in extreme infancy or under the age of one year; this, I believe, is attributable in a great measure to an insufficient supply of breast milk, and supplementing this insufficiency by a too highly farinaceous food; this latter cause is a fertile source of the many cases of convulsions and disorders of the alimentary canal which go to swell the rate of infantile mortality, and which might to a great extent be obviated by substituting milk, fresh if procurable, or preserved, diluted in such proportions as to approach as nearly as possible to the natural food of the infant.”

This theme was pursued year by year in various forms, and we find Dr Waylen, thirteen years later (1889) still persisting:-

“The marked diminution in infantile mortality, which was at the rate of 123 per 1,000, as against 156 per 1,000 in the previous year, is a matter for congratulation, attributable possibly to two causes – the infrequent presence of zymotic disease in the various districts, and, we may hope, the greater care and intelligence brought to bear on the rearing of those infants who, from want of their natural sustenance, have to be brought up by hand. There remains, however, much to be done in still further diminishing the number of deaths, which is in excess of that of many of the large towns in England.”

In respect of pollution of soil and water, Dr Waylen never rested from his warnings; and, in this matter, he had more success than in his infantile mortality campaign, if we may judge by the figures just quoted. The quotation from the report of 1877 given

above states clearly his attitude at the outset. He kept on with his task: - "The citizens do not, apparently, see the necessity of securing themselves from the ills attendant on noxious effluvia and soakage from cesspits." (1879). "Little or nothing has been done in the city towards attaining that state of sanitary efficiency which might, with a little determination, be arrived at" (1881).

In 1882 Dr Waylen wrote in his annual report:-

"In Perth nothing definite has been arrived at as to what is to be done with the sewage. It is now some seven or eight years since attention was drawn to this subject, and every succeeding year it has been commented on without any practical result. An indisposition to increase the rates on household property would appear to be the great hindrance to its adoption, but the difficulty must be met sooner or later. These remarks apply with equal force to Fremantle, where the contamination of the wells from organic matter is notorious, producing diarrhoea, dysentery and other ailments."

The Governor of the Colony, Sir William Robinson, wrote an official comment on this report:-

"I am glad that the Colonial Surgeon has again called attention to the want of any proper system of sewage disposal in the two chief towns of the Colony. The question has been before the public since 1875, and yet, as Dr Waylen now reminds us, nothing effectual has been done. The necessary powers are vested by law in the municipal councils, and the municipal councils alone, and therefore, with them will rest the

responsibility if they fail to enforce such measures of sanitation as may be necessary for the preservation of the public health.”

This official vice-regal support had a definite effect in arousing the Government to action, for, in 1884, a Select Committee, and subsequently a Royal Commission, was appointed. The Commission included Dr Waylen and eight other members, and, very fittingly, Dr Waylen was Chairman of the Commission. This Commission recommended very strongly in favour of a proper system of night-soil collection and disposal, and other sanitary measures, and also legal and administrative changes. Ultimately, arising directly from the report of this Commission, there was introduced by the first Health Act (1886) a proper system, including the creation of a Central Board of Health, local Boards of Health, and a compulsory system of sanitation. It was an appropriate reward for his persistent efforts that Dr Waylen should have been the first President of the Central Board of Health, which, under his direction, firmly established the foundations of modern sanitation in Western Australia. This record of a successful pursuit of a definite objective calls to mind the similar cases of Edwin Chadwick in England, and Lemuel Shattuck in America. In all three cases patient perseverance on the subject of sanitation led first to the appointment of a Commission, then to the establishment of a permanent rational system of sanitation. In these days of bacillary or endocrinic lightning cures for everything, these examples of the successful pursuit of a continuing purpose provide a salutary reminder and a wholesome encouragement” (40).

As you can see, what he lacked in knowledge, he made up in enthusiasm and it was this that led him to push for some very useful reforms.

Dr Waylen became prominent in the Guildford District to the west of Perth. He was Chairman of the Guildford Town Council, Churchwarden of St Matthew's Church, a founder of the Guildford Mechanics' Institute and a Governor of the Perth High School.

He also had an interest in race horses, being a race horse owner and a West Australian Turf Club committee member.

On the 20th November 1862 he married Elizabeth Louisa Hardey and on the 2nd June 1887, he married Louisa Walpole, but unfortunately never had any children.

Dr Waylen's other main interest besides Public Health was viticulture. The following quote from Ian Elliott's book "Mundaring: a History of the Shire" describes Dr Waylen's Darlington Vineyard and his subsequent involvement with Mr Amherst:-

"In 1862 he married a cousin of vigneron R W Hardey and later established the 'Garden Hill' vineyard near Guildford. He joined R W Hardey in selecting vineyard land in the hills although he made his permanent home at Guildford. The good doctor became one of the earliest commuters on the Eastern line. 'The first halt on the blue mountains', a reporter noted in April 1884, 'was for the spirited proprietor of the Darlington Estate, who has been most fortunate in his selection of a charming slope in the range which faces the rising sun, and which Dr Waylen is having laid out as a vineyard'.

At that time Waylen owned three blocks at Darlington, Swan Location 951 north of the line and Swan Locations 952 and 953 on the south side. In 1885, in anticipation of increased settlement following the opening of the Eastern Railway, twenty-one

suburban allotments had been laid out both east and west of Waylen's Darlington Vineyard. These lay on either side of the line and extended eastwards as far as Smiths Mill, but no immediate rush of selectors appeared. Waylen made steady progress with clearing and vine planting, travelling up to the property regularly by train to supervise his workmen. With a few years the vineyard seemed assured of success so Waylen decided to expand his undertaking. The *West Australian* of 31st March 1886 carried the following advertisement:

Darlington Vineyard

The well-known property belonging to A. R. Waylen Esq., M.D., consists of 150 acres freehold, being amongst one of the first sections of the Eastern Railway line and especially selected for vine growing by the owner.

Improvements consisting of 24 acres planted with choice vines, 3 roomed cottage, stable and 30 acre paddock fenced with sheep-proof fence of which 4 acres are cleared. The vineyard has been thoroughly cleared and fenced with wire netting, barbed wires and mahogany posts. The vines comprise Burgundy, Fontenableau [*sic*] and Shiraz for red wine – Sweetwaters, Pedro and Riesling for white wine. The supply of permanent water is from three wells and any quantity can be obtained by shallow sinking. The greater portion of the Darlington soil is suitable for fruit growing. The present plant consists of horse, cart, scarifier and all necessary tools. At the suggestion of one or two friends, Dr. Waylen has decided, in order to increase the present area under vines and extend operations, to open a share list upon the following terms – Present capital to be 20 shares of £150 each, of which Dr. Waylen receives (fully paid up) 10 shares to

recompense him for his outlay (about £1200) and for supervision and goodwill to date, say £300 or 2 shares. There are therefore only 10 shares to dispose of and upon the amount of these shares (£1500) having been expended in increasing the area of planted vines, wages and other improvements, Dr. Waylen is prepared, if necessary, either to go halves in future expenditure, or concur in a further issue of shares and so increasing the concern.

The Garden Hill wine, so long and extensively known, made on Dr. Waylen's Guildford vineyard is sufficient guarantee to the probable value of the improvements completed, and Dr. Waylen is, for the present, prepared to undertake the supervision of the continued work at Darlington. Any gentleman, therefore, who may have faith in the coming demand and necessity of supplying Western Australian Wines will please communicate with the undersigned.

It is proposed to only issue 10 shares more of £150 each, payable as follows - £10 on allotment, and balance in calls at not less than intervals of one month of £10 per share.

As agents we can only say that the above affords men of capital a good opportunity of getting a share in a good vineyard property, one in which most of the pioneering has already been done.

Distance from Perth by train to Darlington, about 16 miles. For further particulars apply to Morrison and Crossland.'

This lengthy advertisement attracted the attention of a distinguished newcomer to the colony, the Hon. Josceline G.H. Amherst. Amherst was the fifth son and eight child of William Pitt Amherst, Earl of Aracon in the West Indies, Viscount Holmesdale of Holmesdale, Kent, and Baron Amherst of Montreal, Kent. His mother, Gertrude, was the sixth daughter of the Rt. Rev. Hugh Percy, Bishop of Carlisle, third son of the first Earl of Beverley and grandson to the first Duke of Northumberland. Born at Kent in 1846, the owner of this impressive pedigree was educated at Cambridge University and became a barrister. He came to Western Australia with Governor Broome in 1885 as His Excellency's private secretary and also acted as Clerk to the executive Council. Sometime during the late 1880s he and Waylen became partners so that, when Governor Broome completed his term of office and left the colony, Amherst remained, ensconced on the hills property as a gentleman vigneron.

Waylen was the first to apply for one of the eastern Railway allotments adjacent to the vineyard, and had purchased Lot 71 (re-numbered Swan Location 1191) in October 1886. Amherst was granted a moiety on this block, which lay on the north side of the railway line, and it was there that he built the grand stone house named 'Holmesdale' after one of the Amherst family estates. Although this 'blue blood' rode and shot on his hills estate like the English aristocrat he was, he was far from foppish and his interest in viticulture was genuine and intense. At one time he was President of the Royal Agricultural Society, which held its annual show at Guildford in those days. For a number of years too, he was President of the Swan Vine and Fruit Growers' Association, a body that proved to be of considerable assistance with practical advice to early local orchardists as they struggled with unfamiliar conditions" (41).

Unfortunately the Darlington Vineyard met the same fate as all the other “hills’ vineyards, which are now all gone. They were planted on the upper hill slopes in the European way, but lacked the good rainfall of the European wine areas. The lack of summer rain meant the vines thrived during winter, but shrivelled and dried during the long dry summer. The vineyards on the low-lying areas were watered during summer from rivers or dams.

Dr Waylen died on the 10th January 1901 at Guildford and was buried in the Church of England cemetery.

KEVIN CULLEN OF “CULLENS”

Kevin Cullen was born in 1922 at Bunbury, Western Australia. His grandfather had previously set up one of the best vineyards at Bunbury. After graduating from Melbourne University in 1946, Dr Cullen did post-graduate training in Edinburgh Royal Infirmary, eventually gaining his F.R.C.P.Ed. in 1972. He also became an M.D. at the University of Western Australia in 1963 and later gained his F.R.A.C.P.

Dr Cullen spent 1964 in the United States of America doing a Research Fellowship, which prepared him for his great ongoing epidemiological study, which was to continue for the rest of his life; namely the Busselton Population Study, which he commenced in 1966.

In 1971 Dr Cullen and his wife, Diana, purchased 52 acres in the Margaret River area, after Dr John Gladstone of the Agricultural Department recommended in 1966 that the

Margaret River area would make world class wines. Kevin and Di were planning for their retirement.

The winery was built in 1975, with a maximum capacity of 8000 cases of wine. The wine making was shared by Kevin and Di until 1981 when Di took over the control. Now she has the help of her formally oenologically trained daughter, Yanya.

At present the range of wines includes Cabernet, Merlot, Chardonnay, Sauvignon Blanc, Semillon, Pinot Noir, Rhine Riesling, Fume Cabernet, Spaltese Cabernet, Sauterne from a 33 hectare vineyard.

Cullen's winery has been innovative in the Margaret River area in that they have introduced Sauvignon Blanc, produced a late picked Sauvignon Blanc (Sauterne style) and use Merlot to blend with Cabernet. The Cullen wine name is now synonymous with the best quality wine from the Margaret River area.

Dr Cullen was a family doctor in Busselton, a country town in the Margaret River vineyard area south of Perth.

Busselton's residents have been extensively studied by Dr Cullen's Busselton Population Study, which is Australia's major epidemiological study, akin to the Framingham Study in the USA. This long-term community study has resulted in many benefits. Its population screening has given Australian-based benchmarks for many different physiological and blood related parameters. Its risk factor data on many metabolic and cardiovascular diseases has seen the first successful community

intervention studies in the prevention of our society's commonest killer – vascular disease. The Busselton Study was also the first study ever in the world to show the beneficial effects of consuming alcohol in moderation in women.

Dr Cullen was an internationally known and respected researcher and epidemiologist, who was made a member of the Order of Australia on Australia Day in 1994 for his services to the Busselton region and to the Wine Industry. This was after he had been given the honour of receiving the Inaugural A.M.A. Award for best individual contribution to health-care by a doctor, in 1993. Unfortunately, Dr Cullen died an untimely death from Lower Motor Neurone Disease on the 9th February 1994.

DR TOM CULLITY OF “VASSE FELIX”

Tom Cullity was born in 1925 in Port Adelaide and graduated from Adelaide University in 1947. He trained as a Cardiologist in Melbourne, Perth and the National Heart Hospital, London, gaining his F.R.C.P. (London) and F.R.A.C.P.

Without any formal viticultural or oenological training he purchased 26 acres (18 of which are under vine) in 1966, after Dr John Gladstone of the Agricultural Department recommended the Margaret River area for viticulture. Dr Cullity was the first of the now many Margaret River area “wine doctors” and the first to plant, again in the cool South West Australian region.

The vineyard consisted of Cabernet Sauvignon 8¹/₂ acres, Rhine Riesling 8 acres, Hermitage ¹/₂ acre, Verdelho ¹/₂ acre and Malbec ¹/₂ acre. The winery was built in 1967

and has a capacity of 72 tonnes – approximately 5000 gallons red and 3000 gallons white.

Alexander David Gregg and his wife took over Vasse Felix in 1979. The name Vasse Felix is derived from two words. Monsieur Vasse was a character in the early history of the district, who helped develop the area before going bush or drowning (depending on whose story you hear). Felix is Latin for “happy” or “in a state of contentment”. Hence, Vasse Felix means happy Monsieur Vasse.

Janet Holmes a Court now owns the 125,000 case business.

DR CRAIG DRUMMOND OF “WHISPERING HILL”

Dr Craig Linton Drummond was born in Perth, Western Australia in 1951. Initially Dr Drummond studied Medical Technology, gaining his Bachelor of Applied Science in 1971. Later he studied medicine, becoming a M.B.B.S. in 1980 from the University of Western Australia, then qualifying for his Diploma of Obstetrics (R.A.C.O.G.).

As in common with most “Wine Doctors”, Dr Drummond has had no formal training in viticulture or oenology. Dr Drummond has a great love of wine and finds viticulture and wine making “the perfect marriage of agriculture and science”. To be in a wine region Dr Drummond commenced practice in Mt Barker in 1985 in a two-doctor rural general practice.

Initially Dr Drummond and his wife Carolyn became partners in a 20 acre vineyard called “Chatsfield”, some 12 kilometres from Mt Barker. The other partners in the vineyard were Ron Waterman (viticulturist) and Dr Ken Lynch (an Albany GP). The varieties grown at Chatsfield were Rhine Riesling, Traminer, Shiraz, Chardonnay and some Cabernet Franc. In 1988, 2000 cases were produced. In 1989, Dr Lynch (discussed in more detail elsewhere), bought out his partners and now solely owns “Chatsfield”. Dr Drummond gained valuable experience from being associated with Dr Lynch.

In July 1986, Dr Drummond became a foundation partner in a new vineyard called “Whispering Hill”. The other partners were Ron Waterman and Dr Peter Pratten, owner of “Capel Vale” Winery. The “Whispering Hill” vineyard is located next to “Chatsfield” and is to be a fruit source, not an actual wine label or winery. Of the 150 acres that makes up the property, approximately 60 will be used for viticulture, each partner owning his own vines. Dr Drummond has 8 acres planted so far. In 1986, 1 acre of Sauvignon Blanc and 2 acres of Merlot/Cabernet Franc were planted. In 1988 another acre of Sauvignon Blanc, 2 acres of Chardonnay and 2 acres of Cabernet Sauvignon followed.

Early in 1989 the Drummonds bought a 23 acre property on Mt Barker Hill, where they built their home. They have called the property “Cherrywood Estate”. Initially 5 acres were planted to Rhine Riesling and Cabernet Sauvignon, followed by a further 12 acres. Finally, a winery was built to make “Cherrywood Wines”, using fruit from “Cherrywood Estate” and “Whispering Hill” vineyards.

DR BENJAMIN KILLERBY OF “LESCHENAULT”

Dr Benjamin Barry Killerby was born in 1935 in Busselton, Western Australia and graduated from the University of Western Australia in 1959. He later trained in Edinburgh and became a M.R.C.P. (Ed.) in Gastroenterology.

His viticultural training has been via short courses through Roseworthy College at Adelaide, but his daughter, Anna, graduated from Roseworthy in oenology in 1985 to supply the necessary technical basis for the wine making.

In 1973 Dr Killerby bought 40 acres at Gelorup near Cape Leschenault and called his vineyard Leschenault, after the original name for Bunbury. In 1974 he planted 10 acres of Shiraz and 10 acres of Cabernet Sauvignon, in 1977 it was 5 acres of Pinot Noir and 5 acres of Traminer and in 1980 5 acres of Chardonnay and 5 acres of Semillon.

The winery was built in 1977 with extensions added in 1979 and 1980, bringing its total capacity to 100 tons. The winery produces the varietal wines grown on the vineyard, plus a vintage port and a crystal (white) port.

According to Dr Killerby, the main innovation at Leschenault has been “the development of “April Red” in 1979. This is a light fruity, slightly sweet red designed to be served chilled. “April” because it doesn’t go into wood and so is ready by April. A lot of wineries have followed suit with this style in Western Australia.

Dr Killerby has now died and the Leschenault label has ceased to exist.

DR LYNCH OF “CHATSFIELD”

Dr Kenneth John Lynch was born in Dublin, Ireland in 1934 and completed his medical training at the University College, Dublin, in 1958.

After migrating to Australia, Dr and Mrs Lynch settled in Albany, Western Australia, where Dr Lynch is a General Practitioner. In 1984 they became partners in the “Chatsfield Vineyard”, along with Ron Waterman (viticulturist) and Dr and Mrs Craig Drummond. In 1989, Dr Lynch bought out his partners and gained total control of “Chatsfield” Wines.

The Chatsfield vineyard is a 185 acre property, situated 12 kilometres from Mt Barker, of which 20 acres are planted with vines. In 1976 as “Waterman’s” vineyard, 6 acres of Rhine Riesling and 4 acres of Traminer were planted by Ron Waterman. In 1985 3 acres each of Cabernet Franc, Shiraz and Chardonnay were planted in a resurrection of the then rundown vineyard, owing to the fact that in 1982, Ron Waterman had leased the vineyard and went to South Australia to gain more experience by working with Brian Croser in Coonawarra. The name of the vineyard was changed from “Waterman’s” to “Chatsfield” in 1985 to reflect the new partnership and as a reminder of the small insectivorous bird of the wren family, which nest in the vineyard. The bird is also the logo on the wine label.

At present, there is no winery and the “Chatsfield” wines are made at Goundrey’s winery, Mt Barker.

Like Dr John Wilson's quarterly newsletter, the "Willy Willy", Dr Lynch writes his "Chatsfield Chalice" to enlighten his following about his latest wines and wine in general. His description of why he called his newsletter the "Chatsfield Chalice" was recorded in his first newsletter and is worth noting. "Why the name" – Well I guess it could be attributed to my Irish background and Catholic upbringing, but to me, a chalice is a vessel which is used to share wine with people. I guess the philosophy of this newsletter is also to bring and to share good wine with you. However, I also needed a literary licence to find a word to alliterate with "Chatsfield" and so was born the "Chatsfield Chalice".

DR BILL PANSELL OF "MOSS WOOD"

Bill Pannell was born in 1941 in Perth. He graduated M.B.B.S. from Western Australia University in 1966. Dr Pannell's parents (his mother is a noted West Australian actress) owned a holiday house in the Willyabrup, Margaret River district and during a trip through the Hunter Valley vineyards, he noticed a similarity between the soils of the two districts. In 1968 he and his wife, Sandra, bought 10 hectares. In 1969 they planted 2 hectares of Cabernet Sauvignon. Later more Cabernet Sauvignon, Pinot Noir, Chardonnay and Semillon were planted.

The first wine was released in 1973. It was a Cabernet Sauvignon and began a tradition of truly outstanding wines to come from this vineyard. Dr Max lake of Lake's Folly in the Hunter Valley has helped Dr Pannell in his wine making, but eventually a Roseworthy graduate, Keith Mugford, was employed as an assistant.

In 1986 Keith and Clare Mugford bought Moss Wood and today continue the high standards set by Dr Pannell. The medical profession still has some contact with Moss Wood, as Keith's father is a surgeon and Clare is a nurse.

Dr Pannell and Sandra became part owners of a Burgundian property – Domaine de la Pousse d'Or. Now the wheel has turned full circle in that Dr Pannell and his partners in Domaine de la Pousse d'Or, David Clarke of Sydney, who is also involved with the Simon Whitlam vineyard at Broke in the Hunter Valley and Gerard Potel (wine maker at the Domaine). They are currently planting Cabernet, Franc and Merlot at Pemberton, 140 kilometres inland from Margaret River.

DR MICHAEL PETERKIN OF "PIERRO"

Michael Peterkin was born in Perth in 1948 and studied Medicine at the Western Australian University. He graduated M.B.B.S. in 1973 and later gained a Diploma of Obstetrics. Wanting to also become a wine maker, he studied at Roseworthy, graduating in 1977. The 1976 vintage was spent at Sandalford's Caversham winery to gain experience and in 1978 worked at Enterprise Wines. In 1979 and 1980 he worked for Dr Kevin and Di Cullen at "Cullen's Willyabrup Wines". Dr Peterkin later married their daughter, Michelle, and also works as a General Practitioner in Busselton, where Dr Kevin Cullen works.

He was a consultant to "Alkoomi Wines" from 1980 to 1983 and to "Capel Vale" in 1983 and 1984. In 1980 Dr Peterkin bought a property in the Willyabrup Valley in the

Margaret River district, south of Perth, and planted 6 hectares of vines – Chardonnay, Pinot Noir, Sauvignon Blanc, Semillon, Riesling and Chenin Blanc. Four hectares of vines were planted, originally at the moderately high-density configuration of 4000 vines/hectare, ie. vines 1 metre apart within the row and rows 2.5 metres apart. The second stage of development was at a density of 5,500 vines/hectare, ie. vines 1 metre apart within the row and rows 1.75 metres apart.

A fully integrated system of soil, water and canopy management ensures premium quality fruit. A modified Tatura system of soil management is used, with 1 metre wide banks beneath the vines and a permanent cover crop, which is mowed between the rows.

The winery is one of the first rammed earth walled buildings in the area. Built in 1980 by a Perth based company, Ramtec, the 300 mm thick walls made from soil from the property ensures a constant cool temperature inside the cellar and adds to the aesthetics of the building, which also uses local jarrah hardwood timber to line the ceiling. The building blends in well with the surrounding landscape.

Pierro wines, especially the Chardonnay, have steadily built up a reputation of quality and have a bright future.

DR PETER PRATTEN OF “CAPEL VALE”

Peter Pratten was born in Sydney in 1940. He graduated M.B.B.S. (Hons.) in 1965 from Sydney University and trained at Royal North Shore Hospital and the Repatriation

General Hospital, Concord. Dr Pratten trained as a diagnostic radiologist and has an impressive list of higher qualifications – M.R.A.C.P. 1968, M.R.A.C.R. 1971, F.R.A.C.P. 1973, F.R.C.R. 1973 and finally F.R.A.C.R. Eventually Dr Pratten became Associate professor of Radio Diagnostics at Yale, before returning to Australia in 1972.

In 1973, Dr Pratten and his wife, Elizabeth, bought 23 acres at Capel, 70 kilometres north-east of the Margaret River area of Western Australia. Here he fully planted out the 23 acres with Cabernet Sauvignon, Shiraz, Merlot, Chardonnay, Sauvignon Blanc, Semillon and Rhine Riesling. The winery was built from 1979 to 1981 with a capacity of 200 tonnes and the vineyard is called “Capel Vale” – Capel because that is the nearest town and Vale meaning “on a river bank”, because the winery is on the banks of the Capel River. In 1987 16 acres was purchased at Mt Barker, 200 kilometres south-east of Capel, to supplement fruit supplies. Rhine Riesling, Shiraz, Pinot Noir, Chardonnay and Cabernet Sauvignon have been planted.

Dr Pratten is a self-taught viticulturist and oenologist and believes that “the ultimate wine is a blend”. Australian wine makers still persist in making straight varietal vintage wines such as a 1988 Shiraz and pride themselves that it is only Shiraz, only from one area and only from the one vintage. The French have been blending varieties and vintages for centuries. The great Bordeaux reds are made from combinations of some of the following varieties – Cabernet Sauvignon, Cabernet Franc, Merlot, Malbec and Petit Verdot. The skill in the wine making is in the blending. It is refreshing to see someone prepared to blend such as Dr Pratten. Now Dr Pratten can blend varieties from different areas from his two vineyards and from other vineyards.

Another doctor, local Dr Michael Peterkin from Pierro Vineyard, made the wine from the first vintage in 1980. Brian Croser's "Oenotec" made the wines in 1983 and 1984, but the fruit is now processed by Dr Pratten and wine maker, Alan Johnson. Johnson is a New Zealander from the Hawkes Bay wine region, who is a Roseworthy graduate.

DR RILEY

Dr Geoffrey J Riley graduated M.B.B.S. from the University of Western Australia in 1974. After postgraduate studies in Psychiatry, he gained a M.R.C. Psych. London in 1977 and became a F.R.A.C.G.P.

In 1983 Dr Riley and his wife planted their pilot vineyard of a couple of acres in the Pemberton district. The pioneer in this new viticultural region was Dr Pat Hold (non-medical), who had planted some Pinot Noir and Chardonnay, just a few miles away. As this was an entirely new area for grapes, inevitable mistakes were made and the pilot vineyard failed, mainly due to a lack of funds. Eventually the cows were let loose on the vineyard, but the Pemberton region, thankfully, survived as a new viticultural area for Western Australia.

New growers entered the area and Dr Riley established the Pemberton Vignerons Association and became the inaugural President. Because he now doesn't have a vineyard, Dr Riley has stepped down from this position.

One of the more experienced of the new growers in Pemberton is Dr Bill Pannell, who was the main driving force behind establishing Margaret River as such a good

viticultural region. (Dr Pannell is discussed in detail elsewhere). He made Margaret River famous with his acclaimed reds from his Moss Wood vineyard.

If the early vintages of Pat Holt's Pinot Noir are any indication, then Pemberton is assured viticultural success. For personal reasons, Dr and Mrs Riley returned to Perth to live at the end of 1989.

DRS SHERIDAN AND LAGAN OF "CHATEAU XANADU"

Dr Eithne Sheridan graduated in 1951 from Dublin University in Ireland and became a consultant obstetrician and gynaecologist in Ireland between 1954 and 1960. In 1963 Dr Sheridan gained a Diploma in Psychiatry from Dublin University and later migrated to Australia, where she has been in practice in the Margaret River area since 1968, specialising in O&G and Psychiatry.

Dr John Lagan qualified in 1952 from the Royal College of Surgeons, Ireland and worked in various hospitals in Dublin and Liverpool. He has been in practice with his wife in the Margaret River area since 1968, specialising in Paediatrics and Addictology. He has been the Foundation Chairman of Serenity Lodge, an Alcohol Rehabilitation Institute in Perth since 1978.

The following note was sent to the author by Drs Sheridan and Lagan to explain the reason why they named their vineyard "Chateau Xanadu".

“Our house in Ireland was called Xanadu and the prefix Chateau was added because of the close association of the South West Region (of Australia), with early French navigators and explorers. Many of the landmarks on the coast are named after these explorers, names such as Cape Naturaliste, Cape Mentelle, Cape Clairault, Cape Freycinet, Hamelin Bay etc.

As well, many of the great chateaux of the Bordeaux and Cognac regions in France were founded by Irish families; for example, Hennessys, Haut Brion (O’Brien), Chateau Barton (the Bartons of County Fermanagh), Chateau Kerwan, Chateau Lynch-Bages, Chateau McCarthy and many others. The present owner of one of these chateaux is a Mme. Dillon, the direct descendant of the “wild geese” of persecuted Ireland in the Sixteenth Century.

The words of the last stanza of Coleridge’s poem “Kublai Khan” are printed on the top of our labels to complete the bottle and they are:

“For he on honey dew hath fed,
And drunk the milk of Paradise.”

The poem is also extraordinarily reminiscent and evocative of the Margaret River area in general”.

Chateau Xanadu consists of 400 acres bought in 1972. In 1977 10 acres of Cabernet Sauvignon was planted, 10 acres of Semillon in 1978, 10 acres of Chardonnay in 1980, 3 acres of Cabernet Franc in 1981, 3 acres of Sauvignon Blanc in 1982, a further 3 acres each of Sauvignon Blanc and Cabernet Franc in 1986. The winery has been constructed

and added to continuously since 1978 and has a total capacity of 20,000 gallons. Production in 1987 was 5,000 gallons of Cabernet Sauvignon, 5,00 gallons of Semillon, 1,500 gallons of Chardonnay and 500 gallons of Cabernet Franc.

The doctors' reasons for establishing their vineyard were listed as:

1. Settled from Ireland in one of the planet's potentially greatest wine regions.
2. Challenge.
3. Irish / French tradition re Bordeaux and Cognac, particularly.
4. Achievement.
5. Insanity!!!

Their Semillon was regarded by Alan Young as the benchmark for Australian Semillons.

Chateau Xanadu is now owned by a publicly listed company.

DR JANET PEARSON OF "THOMAS WINES"

Dr Janet Pearson's family migrated from England in 1958, settling in Adelaide, where her father became a General Practitioner. After graduating from Adelaide University in 1965, Dr Pearson worked in Adelaide for 6 months before moving to Perth to work in the Royal Perth Hospital. In 1967 she married Gill Thomas, a pharmacist from Bunbury. Gill's family have been pharmacists in Bunbury since 1904 when his

grandfather started the business, which was then taken over by his father and now himself.

After moving to Bunbury in 1968, Janet Thomas worked as a sole general practitioner, an anaesthetist, with the school medical service and now as a locum or part-time general practitioner. It was whilst working as a locum general practitioner that Janet and Gill's interest in wine was first kindled. In 1973 Dr Bill Pannell of Moss Wood vineyard in the Margaret River district to the south of Bunbury, asked Janet Thomas to be his locum whilst he worked at the vintage. This was repeated in 1974 and 1975, but this time Gill came along as well and worked with Bill Pannell at the winery. From this experience grew an interest in wine, which naturally led to the Thomas' planting their own vineyard and later making their own wine in their own winery.

In 1969 the Thomas' had bought a 4.5 hectare property on the coast just outside of Bunbury, not far from Dr Barry Killerby's Leschenault vineyard. They named the property "Briar Holme" and built their house on the hill overlooking what was later to be their vineyard. The two donkeys, which were on the property when it was purchased, have become part of the family and now have the privilege of featuring on the wine label. In 1976 they planted 0.4 hectares of Pinot Noir. By 1980 plantings had been raised to 1.6 hectares of Pinot Noir and 0.4 hectares of Chardonnay. This makes the Briar Holme vineyard of Thomas Wines the smallest commercial vineyard in Western Australia.

The first wine released under the Thomas Wines label was a Cabernet Sauvignon in 1978. It was made from Moss Wood fruit in the winery constructed at Briar Holme in

1976. The Thomas' continue to import fruit from the Margaret River area to supplement their own "home grown" fruit. Their aim is to make the best Pinot Noir available. This is possible because Gill Thomas must have learnt well from Bill Pannell, having won so many awards for his wine in such a short period. In 1978 and 1980, Thomas Wines won the Trophy for the best Red Wine (small wine maker) at the Perth Wine Show and in 1984 the Trophy for the best Pinot Noir. Total production now is 300 cases of Pinot Noir and Cabernet Sauvignon. The small amount of Chardonnay produced at Briar Holme is sold to Dr Peter Pratten at Capel Vale vineyard.

SOUTH AUSTRALIA

The Dutch explorer, Francois Thyssen, was the first European to sight the coast of South Australia in 1627. No more was heard about South Australia until the Englishman James Grant sighted it in the "Lady Nelson" in 1800. Captain Matthew Flinders charted the coast during his circumnavigation of Australia in 1822. Sturt, in 1829, was the first to explore the South Australian interior when he approached from the Murray River.

In 1834 Edward Gibbon Wakefield's scientific colonisation plan to settle South Australia was enacted in Parliament. The Colonization Commissioners of South Australia were empowered to sell land and use the funds to promote more migration to South Australia, hence South Australia was the only colony to have a planned settlement scheme involving only free settlers. There were to be no convicts and there was no private or independent "ad hoc" settlement such as in Victoria.

On 28/12/1836 the Colony of South Australia was proclaimed at the mouth of the Torrens River where Adelaide is today with 546 settlers. Viticulture didn't start immediately, it wasn't until 1837 that the South Australian Company recruited two German vine dressers, A.J. Scholz and P. Stein, to plant vine cuttings they brought with them from Germany in the western parklands of Adelaide (later to the Botanical Gardens). Later these vines were relocated to the South Australia Company's "Park Farm" - now the Adelaide suburb of Hackney. Also in 1837 John Barton Hack planted vines in the north Adelaide area that he had obtained from Launceston.

Hack was followed by George Stevenson in 1838. The infant colony lacked vine cuttings initially and had to obtain them from Tasmania, Victoria and from the Busby and MacArthur collections in NSW. In 1841 57,000 vine cuttings arrived from the Cape of Good Hope.

In 1838-39 John Reynell established a vineyard at Reynella from cuttings he obtained from Port Arthur in Tasmania. The 1840s saw a tremendous growth and expansion of the South Australian wine industry again with doctors at the forefront. In 1844 Dr Christopher Rawson Penfold planted at Magill. In 1846 Dr Alexander Charles Kelly built his homestead “Trinity” and later established his vineyard “Tintara” which was to be taken over by Thomas Hardy and become the foundation for the Hardy family winemaking business. One must take note here that three of the most important medical winemakers in Australia Dr C R Penfold of Penfolds, Dr A C Kelly of Tintara later of Hardy and Dr H J Lindeman of Lindemans were all born in 1811.

In 1847 Johann Cramp planted Jacob’s Creek, in 1849 Samuel Smith started Yalumba and in 1851 Joseph Seppelt began his vineyard in the Barossa Valley. The Barossa Valley was later to be developed by an influx of German migrants.

South Australia was spared from the phylloxera pest that was destroying the vineyards of Victoria and NSW in the late 1800s hence South Australia gained a tremendous lead over the other states. This advantage couldn’t be fully capitalised on until Federation in 1901 when Free Trade between the States of the Commonwealth of Australia meant there was no more duty placed on South Australian wine when it was imported into the

other states. In the meantime South Australia relied on exporting its wine, mainly fortified wines from the Barossa Valley to England.

DR FRANK ALLWORK OF “WOOROORA”

Dr Frank Allwork qualified as a medical doctor with a Licentiate of the Society of Apothecaries of London 1881. Later he was the Assistant Demonstrator in Anatomy at the Westminster Hospital Medical School in London.

In 1887 or 1888 he sailed for South Australia and became the Medical Officer for the Destitute Department of South Australia as well as a Surgeon Captain in the South Australian Military Forces (one must remember that prior to the Federation of Australia in 1901 each State had their own armed forces).

By 1891 Dr Allwork was the local doctor at Riverton, a small town on the Gilbert River 62 miles north of Adelaide and 30 miles south east of Clare. The area is gently undulating country on red-black loam soils and mainly devoted to wheat and sheep. In 1891 Riverton had a population of 588 with two hotels, three churches and two banks.

The South Australian Company (London) owned much of the land around Riverton and had this land on lease to farmers who had suffered badly from crop failures in the 1800's from overuse of the land. The failed farmers left the land with the result that the South Australian Company had a lot of its land lying idle. To encourage wine making in the district, to capitalise on the current wine boom occurring in South Australia at that time and to get the land back into production again, the South Australian Company in 1891 offered 20 acre blocks for lease for seven years rent free then 1 pound per acre for

the next three years. Vine rootlings were also provided. Once the vineyard was established a reasonable market rent was to be charged.

In 1891 Dr Allwork and Mr Frederick Norton, the local butcher and baker, leased 200 acres and planted 100 acres made up of Malbec 30 acres, Mataro 50 acres and 60 acres each of Shiraz and Cabernet. Five acres of Muscat were also planted to see if dried fruit could be grown at Riverton. The vineyard was called "Wooroora".

Late in 1895 Frenchman Charles Pierlot was engaged as manager. Pierlot was born near Rheims, the centre of the French champagne district, and had been working at Pommery, a famous champagne House. Hans Irvine the owner of the Great Western Cellars in Victoria, had brought Pierlot out in 1891 to supervise his champagne production. Pierlot remained at Wooroora until about 1898 when he returned to Great Western.

Under Pierlot's management a large winery and cellars were constructed on the side of a hill so that gravity could be used to help with the flow of grape juice. The building was three stories high and contained 19 fermentation vats which were lined with Mintaro slate. The cellars occupied 530 square yards and had a storage capacity for 70,000 gallons of the heavy Burgundy style red wine made at "Wooroora" which was mainly exported to England.

In 1899 Dr Allwork decided to move to Tasmania so Mr Norton bought out his share of the venture and took on a new partner Mr Glen G Legoe. Mr Glen Legoe and his

brother William bought out Norton's share of the Vineyard around 1910 and traded as Legoe Brothers, Vignerons, Wooroora Vineyards, Riverton, South Australia.

By this time also the vineyard was producing 30,000 gallons of wine/year. WW1 saw a dramatic decline in wine exports to England resulting in the end of "Wooroora" and many other smaller vineyards in the Riverton district. Around 1920 the wines were uprooted and the property went back to its original function of wheat and sheep farming. The Legoes continued to farm the land until they sold out to the Parker family in 1936. The Parker family used the winery stone to make two houses on the property and have been running the farm ever since.

In the meantime Dr Allwork had sailed to Tasmania and settled in New Norfolk where he built up a practice, became medical officer to the New Norfolk Cottage Hospital, Health Officer to the New Norfolk Municipality and an official visitor to the Hospital for the Insane. He was also very involved with the local Anglican Church (St. Matthew's) and with the Freemasons helping to establish the Derwent Valley Lodge and becoming the first Worshipful Master.

In 1907 he presented a paper at the Seventh Australasian Medical Congress in Adelaide called "The Ethical Relations between Town and Country Practitioners". It was a plea for recognition of the plight of the rural medico who had to work with "a candle or a bad lamp in the middle of the night" with little or no assistance.

After a month's long illness, Dr Allwork died on Saturday 26/4/1913 leaving a widow and three daughters.

ANGOVES

Angove is a common Cornish surname meaning “the smith”.

William Thomas Angove was born on 26 August 1854 at Camborne, Cornwall. He was the second son and fourth child of Henrietta and Thomas Angove. Like most Cornish men, Thomas worked in the tin mines. He was the manager of the South Tolcarne Mining Company of Camborne. Thomas’ descendants were also miners for three generations and yeoman farmers before that.

William’s elder brother Edward Scudamore studied medicine at St. Bartholomew’s Hospital in London and graduated as a MRCS England in 1867, Master of Licentiatecy in 1869 and LRCP Edinburgh. He established his practice in Camborne where he was surgeon to several mines, District Medical Officer, Public Vaccinator and medical examiner for the army and militia recruits. Edward’s medical career may have influenced William to become a doctor also.

William graduated from St. Bartholomew’s as MRCS England, LSA London in 1875. He remained there as temporary midwifery assistant then became Senior House Surgeon at West London Hospital, Hammersmith, for thirteen months. He then became House Surgeon at Great Yarmouth Hospital. In 1878 William bought into a practice at Mildenhall, Suffolk. Here William met Emma Carlyon, a nearby parish Reverend’s daughter. They married on 4 September, 1879.

In the 1880s newer medical graduates were dissatisfied with the practises of older doctors and left England for the colonies in Africa, Canada, Australia and New Zealand where they could practise their medicine their way and not be tied down by traditional methods. So it was with Dr William Angove who began to clash with his senior partner at Mildenhall, Dr Frederick H Harris. In January 1886 William sold his share of the practice for 1,000 pounds and then sailed for Australia on the Bencruachan arriving in Sydney on 15/6/1886 after a 90 day voyage from London. Dr Angove travelled out as the ship's surgeon.

The Angove family then transferred to the Collingrove for the voyage to Adelaide. Dr Angove had bought the medical practice of Dr Thomas Cawley of Tea Tree Gully for 1,130 pounds and the furnished house, which went with the practice for 530 pounds in July 1886. At that time Tea Tree Gully was the centre of an agricultural district 19 km north of Adelaide which produced wheat, wool, stone fruits, apples and grapes. Today it is an urban suburb of Adelaide.

Once settled into practice in Tea Tree Gully, Dr Angove decided to establish a vineyard like so many others around him. In October 1889 he leased 33 acres of land next to his house for 35 pounds per year. In August 1896 he bought the land for 800 pounds. In April 1891 he bought 160 acres south west of his house. The first property was called his Tea Tree Gully vineyard and the second he called Tregrehan vineyard. Tregrehan is Cornish for "the Farm" and was the name of his father-in-law's house near St Austell, Cornwall.

Angove planted both vineyards and leased the wine cellars owned by Archdeacon George Henry Farr at the nearby Brightland Cellars. In the 1800s wine was sold as a medicine and Dr Angove wanted his own supply for his patients and the vineyard would provide an occupation for his sons. Also South Australia was in the middle of a vine planting boom due to large and stable export markets to England.

In 1976 Ian Auhl wrote "From Settlement to City, a History of the District of Tea Tree Gully 1836-1976". The following quote tells how doctors used alcoholic beverages for medicinal purposes:-

District Councils had the power of appointment of medical officers to attend to the destitute of the district. In 1875 three ounces of gin per day were being prescribed by Dr Bosch of Tea Tree Gully to destitute patients. In 1877 following the sudden death of Dr Bosch, Dr Max Neubauer, the new medical officer, sought permission from council to grant one bottle of wine per week to his destitute patients. When Mr W H Nicholls, licensee of the Travellers' Rest at Houghton, forwarded a half-yearly account for 3 pounds 5 shillings for supplying 13 bottles of wine ordered by Dr Neubauer for one of his patients, the Destitute Board of Adelaide complained. The District Council was asked to endeavour to provide colonial wine in place of imported wine. Council minutes reveal that they approved Mr George McEwin's wine at 1/6d per bottle and also forwarded a sample of the wine of H. J Coulles at 1/- per bottle. Dr Hartley Dixon who followed Dr Neubauer as medical officer for the both councils, favoured whisky for his destitute patients. He was reprimanded in 1883 by council for ordering half-a-pint of Irish Whisky and half-a-dozen eggs per week to the same Houghton patient who had, back in 1875, consumed 13 bottles of imported wines at council's expense" (42).

The Tea Tree Gully vineyard was planted initially with 10 acres of wines in about 1889. In 1892 the Tregrehan vineyard was planted with 20 acres of wines. During this time Dr Angove began a friendship with Professor Arthur J Perkins who was a graduate from France's Agricultural College of Montpellier and had been appointed head of the Roseworthy Agricultural College in 1892.

Cultivators planted included Cabernet Sauvignon, Malbec, Madeira, Shiraz, Riesling, Gouais and Pineau Blanc.

By 1897 the Tea Tree Gully vineyard was named St Agnes either after the town in Cornwall (10 miles north-east of Camborne) or after Saint Agnes the Patron Saint of Purity. The latter may have been suggested by Archdeacon Farr.

The first proper vintage was in 1893 and the grapes were processed at the Brightland Cellars until Dr Angove built his own winery at the St Agnes Vineyard between 1904 and 1905. The earliest Angove wines were an 1895 Riesling and White Madeira. In April 1899 Dr Angove had his son, Thomas Carlyon called Carl, enrolled at Roseworthy under Professor Perkins. He graduated in 1902 and helped his father develop his business. These developments included the lease in 1906 of the Highercombe vineyard near Houghton to the south east of Tea Tree Gully. Carl may have wanted to make a lighter claret and hock style wines at Highercombe. Another development was the construction of a distillery at St. Agnes, which began production in 1988. Angove's famous St Agnes Brandy came from here.

In May 1910 Dr Angove's sons Carl and Edward were made partners in what became Angove and Sons. The company was expanding so they leased more land, this time 74 acres from St Peters Collegiate School on Tolley Road which was planted with Doradillo vines.

Dr Angove had many other interests and responsibilities other than his medical practice and his vineyards. He was on the council of the South Australian Vinegrowers' Association and a member of the Wine Committee of the Royal Agricultural and Horticultural Society of South Australia. Dr Angove was a high official in the local Freemasons Lodge, he was a Justice of the Peace and surgeon to the Gumeracha Volunteer Military Force where he continued his love of shooting. The study of birds was a lifelong interest. He was a member of the Royal Australian Ornithologists Union and over the years put together a very important collection of birds and eggs, which is now in the South Australian Museum.

Dr Angove was also a keen sailor, shooter and photographer. Many of the early photographs of the Tea Tree Gully area are attributed to him and he photographed many different bird species. As a sailor he was a member of the Port Adelaide Sailing Club and the Royal South Australian Yacht Squadron. He won many prizes for 18 foot and 20 foot class boats.

Other interests, in keeping with the Victorian practice of investigating everything possible, were geology, botany, entomology, fishing, golf and things mechanical. The latter led to an interest in motor cars. Dr Angove did his house calls either on horse back or in a horse drawn trap but when cars became available, he was one of the first to

buy one. His first car was a White Steamer (a rival of the famous Stanley Steamer). In 1904 a 6 hp Humberlette was purchased followed by an 8 hp De Dion Bouton in December 1905. In 1907 Dr Angove bought a 1905 10 hp De Dion Bouton and had the registration number 77 with this car when registration of vehicles was introduced later that year.

In 1909 Dr and Mrs Angove returned to England to visit family. During this visit he noticed a malignant tumour in his throat. They returned to Adelaide in September 1910 and toured New South Wales in April 1911. After this Dr Angove returned to England to spend his last days with his brother Dr Edward Angove at “Ashgrove” Haxby near York. He was nursed by family until his death on 25 March 1912 at “The Hermitage” Silverdale, near the coast in Lancashire, aged 58.

Today the Angove winery has moved out of Adelaide to Renmark to avoid the urban sprawl of Adelaide, which has claimed the Tea Tree Gully area. The original winery built by Dr Angove is now a tourist centre.

Dr Roger Carlyon Angove MBBS Adelaide, FRACP, is Dr William Thomas Angove’s grandson through Dr William Thomas Angove’s son, Thomas Carlyon “Carl” who married Dr Alexander Charles Kelly’s granddaughter Margaret, thus uniting two pioneer medical wine families.

DR BAIN

Doctor John William Devereux Bain was born in England in 1838. His father was a doctor in Blackwall, London, which may have influenced him becoming a doctor, which he did by qualifying as MRCS England and LSA London in 1864. After spending some time in Asia Minor Dr Bain came to South Australia and settled in Clare in 1864 to join Dr Davies in practice. Dr Otto Wein-Smith who helped establish the Stanley Wine Company, was also a partner in this practice at one stage.

Dr Bain spent 3,500 pounds purchasing land and establishing his vineyard in the 1890s. The Northern Argus newspaper of 21/2/1896 included an article about Dr Bain's vineyard:-

Dr Bain was amongst the first of the new generation of vine-growers to take practical interest in the industry, but unfortunately his first efforts were not attended with success, and his vineyard is not so far advanced as otherwise would have been the case. The doctor's property adjoins the main road from Sevenhills to Mintaro, and is 435 acres in extent. Of this area 120 acres have been planted with vines and fruit trees, the vines occupying 100 acres and the fruit trees 20 acres. The varieties of vines planted are Cabernet, Carignan, Nataro, Grenache, Malbec and Zante currants. The areas they occupy are – Cabernet 30 acres, Shiraz 45 acres, Carignan 8 acres, Mataro 1 acre, Grenache 2 acres, Malbec 1.5 acres, Zantes 12 acres. Dr Bain is the only vine-grower in the district who has the Carignan variety planted. It is a variety very like Shiraz but a much more abundant bearer, combining at the same time in the highest degree quality with quantity. In France it frequently gives crops of 1,500 gallons per acre. It is

cultivated to some extent in Victoria. An 80-acre section on the left side of the road going to Mintaro is entirely planted with wine grapes, while the currants and the lesser areas of wine vines are planted in another section near the house on the other side of the road. In the 80-acre section the vines in places have grown very well, but the land, as is the case right through the district, is very patchy, and the vines on the poorer spots are of course not so well grown as those on the better soil, and make the appearance of the vineyard rather uneven as to growth. However, the better grown vines have very fair crops of well-filled out fruit, and as the majority of them will be five years old next planting, a still larger return should be the result next season.

Some of the currant vines are remarkably well grown in places, and right through are very satisfactory. Mr C Horsman, who has charge of the property and who kindly showed me around, has started putting in posts for trellising this lot, and next season no doubt a good crop will be the result. The fruit trees present a very pleasing appearance, one plot five years old looking as well as, if not better than, any I have seen in the district. The orchard covers an extent of 20 acres, five acres being planted with lemon and orange trees, mostly lemons, however, and 15 acres with apples and pears. The lemon and orange trees on the whole look very well, although here and there a few sickly ones are to be seen. After planting, the trees were irrigated for the first year or two, but this year this has not been done. The trees on a rising piece of ground appear to have grown better than those lower down. The apple and pear trees look remarkably well, exhibiting good growth, the apples more so than the pears, although the whole are very creditable. They are two, three and four years old, and those first planted have very fair crops of large-sized fruit. A large number of varieties of apples are planted, the principal sorts, however, being Cleopatra, Rome Beauty, Scarlet Nonpareil, and

Rokewood, while small areas are planted with Garibaldi, Strawberry-Pippin, Stone Pippin, Norfolk, Beaufin, and Lady Henniker varieties. The pears are of the Winter Nelis, Vicar of Winkfield, Beurre de Capiamont, and Josephine de Malines varieties. The property throughout is well attended to, and the doctor will well deserve this reward. In addition to the vineyard and orchard, 80 acres of wattles are planted, amongst the native wattles being a few trees of the black wattle, which for ornamental purposes cannot be beaten, although its bark is not so valuable as that of the ordinary wattle of commerce. They are planted very thickly, and a large return should be received in a few years (43).

Dr Bain intended to make his own wine but never got around to building his own winery. After Dr Bain died, the Main brothers purchased the property and built a winery, which they called Nyora in 1904. The winery was still in production in 1910 and today the winery shell still stands.

“Dear, kind, delightful, generous Dr Bain was the grand old man of Clare” according to the Adelaide Observer obituary of 27/6/1903.

Dr Bain was the great benefactor for Clare. He was a bachelor and a doctor and made money from mining investments at Broken Hill hence he was able to spend money on many local projects (even before the mining money had been realised). One of Dr Bain’s earliest interests was the Clare Institute built in 1872. It was a centre for culture and education and would not have been completed without his help. Other gifts to the Clare region included a roller skating rink, a drinking fountain for people, dogs and horses; in 1883 an indoor baths complex bigger than any in Adelaide, which also

doubled as a roller skating rink in winter, a water cart to keep the Main Street of Clare dust free in summer, stepping stones across the Burton Street ford to give pedestrians access to the shops in Main Street and a 1,000 pounds donation to the St Peters Cathedral Building Fund.

To help the region more by encouraging dairy farming, Dr Bain converted the Clare Baths into a butter factory in 1894. Dr Bain tried to help the region even further by prospecting for minerals so that mines could be developed to provide local employment. But the cost of this prospecting, his many gifts and some bad investments soon lost him his fortune. His Clare practice was sold to help pay his debts and he moved to Port Germein. Five years later he became ill and died at Tibbits Hospital, Adelaide, on the morning of 25/6/1903.

Public subscription raised enough money to build a memorial to him in Clare. The Bain Band Rotunda overlooking the oval at Clare was opened on 13/4/1904 as a tribute to the man who loved music so much and had done so much for Clare.

DR HERBERT BASEDOW

Mr Martin Peter Frederick Basedow was the father of two remarkable sons. He was a newspaper proprietor and a politician, being a Minister and the member for the Barossa District in the South Australian Government from 1876 to 1890. His second son was Bernhard Basedow who became one of Australia's most highly qualified winemakers having studied at the Roseworthy Agricultural College, Adelaide; the Royal College of Viticulture at Geisenheim under the famous Dr Muller-Thurgau then at the Montpellier

Viticultural College in Southern France followed by laboratory work at the University of Bordeaux. After extensively touring the vineyards of Europe he returned to Adelaide in 1893. Eventually Bernhard Basedow managed the famous Horndale vineyard, winery and distillery at Happy Valley near Adelaide. The estate consisted of 320 acres of which 200 were under vine.

Eventually the Horndale Estate became a Basedow family business with Bernhard as the proprietor. One of the members to have an interest in the estate and be a partner of Bernhard was his younger brother Herbert.

Dr Herbert Basedow was a truly remarkable man. Not only was he a medical man but also a geologist, anthropologist, explorer and politician. He was the youngest son of Martin and Anna Basedow born at Kent Town, Adelaide on 27 October 1881. After a high school education in Hanover, Germany, and being a Cotton Medallist at Prince Alfred College, Adelaide, he attended Adelaide University where he gained his B.Sc and was a Tate Medallist.

He studied medicine and anthropology extensively in Germany gaining a PhD from Breslau University in 1908, followed by study at Heidelberg University in 1909 and finally gaining his M.D.Ch.D from Gottinger in 1910. Whilst in England he became a Fellow of the Geological Society.

When in South Australia from 1903 to 1906 prior to his trip to Europe and upon his return late in 1910, Dr Basedow pursued his interests in geology and anthropology. He became a great explorer of inland Australia studying the Aboriginal people in depth and

looking for minerals. He made many expeditions into Australia's harsh interior to document the aboriginal way of life and language which were recorded in many papers and book including "The Australian Aboriginal" published in 1925 and "Knights of the Boomerang" published posthumously in 1935. Whilst on these expeditions Dr Basedow treated the sick aboriginals and prospected. In recognition of his explorer achievements, he was made a member of the exclusive American organization "The Adventurers of the World".

Mount Basedow at the headwaters of the South Alligator River in Northern Territory was named after him as was a pandanus plant found by him in Arnhem Land in 1930. The botanists at the Royal Gardens at Kew in England called it *Pandanus Basedowii*.

Later in his full life he became the member for his father's seat of Barossa from 1927 to 1930 and was re-elected again in 1933 only months before he died on 9 June, 1933 leaving a widow, two brothers and three sisters.

Because of his great geological expertise gained not only from an extensive study but from his many prospecting field trips, Dr Basedow became very much involved in mining companies. He was Chairman of the Central Australian Silver Lead and Copper Mining Company and had interest in several other mines.

In 1930 Bernhard Basedow died leaving his younger brother Alfred to manage the Horndale Winery until his death in 1931. Dr Basedow took over control until his death. The strain of his many responsibilities and election campaign in the April exhausted Dr Basedow.

DR CLELAND

William Lennox Cleland was the eldest of nine children, six surviving (all boys) of John Fullerton and Elizabeth Cleland. He was born in 1847 in Hong Kong where his father was a missionary. He was born with a large nose and “neighbouring Chinese filed past the infant child to look with awe at the monstrous protuberance”. (The Clelands of Beaumont by E.R. Simpson 1986). His maternal grandfather was a doctor hence he would have had some exposure to the medical world from a young age. Soon after William’s birth the family returned to London but when he was five the family migrated to South Australia.

William spent the next 10 years in Adelaide where he was privately taught by his Aunt Margaret Davenport “who practically adopted him as she had no children of her own”. Margaret Davenport was married to Sir Samuel Davenport, a famous South Australian wine identity. Lennox’s early training and later interest in wine was due directly to Samuel. William’s younger brother, George Fullerton (1852-1931 and second surviving child) later became a famous wine merchant and vigneron. “Fullerton’s livelihood as an olive and wine merchant was also directly due to Samuel’s interest in this field”.

At the age of fourteen whilst working at his maternal uncle’s property north of Port Augusta, young William Cleland first heard the news of the Burke and Wills exploration party being camped at Coopers Creek. When he wrote to his father to tell him about this news the next day, it was to give the world the first news that Burke,

Wills and King were living with Aborigines at Coopers Creek. The letter was published in the "Register" on 26/9/1861.

In 1862 William was sent to Europe with the Davenports to complete his education. Due to Samuel's interest in viticulture they visited the vineyards of Italy and France before William attended school in Switzerland. Upon returning to South Australia, he worked in the bush on properties for one year and then spent another year studying viticulture with the famous Dr Alexander Kelly at this Tintara vineyard (refer Dr Kelly section in his book). Whilst with Dr Kelly, he read some of the good doctor's medical books and became interested in medicine. In 1872 he entered the Medical School at Edinburgh University, graduated M.B.Sh.M in 1876. After graduation he worked in various hospitals in Edinburgh, London and Paris including the Derby and Morningside Asylums in Edinburgh.

In 1877 he married Miss Burton, the daughter of the Historiographer Royal for Scotland and returned to South Australia. The following year he took up the post of Medical Superintendent at Adelaide's Major Asylum at Parkside. He held this important position until 1913 and during this period improved the Asylum's conditions immensely. He quickly became involved in other areas of medicine becoming the Secretary of the South Australian Branch of the British Medical Association from 1879 until 1888 - in 1889 he was elected President. In 1887 he became a lecturer at the University of Adelaide lecturing in Therapeutics and Botany. As a botanist he made an extensive collection of the plants named *Cheilanthes clelandi* after him. The Cleland Hills in Central Australia were named after him by his explorer friend W.H. Tietkens in recognition of his scientific worth.

The Cleland family, at their country home of Beaumont in Burnside, planted extensive areas of vines and olive trees in the 1850s under the influence and control of uncle Samuel Davenport. As mentioned earlier, William's next youngest brother George Fullerton was the one who pursued viticulture fully but William was not to be left out for the 1907 edition of the Cyclopaedia of South Australia states "He owns 90 acres of vineyard, 25 acres of olives and 10 acres of almond plantations. These properties are partly situated at Beaumont where they include acreages formerly owned by Sir Samuel Davenport and at New Mecklenburg near Tanunda."

At Parkside Asylum Dr Cleland continued the newly established tradition started by Dr Frederich Norton Manning at Tarban Creek Asylum (now Gladesville Psychiatric Hospital and referred to in this book) of establishing vineyards, orchards and market gardens in asylums to help with patient therapy and diet. The Centenary History of Parkside (now Glenside Hospital) mentions the vineyard:-

"Connected with the Asylum and immediately surrounding it, are 134 acres of land, nearly one half of which is under cultivation and chiefly occupied by vines, olives, mulberries, almonds, oranges and other fruit-bearing trees. Of course there is a very extensive vegetable garden".

"The southern border of the estate is chiefly planted with olives, oranges, mulberries and almonds; and the corresponding portion on the opposite side is occupied by olives, vines, mulberries and a splendid collection of the oak" (44).

Dr Cleland recommended the use of wine as a medicine. His views were summed up in his lecture to the Royal Agricultural and Horticultural Society on 27/8/1880 entitled "Some remarks upon wine as a food and its production". He was an original subscriber to the Chateau Tanunda Cooperative venture in 1889.

Some other interesting facts about Dr W L Cleland include that the famous pathologist Sir John Burton Cleland was his son and that Dr W L Cleland was greatly interested in sericulture. He tried to establish a silkworm industry at Parkside - hence the great number of mulberry trees at the Asylum but lack of interest by others ended the project.

Dr Cleland retired from Parkside in 1913 and died in 1918.

DR KELLY

Alexander Charles Kelly was born in Dunbar, Scotland in June 1811. After graduating with an M.D. from Edinburgh University, he practised first at Dunbar then as a ship's surgeon with the East India Company.

He came to Adelaide on board the "Badoo" arriving on 11/3/1840 and was appointed Assistant Surgeon at the Adelaide Hospital.

Because he wished to settle in Australia permanently he returned to Scotland to bring out his mother and lectured on "Australia as a Field for Emigration". During this trip Kelly also visited the vineyards of Europe because he realised the soil and climate of South Australia was similar, hence suitable for winemaking. Upon his return he bought

80 acres of land at Morphett Vale and decided to build a house on this property and to plant a vineyard so that he had ample strong red wine for his patients to use as a medicine. At that time, 1843, there was a scarcity of good labour so he used three fellow passengers on the ship out to Adelaide to work for him. They were hatters and couldn't find work, so Dr Kelly was the carpenter, a stone mason was employed and the three hatters quarried the stone and split the timber for the roof. The house, upon completion, was called "Trinity" because of the three hatters.

Planting of the vineyard began in 1845 with 12 acres, but the wrong vine varieties had been recommended by Macarthur who wrote under the "nom de plume" of Maro. The varieties ripened too early for the district. The following description of Trinity was written in 1862 by Ebenezer Ward in his book "Vineyards and Orchards of South Australia":-

"Dr Kelly's vineyard is two miles westward of Morphett Vale, about one mile from the shores of the Gulf in a straight line, and two miles north of Port Noarlunga and the mouth of the Onkaparinga. Altogether there are 12 acres of vines, and planting was commenced in 1845. Like Mr Reynell, Dr Kelly commenced with the kinds recommended by Macarthur in "Maro's" letters, but they have almost all proved unsuited to the climate, and have for the most part been rooted up and replaced with Rousillon varieties, which will not ripen in New South Wales. (The Mataro is grown there in some places, but Dr Kelly says it never ripens well.) At Trinity crops ripen almost as early as on the plains, the vineyard being about 100 feet above the sea. The vintage generally extends from 5th of February to 15th March, and the sorts recommended in "Maro" failed, because they ripened too early.

The vineyard is enclosed with stone walls, the material having been picked off the land. The soil is chiefly a reddish loam, intermixed with limestone, but in some places the subsoil is a stiff clay. Originally Dr Kelly planted his vines at 6 feet by 4 to 6 feet by 6, but now he prefers and adopts distances of 9 feet by 4 to 9 feet by 5, because greater facilities are thereby afforded for ploughing the ground between the rows, and the vines support each other better in the rows. The vines are planted on two hill slopes divided by a slight fall in the centre, with an east to east-by-north aspect, and the land is always ploughed across the slopes, better to retain the rain fall. The hill slope rising above the vineyard on the west has been intersected with furrows, which drain the surface water from it to the vineyard, and the same hill shelters the vineyard from westerly winds. Dr Kelly has grafted a good many old vines with the Rousillon varieties, and we noticed some Mataro grafted last year on Muscat, which had borne this year. He is always careful to graft six or eight inches below the surface. A few Verdelho have been preserved of the old sorts originally planted, but they have all been trellised, and Dr Kelly considers they will not pay for cultivation without that support, whereas the Rousillon stand admirably in gooseberry-bush fashion. He thinks also that white grapes will not withstand the heat of the sun as well as the red sorts.

Dr Kelly makes a capital wine from the Rousillon varieties, and on one occasion he mixed a small quantity of Shiraz and Malbec with them, but the latter ripened earlier than the Rousillon, and had to be fermented separately”(45).

Burgundy style red wines were made at Trinity and used not only as wine to drink but also for their medicinal virtues. In 1859 Dr Kelly toured the vineyards of New South Wales to study vinegrowing and wine making techniques there.

In 1855 Dr Kelly married Miss Annie Worthington, the daughter of the local Stipendiary Magistrate. A son, John George, was born to them in 1859 who was later to manage "Tintara" for Mr Thomas Hardy when he was only 18.

Dr Kelly by now had been through all the troubles of establishing a vineyard and in order to help others to sort out the confusion existing in the early days of Australia's wine industry such as which varieties were suitable to plant, he wrote a book entitled "The Vine in Australia" in 1861. It was a thorough work and a landmark in the Australian Wine Industry and included a diagram showing contour planting for the first time.

Dr Kelly sold "Trinity" to Mr John B MacMahon and embarked on an even bigger winemaking enterprise. In 1861 he purchased some heavily timbered crown land in McLaren Vale and built his new house. This property he called Tintinara which was a local aboriginal word - Tinta meaning colour and Rara meaning rare. Tintinara was quite a mouthful so it was shortened to Tintara. In 1862 90 acres were planted to Shiraz, Cabernet, Mataro, Grenache and especially Sauvignon Blanc from cuttings from Manning's vineyard locally. The cellars were made in 1863 by digging into the hillside adjacent to the house. The fermentation tanks for the cellars were lined with Delabole slate quarried by Cornish miners in the Willunga hills. By 1867 the vines were in full bearing making a big dark full bodied burgundy type wine which again was also used as

a medicine by the good doctor. Also in 1867 Dr Kelly wrote another wine book, this one entitled "Wine growing in Australia". Kelly had persuaded many of Adelaide's leading citizens, including Sir Samuel Davenport, Sir Thomas Elder, Sir W W Hughes and Messrs Cleland, Stirling, R Barr-Smith and A L Elder to invest in his venture.

In 1871 Dr Kelly returned to England and engaged Peter Bond Burgoyne to be Tintara's London agent, but sales were poor. A recession in the colony and the return of a pipe of wine (capacity of 110 gallons) as unfit spelled the end of the venture. In 1873 the 700 acres of vineyards, cellars, houses and implements were all bought by Thomas Hardy who regained all his purchase price with the sale of the wine storing in the cellars within a year.

Dr Kelly by now a disillusioned man retired to a house in William Street, Norwood, a suburb of Adelaide. Here he died on 9 October 1877 at the age of 66.

A significant coincidence - Drs Lindeman, Penfold and Kelly were all born in 1811 and established their vineyards in 1843, 1844 and 1845 respectively.

DR PENFOLD OF "PENFOLDS"

Dr Christopher Rawson Penfold was born in 1811 to Charlotte and John Penfold, vicar of Steyning, Sussex, England. He trained at St. Bartholomew's Hospital, London, where he was a contemporary of the famous physician James Paget, famous for describing Paget's disease of the bone and Paget's disease of the nipple. It is also interesting to note that Australia's other most famous medical winemaker, Dr Henry John Lindeman,

was also born in 1811 and also trained at St. Bartholomew's Hospital about the time of Dr Penfold.

On 26 May 1835 Dr Penfold married Mary Holt the only daughter of a London medical practitioner, Dr Thomas Holt. Then from 1838 to 1844 he practised medicine at Brighton.

A naval officer is supposed to have told young Dr Penfold about the endless opportunities in the new colonies of Australia. After 6 years of practice in Brighton, Dr Penfold must have been influenced enough by these stories because he decided to emigrate to South Australia with his family.

Dr Penfold believed in the medicinal use of wine especially in using red wines to treat anaemia, so prior to sailing for South Australia, he obtained vine cuttings from France and paid a deposit to the Colonial Land and Emigration Commission. Dr Penfold, his wife Mary and their only child, Georgina, arrived in South Australia on board the Taglioni on 18 June 1844. They paid 1,200 pounds to Mr Edmund Trimmer for 500 acres of the "choicest land, 200 acres of which were under crops" at Magill about 4 miles out of Adelaide in the foothills of the Mount Lofty ranges.

The vines had been brought out to Australia with their roots dipped in wax to seal them and prevent them from drying out. When Dr Penfold and Mary arrived at their property on 8/8/1844 they built a small timber shack which was replaced a year later with a stone cottage called "The Grange". Around their home they planted their vineyard and produced mainly fortified red wines (ports and sheries) for patients. As the demand for

his wine grew, so Dr Penfold expanded his vineyard and winery and became more involved in wine production.

He was also busy practising medicine and being involved with local government – he was the first Chairman of the Burnside District Council in 1856. Not even the gold rushes of 1852 persuaded him to give up his chosen course as they did with most others. Dr Penfold battled hot, dry summers and great distances between his vineyard and overseas markets to establish his business.

These commitments and his ailing health meant that his wife Mary, aided by a servant, Ellen Timbrell, managed the vineyard more and more.

In 1861 the Penfolds visited Melbourne. During this visit Georgina met an officer in the Victorian Civil Service, one Thomas Francis Hyland. On 24/9/1862 they married and Thomas became responsible for marketing Penfold wines in Victoria.

In 1869 Joseph Gillard Jnr joined the Penfold's business as vineyard manager and winemaker. He was the 33 year old son of Joseph Gillard Snr, who established the Sylvania vineyards at Norwood.

After a long illness Dr Penfold died at "The Grange" on 25/3/1870 and was buried at St Georges Church, Magill. Mary Penfold assumed control of the wine business and with the aid of Joseph Gillard (who continued to work for Penfolds until his retirement in 1905) and her son-in-law Thomas Hyland, built up the business to one of the largest wine companies in Australia. By 1881 the business had expanded so much that 107,000

gallons of wine were made at Magill. This large quantity was equal to one third of all the wine stored in South Australia at that time.

In 1884, at the age of 68, Mary Penfold retired from active involvement in Penfold wines. Until then she had been the proprietor of the company wine blender and prior to Joseph Gillard's arrival, she had been responsible for the husbandry of the vines. On 31/12/1895 at the age of 79, Mary died in Melbourne and was buried with her husband.

Georgina and Thomas Hyland had two sons and two daughters who continued the business especially Frank Astor Hyland and Herbert Leslie Hyland who expanded interstate by buying the "Dalwood" vineyard in the Hunter Valley in 1904 and "Minchinbury" in Sydney in 1912.

ANTON SOKOLOWSKI

In the 1830s the western part of Poland was part of Prussia and Frederick Wilhelm III of Prussia attempted to form one State Church by uniting the Lutheran and Reformed Churches. Lutherans opposed this union and one Lutheran minister in Klemzig went to London where he met George Fife Angus who was a pioneer of South Australia. From this meeting plans were developed so that the first Lutherans migrated to South Australia in 1838 and settled in the Barossa Valley.

The Prussian Government continued to colonise Western Poland with German settlers and to germanise the local Poles thus forcing them to emigrate. Most Poles were Catholics but the migrants to Australia were a "mixed bag" of Catholics and Lutherans,

both giving religious reasons for migrating and political exiles, both Polish and Prussian, wanting to get away from autocratic Prussian rule.

Franz Weikert, a Silesian farmer, dreamed of forming a German Catholic settlement in South Australia to gain religious freedom. He gathered together a group of 146 Catholic Silesian emigrants (half of whom later turned out to be Protestants) and together they sailed from Hamburg in the 600 ton ship “Alfred” on 15.8.1848. After the “Alfred” arrived at Adelaide on 8.12.1848, the party broke up mainly because the Protestant half didn’t want to help form a Catholic settlement at Sevenhill in the Clare region.

The ship’s surgeon on this voyage was Anton Sokolowski. Dr Sokolowski was born in 1818 and studied medicine in Vienna graduating with M.D. on 15.5.1847. It was during this year that the father of modern obstetrics, Semmelweis, discovered the cause of puerperal fever whilst teaching at the University of Vienna. One must assume that Sokolowski studied under Semmelweiss.

Upon arriving in Adelaide Sokolowski boarded with the Weikert family at Clare and later with Jesuit priests in the local Chap House.

On 24.8.1853 Dr Sokolowski married Pauline, one of Franz Weikert’s daughters who was born in 1835. The Jesuit priests had been searching all areas of South Australia for Catholics of any nationality to help form the Catholic settlement at Sevenhill and the fact that they had the only Polish speaking surgeon in Australia within their parish must have influenced many Poles to form the Polish Hill River settlement to the east of Sevenhill.

On 17.5.1851 Anton purchased Section 71 Hill River Survey of 40 acres for £60 from Mortimer Nolen, publican, of Clare. On 10.3.1858 he purchased Section 70 of 40 acres for £100 from William Langley Powell, gentleman of Kooringa. Dr Wilson wrote in this March 1985 edition of the Willy Willy “About the turn of the century that land was acquired by the Knappstein family as one of the Stanley vineyards. Mick Knappstein recalls that other than a few stray vines along fence lines there was no evidence of former vineyard, however there was one old and probably the remains of a second, cellar cut into the side of the hill. Clare Council records of the 1850s refer to there being three “gardens” on the property; the term “garden” being peculiar to the region for any vine or fruit plantation.”

Robert Noye in his book “Clare, a District History” published in 1975 states on page 195 “Another early doctor was Anton Sokolowski who practised farming as well as medicine. He made, and drank, his own wine. Because all calls were made on horseback, Dr Sokolowski kept a number of good riding horses. He covered long distances and after attending a sick or injured person would often find that a messenger had arrived and was waiting to take him to another patient. Sometimes it was days before he was able to return home. He had a special horse, a chestnut, for night work. Frank Treloar has told how his father was riding along a road one night when he overtook the doctor who was fast asleep in his saddle. For some distance he quietly rode beside the sleeping man who suddenly jerked awake to inquire “Now where do you want me to go?” The doctor tried to reserve Sunday for consultations at home.

Dr Sokolowski was a skilful surgeon and adept at maternity cases. He was fond of blood-letting and if a patient was subject to headaches, he applied leeches to draw off some “bad” blood. If the headaches were severe he would resort to “cupping”. Devoted to his people, he was deeply mourned when in 1862 he was knocked from his saddle by a branch of a tree and killed. Dr Sokolowski was buried in St Mark’s churchyard at Penwortham, in a tomb engraved with grapes and sunflowers and the following inscription: “Long will he live in the memory of those whom he relieved and the tears of his mourning widow and of the suffering Poor for whom he spent his life will long yet witness his truly Christian charity.”

On 22.11.1864 Dr Sokolowski’s widow married Valentine Mayr who was a winemaker at Sevenhill and later at Rosenberg Cellars, Watervale.

SURGEON MAJOR GENERAL HINTON ST. GEORGE

Henry Benjamin Thomas Lambert Hinton St George was born on 7.3.1813 and lived in Hampshire, England. His father was Baron Hudson Hinton St George, a special advisor to the World Banks and a private bank owner. Young Henry attended private school from age 5 to 15 then he studied medicine specialising in surgery. From 1832 to 1834 he was a student of London Hospital before gaining his membership of the Royal College of Surgeons in 1835. On 25.5.1835, Dr St George commenced working at the Westminster Hospital. Soon he became interested in the glamour of the Bengal Army and in 1839 he was appointed a surgeon in the Bengal Army. In all he made three trips to Calcutta from England. In 1841 Surgeon Major St George married Lady Susanne Crocker, a relative of the Duke and Duchess of Devonshire. They had met in Calcutta

whilst Lady Susanne was returning to England after she had been bridesmaid for her sister June's wedding to Dr W. H. Sholl in Australia. Henry and Susanne St George eventually had five children – one son and four daughters.

Upon his retirement from the Bengal Army in 1869 with the rank of Surgeon Major General, Henry Hinton St George moved to Tasmania where he practised as a surgeon. His son, Reginald, was later to play cricket for Tasmania. Eventually Surgeon Major General Hinton St George moved to Adelaide and lived in a home he built at Brighton.

In the early 1890s he came to Penola in the Coonawarra district of South Australia, as a guest of Mr John Riddoch, a well-known local identity. Mr Riddoch was selling some of his land for closer settlement and development of the local district for fruit growing. Mr Riddoch owned Yallum Park, "Yallum" being the Aboriginal word for "grassy". It was a grand estate, which included Yallum House, one of the finest country houses in South Australia. 1147 acres were divided up into 10 to 15 acre blocks with 30 acres set aside as a township in the centre. Mr Riddoch's daughter-in-law named the new fruit colony "Coonawarra", another Aboriginal word, this one meaning "honeysuckle rise" because the area was so well covered with honeysuckle. In 1900 Dr St George acquired blocks 7 and 8 (approximately 20 acres) and built a large house from Mt Gambier stone. An orchard of 700 apricot trees plus apples, plums, peaches, almonds, pears and lemons was planted along with an 8½ acres vineyard.

Surgeon Major General Hinton St George lived to be 104 and was the oldest living member of the Royal College of Surgeons. The property remained in the Hinton family until his grand daughter-in-law Mrs Edith Hinton sold it to Owen Wyniatt.

Subsequently Lindeman's bought it from Wynniatt in 1966. The first St George release by Lindemans was a Cabernet Sauvignon in 1973. The 1980 vintage Cabernet Sauvignon won the prestigious Jimmy Watson trophy in Melbourne in 1981 thus testifying to Dr Hinton St George's original judgement in planting his vineyard at the turn of the century.

DR OTTO WIEN-SMITH

Dr Otto Wien-Smith was born on 17.10.1853 at Aberdeen in north-east Scotland. He was the second son of Alexander Smith and went to school in Edinburgh and at Norwood in London. He trained as a doctor at Edinburgh University graduating in 1875 M.B., M.Chr. Whilst at Edinburgh he was a student of Lord Lister. After graduating he became medical officer on board the Peninsular and Oriental Line steam ships before settling in Clare, South Australia, in 1878 in partnership with another "wine doctor", Dr Bain (also discussed in this book). After Dr Bain's retirement, he entered into partnership with his brother, Dr A.A. Smith.

In 1889 he returned to Edinburgh to complete his M.D. He was the medical officer at Clare Hospital where (no doubt under Lord Lister's influence) he introduced strict sanitary conditions to help fight infectious disease and was responsible for reducing typhoid fever in the district. He also was an authority on hydatid cyst disease.

In 1891 he married Miss Blanche Richardson of Adelaide and together they had six children, one of whom, Geoffrey, also became a doctor. In fact, Dr Otto Wien-Smith took his M.D. from Adelaide University at the same time as when Geoffrey graduated.

Like most doctors at that time in the country areas, Dr Wien-Smith was prominent in the community. In 1904 he became the first in South Australia, north of Adelaide to buy a car. He was instrumental in having a high school built at Clare and a new hospital building. He was heavily involved with the Stanley Agricultural and Horticultural Society and became chief of the Caledonian Society.

In 1920 Dr Wien-Smith retired from practice after 42 years practising in Clare only to become Mayor of Clare in 1922 and 1923 during which time he promoted local sports, especially football, tennis and cricket. Dr Geoffrey Smith took over his father's practice.

Dr Wien-Smith's involvement in the wine industry was through the Stanley Wine Company. When it was established in 1893 the Clare district was producing the grapes but there were few wineries to process them so four prominent locals decided to establish the Stanley Wine Company. The four were Dr Otto Wien-Smith, Magnus Badger, the local lawyer, John Christison, one of the largest local grape growers who also was the owner and brewery master of the Enterprise Brewery and Joseph Knappstein, another large local grape grower.

The first wine was made in 1895 consisting of 3,000 gallons of both red and white wine and the cellars were opened in February 1897. The following extract from the "Observer" newspaper of 13.2.1897 reports on John Christison's speech made at the opening. It explains why the Stanley Wine Company was established:

“Mr J. Christison ... thought he might give a little bit of the history of this concern from the commencement. A lot of vines had been planted in the district; he had planted a good few himself and although they had people going around lecturing and advising them, at the time he was very much afraid that when the vines began to bear these gentlemen’s advice would not come quite true. They told them that if they provided the grapes there would be no difficulty at all in selling them. It was said that if they planted, there would be people to buy the fruit and make the wine ... it struck him that something would have to be done to make the grapes grown in the district into wine ...”
(46).

By 1903 the Company was well established, producing 100,000 gallons of wine annually. To sell such a large quantity of wine in Australia with its limited market due to its small population was difficult so Joseph Knappstein established export markets in Europe. He gradually became the dominant partner in the business and by 1912 had bought out all the other partners including Dr Otto Wien-Smith. Joseph Knappstein continued to expand the company right up to his death in 1919. Today the company is still successfully managed by his descendants.

On Friday 20/5/1932 Dr Otto Wien-Smith died at his residence “Windybrae”, Clare, and was buried at the Clare cemetery.

DR AILEEN CONNAN OF “AKERINGA WINES”

Akeringa Wines was established in 1972 when 53 acres of land was purchased by Dr Aileen Forsyth Connan, an Adelaide gynaecologist, and Dr Lindsay Wilkie, a

hypnotherapist, from Willunga in South Australia. Akeringa is Aboriginal for “upon the plains” and was adopted as the name of the vineyard because it was located upon the Willunga plain.

Dr Aileen Connan was born in Aberdeen, Scotland, in 1930 and graduated M.B.B.Ch., B.A.O. from Queens University in Belfast in 1954. Later Dr Connan completed at M.D. at Queens University as well as a M.P.H. at the University of California and specialised in Obstetrics and Gynaecology gaining her F.R.C.O.G. and F.R.A.C.O.G. Dr Connan is a Clinical academic at the University of Adelaide and practises at the Queen Elizabeth Hospital when she is not working in Medical Administration with the South Australian Health Commission.

Dr Lindsay Wilkie is also of Scottish descent being born in Leith in 1925. He studied medicine at the Edinburgh School of Medicine becoming L.R.C.P. Edin., L.R.C.S. Edin. in 1948. He also has his L.R.F.P. + S. Glasgow and F.R.C.G.P. London. Dr Wilkie is a full time hypnotherapist and member of the Australian Society for hypnosis.

Between 1952 and 1965 Dr Wilkie had been the Medical Officer for an Edinburgh distiller and a wine shipper. He also was a member of the United Kingdom Wine Lovers Society and imported and bottled wine for his own cellar. From this exposure to various wines came a desire to make a good red wine and a vintage port.

The Akeringa vineyard had been planted with 6 acres of Dorodillo and 14 acres of Shiraz in 1971. After the purchase by Dr Connan and Dr Wilkie in 1972, plantings continued. Four acres of Pinot Noir were planted in 1973, 16 acres of Cabernet

Sauvignon in 1973 and 1974 and finally 3 acres each of Riesling, Muller-Thurgau and Gewurtztraminer in 1978. The winery was built between 1976 and 1977 with a capacity of 50 tonnes initially in time for the first full vintage in 1977.

The biggest crush was 56.6 tonnes in 1979. The 1981 vintage produced 1,800 gallons of Shiraz, 700 gallons of Cabernet, 220 gallons of Pinot Noir, 1,000 gallons of sparkling white wine made from Dorodillo grapes called “Willungador”, 1,000 gallons of a dry white wine made mainly from Dorodillo and 1,200 gallons of a vintage port, which did very well on the wine show circuit, winning a gold medal at the Bristol Wine Show in England in 1980 and a silver medal in the Melbourne Wine Show in 1981.

In February 1982 the winery and vineyard were sold. The winery building is no longer used as a winery and the vineyard was sold separately on three titles to other growers.

DR BRIAN CORNISH OF “FINNISS PARK ESTATE”

“Finniss Park Estate” was established in 1972 at Currency Creek in South Australia. The vineyard of 60 acres was a partnership 50% owned by Ron Peebles, a veterinary surgeon and 25% each by Dr Brian Cornish, an orthopaedic surgeon and Dr John Slade, an ophthalmologist. It had a 2 kilometre frontage on the Finniss River, hence its name and ferry boats carried tourists to the vineyard for barbecues and wine tastings in 1983 and 1984. A ferry boat features on the wine label, which was applied to the wine bottle sideways so that the river boat appeared as a “ship in the bottle”.

Dr John Slade was born in 1923 in South Australia. He graduated M.B.B.S. from Adelaide University in 1946 specialising as an ophthalmologist, gaining his D.O.R.C.S.Eng. in 1951 and his F.R.A.C.O. in 1978.

Dr Brian Cornish was also born in South Australia, but a year later and also graduated from Adelaide University a year later. He gained as an orthopaedic surgeon, gaining his F.R.C.S.Eng. and F.R.C.S.Ed. in 1955 and finally his F.R.A.C.S. in 1957. Both men now practise in Adelaide.

Rob Peebles was the prime mover in the venture, which was to establish a 100 acre vineyard with a 100 acre almond grove, along with cattle and sheep on the 1500 acre property. The motives for establishing the vineyard were:

1. To develop a vineyard in a relatively cool area on well drained soils of sand over clay or deep sand on reasonably priced land.
2. Production of grapes for a quality red wine.
3. Planting of Rhine Riesling to supply apparent demand.
4. Later planting and grafting of other grape varieties such as Chardonnay, Sauvignon Blanc, Traminer and Chenin Blanc.
5. Development of a winery to supply Riverboat tourist trade.

Twenty acres of Cabernet Sauvignon were planted in 1972 and again in 1973. Five acres of Shiraz were planted in 1973. In 1974 10 acres of Rhine Riesling were planted and 1975 saw 3 acres of Rhine Riesling and 2 acres of Traminer planted. 1980 saw

grafting carried out, with 2 acres of Cabernet Sauvignon grafted to Chardonnay, 1 acre of Shiraz to Chenin Blanc and 2 acres of Shiraz to Sauvignon Blanc.

The vines were planted by a mechanical planting machine trellised on a double top wire on a “T” suitable for mechanical harvesting and watered by supplementary drip irrigation.

The grapes were sold to various wineries including Wirra Wirra, Petaluma, Lightwines, Orlando and Basedows. No winery was ever built, but wine was made under the Finnis Park label from estate grown grapes.

Problems for the vineyard included birds, strong south easterly winds and a drop off of enthusiasm as markets proved difficult to establish. Eventually the vineyard was sold in 1984 and the new owner had all the vines uprooted in the Government’s “vine-pull” scheme so no trace remains of the vineyard now.

According to Brian Cornish “The one and only Cabernet Sauvignon of 1980 vintage was an excellent wine”.

DR DONALD ENGLISH OF “OLIVE HILL”

Donald English was born at Mount Gambier in South Australia in 1944 and graduated from Adelaide University in 1968. He later gained his D.(Obst.) R.COg 1971 and F.R.A.C.G.P. 1975 and now is a member of a Family Practice in Adelaide. Dr English was a partner in a group which included Peter Waller (Scientific Officer, Water

Department of South Australia), Barbara Magee (Virologist) and Bevan Wilson (Laboratory Technician, Wine Research Institute, Adelaide). Together they bought 20 acres at Clarendon Road, Clarendon in 1973. This land had been planted with 5 acres of Grenache in 1903. In 1973 they bought a further 15 acres at Seaview Road, McLaren Vale, where 5 acres were planted with Shiraz, Cabernet Sauvignon, Rhine Riesling, Traminer and Pinot Noir.

The winery was built in 1975-76 and has a capacity of 70 tons. In 1984 the winery was sold after the death of Peter Waller. Family commitments and community problems were contributing factors to the decision to sell.

DR RICHARD HAMILTON OF “RICHARD HAMILTON” AND “LECONFIELD”

The Hamilton family has been involved in the South Australian wine industry from its earliest days. The original Richard Hamilton established the famous Ewell vineyards and winery in 1837, not long after the colony of South Australia was first settled.

Dr Richard Hamilton was born in Adelaide and graduated from Adelaide University in 1969. He trained as a plastic surgeon, specialising in hand microsurgery, gaining his F.R.A.C.S. in 1974.

In 1972 Dr Hamilton established his Willunga vineyard in McLaren Vale. The vineyard was planted mainly with white grape varieties. Dr Hamilton was the first in McLaren Vale to plant Chardonnay. Other whites planted are Semillon, Rhine Riesling, Chenin Blanc and Sauvignon Blanc. Some Cabernet Sauvignon was also planted, but the main

area to offer red grape varieties is at Dr Hamilton's other vineyard "Leconfield" in the Coonawarra region, further south west. At McLaren Vale, Dr Hamilton was helped by his father, Burton and his brother, Hugh.

Dr Hamilton's uncle, Sydney Hamilton, was wine maker at Hamilton's Ewell vineyards from 1917 to 1955. Whilst there he pioneered in the 1930's cold fermentation and refrigeration in the making of white wines. Whilst in retirement at the age of 76 he still wanted to make classic Bordeaux style reds, so in 1974 he bought a 67 acre dairy farm in the northern Coonawarra region, calling it Leconfield and planted Cabernet Sauvignon, Shiraz and some Rhine Riesling.

It was called Leconfield after Lord Leconfield of Retworth, Sussex, who had five illegitimate sons by Elizabeth Ayliffe. The eldest was Thomas Hamilton Ayliffe, who arrived in South Australia in 1837 to seek his fortune. In 1895 Thomal Ayliffe's grand daughter married Syd Hamilton's father. In 1981 Syd sold Leconfield to his nephew, Dr Richard Hamilton, who now owns complementary vineyards – Leconfield mainly producing reds, approximately 15,000 cases and Richard Hamilton's Willunga vineyard producing whites, approximately 20,000 cases.

DR DOUG HEWITSON OF "WAKEFIELD RIVER ESTATES"

Dr Douglas Hewitson graduated from Adelaide University in 1962, subsequently gaining his F.R.A.C.P. and now a G.P. at Balaklava. His viticultural knowledge has been from "lots of labouring in the vineyard" and his oenological instruction has been from the Wakefield River Estates wine maker, James Irving, who established Hardy's

Siegersdorf label, made Falkenbergs winery into Krondorf and was a senior executive at Saltram's.

In 1972 Dr Hewitson, in partnership with George Heritage, Ron Westwood and Jim Irvine, bought land on the alluvial soil banks of the River Wakefield at Balaklava, 100 kilometres north-west of Adelaide. 1420 Shiraz and 715 Cabernet Sauvignon vines were planted. In 1982 Cabernet was planted, but unfortunately they were all eaten by starlings. Wakefield River Estates has no winery and the grapes were processed separately at Krondorf Winery from 1975 to 1977, Saltram from 1978 to 1981 and Mastersons from 1982, under the direction of Jim Irvine. Annual production was 600-1,000 cases of a Cabernet Sauvignon/Shiraz blend.

The last vintage was in 1983. Now all the grapes are sold as clean skins to Melbourne buyers.

DR HUGH ARTHUR LLOYD OF "CHATEAU BONNE SANTE"

Dr Hugh Arthur Lloyd was born in Adelaide, South Australia. After studying medicine at Adelaide University he graduated M.B.B.S. in 1940 and later became a GP in Adelaide.

In 1967, in conjunction with wine consultant Doug Collett, he bought the winery called Chateau Bonne Sante, dating from 1860 and its 8 hectare vineyard. Originally Dr Lloyd wanted to grow almonds, but developed the wine bug instead. His vineyard is set on a

hill above the Seaview vineyards of McLaren Vale, overlooking the valley and St Vincents Gulf.

In 1968 Dr Lloyd bought out Doug Collett's share in the venture and began to restore the winery, calling it Coriole. Graham Stevens was the wine maker until 1979. The first Coriole wine was a Shiraz made in 1970. Now Dr Lloyd's son, Mark, has taken over that duty and runs the business, which now has an annual crush of 150 tonnes from the 20 hectares planted to Cabernet Sauvignon, Shiraz, Chenin Blanc, Rhine Riesling and Chardonnay, producing on average 7,000 cases of wine annually.

Coriole has been famous for its reds, but now is producing good whites and experimenting with some new varieties such as Touriga and Sangiovese. We may see a Coriole vintage Port eventually. Coriole reds have a greater finesse than the traditional reds of the district due to cool fermentation, annual new oak and concentration on smaller quantities.

DR GREG MARKEY OF "MARKLEW"

Gregory Barton Markey was born in 1929 in Adelaide, South Australia. He graduated M.B.B.S. from Adelaide University in 1953 and trained at the Royal Adelaide Hospital. During training in General Surgery in England he gained his F.R.C.S.(Edin.) in 1960, his F.R.C.S.(Eng.) in 1962 and returned to Australia where he gained his F.R.A.C.S. in 1973. He is now a General Surgeon in Whyalla.

In 1978, 120 acres was purchased and Dr Markey and his partner, John Lewis, called the vineyard “Marklew”. One acre of Shiraz and one acre of Rhine Riesling were planted in that first year. In the following year, 1979, 6 acres of Shiraz, 7 acres of Rhine Riesling and 7 acres of Cabernet Sauvignon were planted. Small quantities of wine have been made elsewhere, but in 1987 a winery was constructed.

“Marklew” is located at Middleton in South Australia and is the first vineyard in the area. Thus, Dr Markey continues the pioneering traditions of the Australian Medical Profession.

DR DAVID MITCHELL OF “SETTLEMENT WINE COMPANY”

Dr David John Mitchell was born in Adelaide and graduated M.B.B.S. in 1970 from Adelaide University. After training at Queen Elizabeth’s Hospital he became a General Practitioner in Adelaide’s southern suburbs.

In 1976 Dr Mitchell and his winemaking partner, Vincenzo Berlingieri, bought the six hectares of vineyard and the winery at McLaren Vale called the Settlement Wine Company, which was established in 1968. Also on the property is a 150 year old cottage used as the sales centre.

The Settlement Wine Company has come a long way in such a short period of time. Berlingieri blends reds and white wines from grapes bought from the best areas of South Australia, resulting in big red wines of immense deep colour, fruit flavour and character.

Tragedy struck in early 1987, three weeks before vintage, when the winery was totally destroyed by fire. All the equipment, the building and the maturing stock were destroyed. The company has risen as a phoenix from the ashes, as portrayed on its new wine label, and shows great promise for the future.

Dr Mitchell has produced a popular gimmicky wine idea called “Dr David’s Plasma Port”, which is a light, young port presented in a plasma bottle with attached intravenous giving set – a touch of the medical macabre.

The Settlement Wine Company label no longer exists.

DR WILLIAM HERBERT SCHOLZ OF “THE WILLOWS”

Dr William Herbert Scholz was born on the 24th January 1928 at Nurioopta in the Barossa Valley in South Australia. Both his father, Wilhelm and grandfather, Johann Gottfried were noted physiotherapists and were very competent in orthopaedics, treating patients in their hospital at “The Willows” in the Barossa Valley.

Johann Gottfried Scholz was born in 1805 at Johnsdorf, a village south-west of Liegnas Silesia in Prussia (now the village is called Jaszkow, near Legnica in Poland). J G Scholz was one of many Lutherans who suffered religious persecution under the reign of King Friedrich Wilhelm III of Prussia, who wanted to form one combined protestant state religion. The first Lutherans migrated to South Australia from Hamburg on board the “Prince George” on the 8th June 1838, arriving at Port Adelaide on Sunday the 20th

November 1838. J G Scholz left Hamburg on the 25th May 1845 on board the “Heerjeebhoy Rustomjee Patel”, arriving at Port Adelaide on the 17th September 1845.

These German migrants later helped develop the Barossa Valley vineyards and gave it its Germanic flavour. J G Scholz, bonesetter and masseur, established his farm, vineyard and hospital at his property “The Willows” in 1846. Prior to coming to South Australia, J G Scholz had served as a surgeon in the Prussian Army, as had generations of his ancestors before him. A much larger hospital, capable of accommodating 30 patients, replaced the original cottage “Willows Hospital” in 1883.

After early education at Light Pass School, Nurioopta High School and Immanuel College, Dr W H Scholz went to Adelaide University to study medicine, gaining his M.B.B.S. in 1953. He did his internship at Royal Adelaide Hospital, then worked as a GP in Adelaide, at Natimuk in Victoria for 4 years, then in Loxton for 16 years.

In 1975 the Scholz family returned to the Barossa Valley, staying at the family home “The Willows” at Light Pass, whilst Dr W M Scholz worked as a GP at nearby Angaston.

Upon returning Dr Scholz began to reorganise and expand the well established vineyard. The oldest planting was 3.6 hectares of Semillon in 1936. Subsequent plantings were Chardonnay 1.2 hectares, Croucher 1.4 hectares, Tokay 3.2 hectares, Pedro 1.5 hectares, Rhine Riesling 3.5 hectares, Traminer 1.3 hectares, Cabernet Sauvignon 2.4 hectares, Pinot Noir 5.6 hectares, Shiraz 2.0 hectares and Malbec 1.1

hectares. Dr Scholz was the first viticulturalist in the Barossa Valley to take Pinot Noir seriously.

Normally Dr Scholz sold his grapes to Peter Lehmann's winery, but was keen to market wines under his own "Willows Vineyard" label. This dream was well established when unfortunately Dr Scholz died on the 20th February 1988, leaving his wife, Joan, and four children – Elizabeth, Felicity, Peter and Michael. Today the "Willows Vineyard" markets its own wine made by Peter and Michael Scholz, thus continuing the long established family tradition. The wine is made at the Peter Lehmann winery, where Peter Scholz works as a wine maker. About 20% of the Scholz crop is sold under the "Willows Vineyard" label, the rest is sold to Peter Lehmann.

Today, Peter and Michael Scholz are the wine makers.

DR JAMES WATTS OF "FOX CREEK"

Dr James Watts is the most academically senior of all Australia's Wine Doctors, being the Professor of Surgery at Prince Henry's Hospital in Melbourne (1968-75) and currently Clinical Professor of Surgery at the Flinders Medical Centre in Adelaide (from 1975).

James McKinnon Watts was born in Bendigo, Victoria in 1932. He graduated M.B.B.S. from Melbourne University in 1956. In 1962 he was a Surgical Research Fellow at Leeds in England and gained his F.R.A.C.S. From 1963 to 1964 he was a Lecturer in

Surgery at the University of Leeds. In 1965 he went to California to do more surgical research. Today Professor Watts specialises in gastro-intestinal and colo-rectal surgery.

In 1984 Professor Watts bought 92 acres at Willunga in McLaren Vale and planted 7 acres of Chardonnay and 5 acres of Cabernet Sauvignon. In 1985 and 1986 five more acres of Cabernet Sauvignon and 4 acres of Semillon were planted, whilst in 1987 two acres of Cabernet Franc and 5 acres of Sauvignon Blanc were planted. Nothing happened in 1988, but 10 acres of Shiraz were planted in 1989.

The vineyard is a shareholder in Southern Vales Wines Australia Pty Ltd and is run by Professor Watts' son, Paul. Daughter Sara completed a Bachelor of Applied Science in Oenology at Roseworthy College in 1989, so it will become a truly family affair.

Fox Creek wines are now well established, with an excellent reputation and production of 35,000 cases.

DRS PATRICIA AND JOHN WILSON OF "THE WILSON VINEYARD"

Drs Patricia and John Wilson began their Wilson Vineyard in the Polish Hill River area in the Clare Valley, north of Adelaide, with the purchase of their first block of land consisting of 66 acres in 1973. Subsequently they purchased a further 83 acres in 1979. Today they have a thriving business and John is spending much time writing about wine and promoting the Polish Hill River area in general and the Wilson Winery in particular in his "Willy Willy" journal, which comes out every three months.

The Polish Hill River area was the site of Australia's first Polish community in the 1850's. Dr Anton Sokolowski was Australia's first Polish surgeon and he developed a vineyard in the area during this period. Dr Sokolowski is discussed elsewhere.

Dr Patricia Anne Wilson was born in 1946 in Sydney and graduated M.B.B.S. from Adelaide University in 1970. After training at the Queen Elizabeth Hospital, Woodville and the Adelaide Children's Hospital, she now works as a General Practitioner locally.

Dr John Leslie Wilson was also born in 1946, but in Adelaide. He also graduated M.B.B.S. from Adelaide University in 1970. After also training at the Queen Elizabeth Hospital, Woodville, Dr Wilson went to Broken Hill Hospital in 1972. Later he became a Fellow of the Australian College of Occupational Therapists. Short technical college courses and courses at Roseworthy Agricultural College gave John Wilson the necessary knowledge to commence the venture.

The vineyard was started with a "fruit salad" block in 1974. Now 6 hectares are planted with Cabernet Sauvignon, Merlot, Pinot Noir, Chardonnay, Rhine Riesling, Malbec and Zin Fandel. The areas of Gewurztraminer have been graded over Pinot Noir. A new 1 hectare area of Chardonnay was planted across the Stone Cutting Road in 1987, bringing the total area of the vineyard to 7 hectares.

The original winery was built in 1979 for the 1980 vintage. The new winery was built in 1985, with a capacity of 70 tonnes. A new cellar has just been built to store casks and maturing bottles by digging into the side of a hill and using pre-cast concrete blocks to form the roof and walls. The front of the cellar is made from stone and has a tasting area

leading onto a paved forecourt. Earth covers the whole cellar, giving it a buried appearance and providing good insulation.

John experiments a bit with each vintage. One block of Pinot Noir is on deep, silty soil where the grapes lack the usual Pinot Noir colour and body so he has made it into a dry white wine by not letting the juice be in contact with the red skins and calls it Pinot Clair – “Clair” being the French for “clear”. He also makes a wine from the unusual Zinfandel grape.

WINE ASSOCIATED DOCTORS

The following six biographies relate to men who were either medical practitioners or given “doctor” status and made a significant contribution to the promotion of wine in Australia, stopping short of actually planting their own vineyard and making their own wine.

REV. DR BACKHAUS

Rev. Dr George Henry Backhaus was a German Catholic priest who, like other clergymen, advocated the production of wine to counteract the drunkenness in Australia due to rum. Dr Backhaus became the priest at the Bendigo diggings and was known as the “Goldfields Shepherd”. After the gold ran out and there was nothing to replace it to keep the town going, Dr Backhaus persuaded the Germans who had come to the Bendigo diggings to plant vineyards.

George Henry Backhaus was born on the 15th February 1812 at Paderborn in Westphalia (now part of Germany). He was the eldest of nine children and his father was the local shoe and boot merchant. Rev. Backhaus showed great enthusiasm and scholastic brilliance for religious matters and was sent to complete his religious training at the College of the Propagation of the Faith in Rome, after studying at the University of Würzburg in 1831. He was ordained on the 25th August 1836 and graduated with a Doctorate of Divinity.

Rev. Dr Bachaus believed that fulfilment of his priestly vocation was in the New World. He journeyed to Calcutta, leaving Rome on the 5th September 1836. Besides his ordinary pastoral work in the newly established Vicariate of Bengal, Rev. Backhaus also acted as Chaplain to British troops. Whilst in India, Rev. Backhaus studied Indian herbal medicine as another way of complementing his homeopathy training. Homoeopathy is the science of treating disease with small doses of the thing that causes it (not unlike systematic desensitisation of allergy as used today). It had originated in the late eighteenth century in Germany, near Backhaus' birthplace of Paderborn, hence Backhaus was exposed to its teaching from an early age. With his training in homoeopathy and Indian herbal medicine, Father Backhaus developed quite a reputation as a healer of the sick. After many years in the hot Bengal climate, Father Backhaus developed liver disease and was told to go to live in a cooler climate for medical reasons.

He left Bengal in June 1846 and travelled to Sydney via Singapore and Batavia. Here he stayed for eleven months before sailing for Adelaide on the Janus on the 20th October 1847 to work amongst his countrymen who had settled around Adelaide, mainly in the Barossa Valley. The colony of South Australia was going through some hard times and eventually the Diocese of Adelaide could not afford to keep him.

When gold was discovered in Victoria many people left South Australia to go to the diggings. At one stage it was thought that South Australia would be abandoned. Father Backhaus reasoned that a priest would be needed at the diggings so on the 4th March 1852, Bishop Goold appointed him "the first priest to take charge of the Catholic population on the Victorian goldfields".

Rev. Dr Backhaus travelled to Golden Gully in the Bendigo Valley via Forest Creek. On Sunday the 2nd May 1852 Rev. Dr Backhaus celebrated his first Mass in a tent. Sandhurst (as the town of Bendigo was known then) had become the busiest goldfield at that time.

Eventually Rev. Dr Backhaus established a permanent church and school. He was one of the main people responsible for establishing the Bendigo Hospital, a local water supply, the local fire brigade, the introduction of local government, the erection of a Town Hall and the establishment of a railway to Melbourne.

Whilst at the diggings, Rev. Dr Backhaus practiced medicine. People thought he was a Doctor of Medicine and didn't realise he was a Doctor of Divinity. His herbal and homoeopathic treatments were used to help the sick and Backhaus acquired a reputation as a healer within the diggings. His religious background and input would have helped the healing psychology as well.

Rev. Dr Backhaus travelled to Europe from late 1863 until early 1866. In April 1867 Dr Backhaus' replacement at Bendigo resigned, so Backhaus returned immediately.

In September 1874 the Most Rev. Dr Martin Crane was consecrated as Sandhurst's first Bishop. By 1880 Rev. Dr Backhaus "realised that his labour in God's vineyard was also drawing to a close". He retired in 1881 and lived in the Melbourne suburb of Brighton. On the 29th August 1882 he suffered a severe "fainting fit" or heart turn. His nephew, Theodore Mundelein, took Rev. Dr Backhaus back to Sandhurst to die. On Thursday

the 7th September 1882 he died aged 71 years. He was buried in the grounds of St Killian's Church, Bendigo.

Viticulture had commenced in the Bendigo area as early as 1855 when a Frenchman called James Bladier planted his vineyard around Epsom, must north of the town. When the gold ran out Rev. Dr Backhaus encouraged the German diggers to plant vineyards. Carle Heine, Albert Bruhn, Carl Pohl, W Greiffenhagen, Frederick Grosse and Adolphe Fucks, were early Germans who took up his call. By 1880 nearly 600 acres of vines surrounded Bendigo, only to be destroyed by phylloxera within a decade, never to be replanted again.

DR SAM BENWELL

Dr Sam Benwell graduated M.B.B.S. from Melbourne University in 1941 and served in the Australian Army Medical Corps from 1941 to 1946. After the Second World War he set up practice in suburban Melbourne and founded a club "The Medical Friends of Wine", which met at Jimmy Watson's in Carlton. He intended to establish a vineyard at Bacchus Marsh near Melbourne, but his plan did not eventuate.

Dr Benwell has been a noted writer about wine. His book "Journey to Wine in Victoria" (Pitman Publishing) is a classic work now enjoying its third edition. It is the most readable authority on the vineyards of Victoria. He has also written for journals, a film script and a wine primer for schools (Oxford Press).

Dr Benwell still practices at Clifton Hill and Carlton in Melbourne.

REV. DR BLEASDALE

John Ignatius Bleasdale was not a medical doctor, but a Doctor of Divinity. He was very closely associated with the medical profession and was Victoria's leading wine advocate in the 1850's, 1860's and 1870's. He had in common with two other famous colonial clergymen, the Rev. Samuel Marsden (the flogging parson) and the Rev. Dr John Dunmore Lang, the promotion of sensible consumption of table wine as a means to counter the wide-spread drunkenness due to spirits, especially rum, in the colony at the time. Unlike the other two clergymen, Dr Bleasdale did not establish his own vineyard.

John Bleasdale was born in Lancashire, England, in 1822 and was educated at Preston. From 1835 to 1845 Bleasdale trained as a clergyman, first at the English College, Lisbon, Portugal, then at St Mary's College, Ascot, Birmingham. Following his ordainment by Cardinal Wiseman, Rev. Bleasdale served as a military chaplain in Britain. Between 1849 and 1850 Dr Geoghogan appealed for priests to come to Victoria and Rev. Bleasdale responded, arriving in Victoria in 1851 and being appointed to the mission at Geelong. The following anecdote tells of Bleasdale's first experiences of Melbourne and why he felt he was justified having an interest in wine:

“As I walked up Elizabeth Street in February, I think 1851, I naturally enough after a voyage of 100 days, bought a bunch of grapes and then at once found myself again in a country that ought to grow good wine. Not many days afterwards as I was passing down Elizabeth Street before noon, I witnessed for the first but by no means the only time a dozen or so of bushmen, at the Bush

Inn, near the corner of Great Bourke Street, more or less drunk, who importuned me to have a drink and one of them, having dipped a pannikin into a bucket lying on the footpath near the bar door, offered me the contents, say half a pint of rum and water by the smell about half-and-half. From that time I turned my attention and all the knowledge I possessed then to forwarding wine growing and drinking as the one efficient cure for spirit-drinking and drunkenness” (47).

Whilst in Geelong, Bleasdale visited the local vineyards and realised the great potential of the Geelong district as a viticultural area. Most of the local vigneronns were Swiss settlers whose grape growing efforts had been interrupted by the huge demand for fresh fruit and vegetables demanded by the gold rush diggers.

In 1853 Bleasdale was transferred to the seminary at St Francis Church in Melbourne. The seminary was later transferred to St Patrick’s College on the East Hill in 1855. There Bleasdale became vice-president and began to pursue his deep interest in science, eventually becoming recognised as the Catholic clergyman’s scientific authority. He was a foundation member of the Melbourne Microscopical Society and this interest led him to become engaged in histological and chemical work at Melbourne hospital. Because of his deep involvement in medical work he was made an honorary member of the Medical Society of Victoria (or an honorary doctor). Bleasdale had other scientific interests as well. He was a member of the Royal Society of Victoria, a Fellow of the Geographical and Linnean Societies and was a member of the committee to establish a natural history museum in Melbourne. Bleasdale strongly advocated the foundation of a chemistry school and a mineralogy school attached to the proposed museum.

During the 1860's Dr Bleasdale wrote many papers about colonial wine. He reviewed the colonial wines, warned of the mental and physical effects of spirit drinking and advocated the use of wines "in the interest of health and morality". Whilst attending meetings of the Medical Society of Victoria, Bleasdale often brought samples of wines to convert the doctors to his cause. On the 13th May 1867 Dr Bleasdale read a paper entitled "On Colonial Wines" before the Royal Society of Victoria.

In 1865, in recognition of his diverse scientific interests and abilities, Bleasdale was appointed to the planning committee for the Intercolonial Exhibition. Further public recognition followed with his many public appointments. He became a trustee of the Melbourne Public Library, Museum and National Gallery. He also became a member of the Denominational Schools' Board, the Central Board of Health and the Commission for Technical Education.

Despite all these notable appointments and achievements, Dr Bleasdale was the object of much fun and mockery. The Melbourne "Punch" dubbed him "Dr Blazes" and one cartoonist drew a caricature of him florid-faced and glass in hand, lolling on top of a wine barrel. One of his former parishoners, one Charles Agen Atkin, used Dr Bleasdale's image to advertise his quinine wine. It is a pity that this man's great contribution to promotion of Australian wine was belittled in such a way.

In 1866 he was secretary of the Catholic Education Committee and then became Chancellor of the Archdiocese of Melbourne in 1874. During this time he formulated the policies necessary to expand the independent education system in Victoria.

By the late 1870's Rev. Dr Bleasdale became disillusioned with his position in Victoria so he emigrated to San Francisco in 1877. After a long illness, he died in June 1884.

Today no memorial exists to him in Victoria and his writings are forgotten, but a winery in South Australia was named in his honour.

DR GEORGE BUSBY

Dr George Busby was the brother of James Busby, the "Father of the Australian Wine Industry", who wrote several books about viticulture in Australia including "A Treatise of the Culture of the Vine and the Art of Making Wine" in 1823; "Manual of Plain Directions for Planting and Cultivating Vineyards and for Making Wine in New South Wales" in 1830 and a Journal of his Continental Tour of 1831. James Busby also brought out one of the best collections of vines ever to come to Australia, including 365 varieties in 1832. One set of vines was planted at the Botanical Gardens at Farm Cove in Sydney and the duplicates were planted at his vineyard "Kirkton" in the Hunter Valley.

James Busby helped open up the Hunter Valley to viticulture by developing Kirkton and also helped promote viticulture in other areas and States by distributing cuttings to prospective vine growers. In 1830 Busby distributed over 20,000 cuttings to 50 growers in New South Wales. In 1839 James Busby sent cuttings to South Australia to help start the infant vine industry there.

One person with whom James Busby corresponded frequently was his brother, George, who lived in Bathurst. In one of his letters to James, George “reported that settlers in that district wanted more clippings”. So George Busby, through his relationship with James Busby helped promote viticulture in the Bathurst district in the early 1830’s.

Dr George Busby was born on the 18th December 1797 at Haddington, Scotland. He was educated at Belfast and Edinburgh, becoming an M.R.C.S. Edinburgh in 1823. After qualifying he came to Sydney in 1824 as a Colonial Surgeon serving at Norfolk Island, Newcastle and Moreton Bay.

In 1828 he became Colonial Surgeon to Bathurst, which was founded in 1815. His duties included being Surgeon to the Bathurst Hospital, Bathurst Gaol, Bathurst Watch House and factory, as well as the Military. Dr Busby served the Bathurst community well, after spending his own money to keep patients well.

The wine industry in Bathurst was started by George Ranken, who brought the first cuttings to Bathurst from England. The original grapes were called “Sweetwater”. They were large sour grapes from Portugal and Ranken planted them adjacent to Kellosiel House on Voights Creek, near the Macquarie River at Eglinton. The other early pioneer of the Bathurst Wine Industry was Thomas Fitzherbert Hawkins, who struck vine cuttings in his garden between 1826 and 1830.

The Bathurst Wine Industry never really flourished because frosts severely damaged the early flowering vines.

Dr George Busby died at Bathurst on the 29th January 1870.

DR PHILLIPS

Dr Gilbert Edward Phillips was born in Sydney in 1905. He was educated at the Blue Mountains Grammar School and at North Sydney High School. In 1923 he entered the Medical School at Sydney University with the Exhibition. In 1926 he obtained a BSc in physiology with First Class Honours and the University Medal. In 1928, whilst continuing his medical course, he gained a MSc in physiology, again with First Class Honours and the University Medal. The following year he graduated in medicine with Second Class Honours. In 1936 he became a Master of Surgery and in 1938 he became a F.R.A.C.S. Whilst at the University he was active in the Union and in sport. He gained University Blues in rowing and swimming, as well as being Captain and Interschool Champion (heavy division) for boxing. He was also a keen sailor.

From 1930 to 1934 Dr Phillips worked in the field of neurophysiology in England as a Lister Wilson Research Fellow and as a Rockefeller Foundation Fellow. He worked with Charles Sherrington of Oxford, Professor Adrian of Cambridge, Dr Gordon Holmes at the National Hospital for Nervous Diseases, Queen's Square, London and with Sir Hugh Cairns at London Hospital.

Upon his return to Sydney in 1934 he was made an assistant lecturer in surgery at Sydney University and Neurosurgeon at Lewisham Hospital. After 1935 he became a full lecturer in neurology and applied physiology in the department of anatomy and a full lecturer in surgery.

In 1937 and later he visited famous neurologists in England and America. During World War II Dr Phillips established the Air Force Research Unit at Richmond Air Base and later became a Lieutenant Colonel in the Royal Army Medical Corps assisting his old mentor, Sir Hugh Cairns, treat head injuries from the invasion of Germany. Just after the war, Cairns and Phillips were flown to Austria to treat American General Patton, who had sustained a fractured cervical vertebrae in a car accident. Just after this Dr Phillips had the first of many wide excisions, skin grafts and radium treatments for malignant melanoma of the right ankle. Eventually his right leg was amputated below the knee, but Dr Phillips continued to lecture, operate and travel overseas to visit leading neurophysiologists and neurosurgeons. On the 12th September 1952 at the young age of 47, when he was nearing the zenith of his career, Dr Phillips died from a pulmonary embolus following a secondary melanoma.

One lasting memorial to this brilliant and gifted man is The Australian Wine Consumers Co-operative Society Ltd., commonly referred to as the Wine Society, which he founded in 1946, to help his wine loving friends and colleagues to buy wine at a reasonable price by buying in bulk as a non-profit organisation. He was also President of the Wine and Food Society and gave the 6th J.K. Walker lecture on the 26th November 1949 entitled "The Appreciation of Wine", which was a discussion of the neurophysiology of those senses necessary to appreciate wine, namely taste and smell. This leading neurosurgeon was an oenophile, who believed in the medicinal virtues of good wine in moderation and did all he could to help people appreciate wine more fully.

DR JOHN WILLIAM SPRINGTHORPE

Dr John William Springthorpe was born in Wolverhampton, England, in 1855. He came to Sydney at an early age and was educated at Fort Street School, where he was Dux in 1869 before going on to Sydney Grammar School. In 1872 he entered Wesley College in Melbourne as a Walter Powell Scholar. He studied arts and medicine at Melbourne University, graduating M.A. in 1878 and B.M. in 1879.

His early medical work was at the Beechworth Asylum during the last days of the Kelly gang. He then travelled to England and in 1881 became the first Australian graduate to become a M.R.C.P.

In 1883 Dr Springthorpe returned to Melbourne where he gained his M.D. from Melbourne University in 1884 and commenced practice as a physician in Collins Street and at Melbourne Hospital.

Dr Springthorpe not only was a brilliant physician, but also a prolific writer of medical papers, writing on such varied topics as tuberculosis, pneumonia, typhoid fever and the importance of psychological factors in disease. In all he had published 99 papers and wrote one medical textbook. In 1887 he became lecturer in therapeutics, dietetics and hygiene at Melbourne University, where he advocated the preventative medicine virtues of a healthy diet. His textbook on the subject “Therapeutics, Dietetics and Hygiene” was published in Melbourne in two volumes in 1914. The following is the section dealing with the effects of and medicinal use of wine according to Dr Springthorpe, as written in his textbook:

“The wines, generally, are stronger alcoholically than the malt liquors, but contain less extractive, no hop, but astringents and acids as well as sugar. In the making of a wine a number of different yeasts set up a series of fermentations, one finally dominating and giving the characteristic bouquet, etc. Ordinarily, 16 per cent of alcohol inhibits the further fermentation, but many wines are fortified by the addition of further alcohol.

Composition. – The main classes are:-

- (1) *Strong dry*, generally fortified (port, sherry, madeira), up to 22 per cent.
- (2) *Strong sweet*, the same strength, but fruit sugar added to stay fermentation (Tokay, Malaga, sweet Chamboque).
- (3) *Aromatic* containing essential oils, strong alcoholically (Moselle, some Rhine wines).
- (4) *Sparkling* (from CO₂), champagne dry (8 per cent. sugar), sweet (16 per cent. sugar), up to 12 per cent. alcohol.
- (5) *Perfect*, the fermentation complete, of medium strength – useful as tonics (Bordeau, Burgundy (stronger and more sugar), Rhone, Rhine, Hock, etc.).
- (6) *Rough* – from tannic acid (weak and of slight medicinal value).

EFFECTS OF WINE.- A wine has thus to be fitted to the individual, and, as Druitt has said, the individual stomach is the only reliable test tube. The acid tends to inhibit salivary, gastric and pancreatic digestion, though appetite and constitution are stimulated.

USES.- Of all forms of alcohol, the lighter wines are those best suited for general stimulo-sedative use by the middle and upper classes, provided that suitable kinds are taken. As we have seen, most Australian wines are far too strong alcoholically, and until lighter wines are produced, are better diluted with some effervescent table water. They are also frequently immature, and the fermentation is very imperfect. For occasional and convivial use the weaker, “vin ordinaire.” Australian wine of the future will take a high place dietetically, though, probably, it will deservedly be replaced as a beverage between meals by weak, freshly infused tea”.

Dr Springthorpe was also heavily involved with the administrative side of medicine. In 1891 he was President of the Victorian Branch of the British Medical Association, Vice President of the Intercolonial Medical Congress in Sydney in 1892, President of the Hygiene Section of the Australian Association for the Advancement of Science in 1895, President of the Melbourne Medical Association in 1900. He was editor of the Australian Medical Gazette for many years and was one of the official visitors to the hospitals for the insane advocating better treatment for mental disorders. Dr Springthorpe showed a keen interest in the training and registration of dentists, becoming first Dean of the Faculty of Dentistry at the University of Melbourne. He helped found the Royal Victorian Trained Nurses Association, becoming President of the Council in 1901, became first Chairman of the Masseurs Registration Board of Victoria and had an active interest in first aid and the ambulance service. The Saint John's Association made him a Knight of Saint John of Jerusalem in 1912.

When World War I broke out, Dr Springthorpe enlisted and became a Lieutenant Colonel in the first hospital unit and served in Egypt with No. 2 Australian General Hospital, where he treated casualties from Gallipoli. He also served in France before working in England with the Third Australian Auxiliary Hospital, where he took a keen interest in war neurosis such as shell shock. Upon his return to Melbourne he treated soldiers with nervous disorders for the Repatriation Department and became interested in child welfare and mothercraft. He helped found the Tweddle Hospital for Babies and School of Mothercraft and was President of the Society for the Health of Women and Children in Victoria.

Dr Springthorpe had many other interests besides medicine. He was greatly interested in literature, art and gardening. In 1932 he wrote a play called "War's Awakening". He had a fine collection of paintings, possessing works by famous Australian artists such as Roberts, Conder, Streeton, Bunny, Heysen, Fox and Longstaff. His house at Murrumbeena had a beautiful garden called "Joyous Gard".

One month prior to his death he developed an illness that killed him on Saturday the 22nd April 1933. So ended a very full and worthwhile life helping others.

3.3 WINE AND HEALTH - CURRENT RESEARCH

3.3.1 INTRODUCTION

In this section I will examine the recent wine and health research, both from overseas and from Australia. It will focus on the three truly significant pieces of research that made us re-examine our attitude towards wine. Because these research papers are so important, they have been included in the Appendix.

Here I will also examine other aspects of wine research, namely comparing red and white wine, the anti-oxidant resveratrol and wine allergies, side effects, hangovers and organic wines.

Before discussing the current research into the Medicinal Virtues of Alcohol, especially wine, in moderation we must define the term moderation. The Australian National Health and Medical Research Council's "4 + 2" guidelines for safe drinking are the standard the author uses, i.e, a maximum of four standard drinks per day for an adult male and a maximum of two standard drinks per day for an adult female, where a standard drink is the equivalent of 10 gms. of alcohol or approximately 120-50 mls of wine depending on the strength of the wine. Women should consume less than men because they are generally smaller, have a relatively higher fat to muscle ratio than men (alcohol is lipo phobic, i.e, prefers to go to tissues other than fat) and women have half the amount of alcohol dehydrogenase (the enzyme that metabolises alcohol) compared with men.

One must also exclude from the following recommendations anyone with a pre-existing disease that could be adversely affected by alcohol. These include diseases of the stomach (e.g. ulcers), liver (e.g. cirrhosis), pancreas (e.g. pancreatitis), nervous system (e.g. neuropathy) and heart (e.g. myocarditis, myocardopathy). One must also disclaim under age drinking and binge drinking, which is becoming a popular form of abuse.

The French physiologist, Claude Bernard, introduced the experimental method because he, in the mid 1800's, was the first to induce disease artificially for experimental purposes, thus ushering in a new scientific age of experimental research culminating in today's epidemiological studies.

Professor Alois Pick, from the Vienna Institute of Hygiene, showed that adding wine to water made it safe to drink during the many cholera epidemics in Europe after the Franco-Prussian War. This was known by the ancients, but had to be rediscovered in modern times because we had forgotten about the use of wine as a medicine. Later Jacques Masquelier at the University of Bordeaux in 1953 showed that the anthocyanins (polyphenols) activated in fermented wine were responsible for its anti-bacterial effect (1), and not its alcohol content.

Other researchers investigated wine using new scientific methods. Between 1893 and 1898 Yale University physiologists Russell Chittenden, Lafayette Mendel and Holmes Jackson showed that alcoholic beverages promoted gastric secretions, stomach motility and pancreatic secretions (2). Theodore Althausser at the University of California's Gastrointestinal Research Laboratory showed that white wine doubled fat absorption in 1960 (3). Franz Goetz in 1948 at the Permanent Foundation Institute of Medical

Research in Oakland showed that wine increased appetite (4). While in 1957 Ephraim Engleman of the University of California Arthritis Clinical Study Centre showed that wine prevented gout (5).

In 1906 Benedict and Torok of the First Medical Clinic in Budapest (6) and later Serianni at the Institute of Diet and Nutrition in Rome in 1937 (7) showed that wine reduced diabetes because it contained an insulin-like substance. Experimenters found other dietary benefits of wine over the years. Carles in 1880 discovered iron which was good for anaemia, (8) Lucia and Hunt in 1957 showed wine had more potassium than sodium, which was good for patients with hypertension and cardiac diseases (9). Gottlieb in 1959 showed the influence of wine's magnesium reducing hypercholesterolaemia and atherogenesis (10).

In 1928, Randoin demonstrated Vit C and B complex in wine (11). This led other researchers to find other vitamins such as folate in appreciable quantities, and to show that the yeast during fermentation released additional amounts of these vitamins.

The Stanford neurologist Henry Newman in 1942 showed that the absorption of alcohol from wine is much slower than from other alcoholic beverages because of the buffering capacity of the wine (12). In 1956, Greenberg and Carpenter from the Yale University's Laboratory of Applied Biodynamics proved that wine produced a gentle and sustained tranquillising effect compared to the brief and abrupt effects from alcohol. They argued that wine had been used so widely over the centuries, not only as a food and as a medicine but because it protected humans against stress and tension (13) and made them feel good.

This thesis is only focusing on wine and not non-alcoholic grape juice. With all the publicity about the medicinal virtues of wine and especially red wine lately, some entrepreneurs wanting to capitalise on this have promoted non-alcoholic grape juice or capsules containing concentrated red grape skins as an alternative to alcoholic grape wine claiming that one may obtain the same health benefit. This is not true, as much of the health benefits (raised good cholesterol, lowered bad cholesterol and anticoagulation) is partly due to the alcohol content in the wine and the antioxidants in wine are much greater because the fermentation process enhances their activity, as shown by Dr. Edwin Frankel.

Dr. Frankel Ph.D., is a wine researcher at the University of California in Davis, California who has studied and compared the antioxidant activity of wine and grape juice. He has shown that red grapes such as Flame Seedless and Black Seedless have phenolic compounds in the order of 425-480 gallic acid equivalent in mg./l respectively compared with red wine such as Petite Sirah, which had a phenolic compound level of 4100 gallic acid equivalent in mg./l., i.e. nearly ten times greater than red grapes (14). This conclusion is open to question though, due to different grape varieties being used for comparison.

In other words the fermentation process greatly increased the phenolic compounds that give grapes and wine their antioxidant properties.

After this overview of scientific research into wine this thesis will focus on the latest modern epidemiological and scientific studies into wine's health benefits.

The main cause of death in our society today is vascular disease. This accounts for nearly half of the deaths in most western countries, primarily from coronary heart disease (heart attacks), ischaemic cerebrovascular accidents (strokes or brain attacks), aortic aneurisms, deep vein thrombosis (clots in legs), 50% of all cases of renal failure or peripheral vascular disease.

In Australia, for example, in 1995 125,124 people died, of which 53,402 were due to diseases of the circulatory system, the largest cause of death, and more than the 33,805 due to malignant neoplasms (cancer) (15).

Alcohol, especially wine, significantly (some studies have shown by up to 50%) reduces vascular disease, especially heart attack, stroke and deep vein thrombosis by raising the HDL or High Density Lipoprotein (good Cholesterol), which clears away atheroma or the plaque that blocks our arteries. Alcohol, especially wine, also reduces LDL or Low Density Lipoprotein (bad cholesterol), which forms the atheroma in the first place. These are long-term effects, but wine in moderation also has short-term (24 hour) effects, whereby it acts as an antioxidant and as an anticoagulant or anti-blood clotting agent, thus reducing clot or thrombus formation, which many people take half an aspirin a day to achieve. Such clots can break off and cause an embolism, blocking the artery further downstream or seal off a ruptured atheromatous plaque, hence causing a complete obstruction of the artery resulting in a heart attack, for example, or seal off a ruptured atheromatous plaque. Latest research has now focused on the role of various anti-oxidants, such as the phenolic free radicals resveratrol, quercetin and epicatechin, in wine that inhibit LDL or low density lipoprotein (bad cholesterol) from oxidising.

LDL needs to be oxidised before it can be stored in vessel walls to form atheroma, which can lead to blockage of the arteries and subsequent heart attack or stroke. So this is a fourth mechanism by which alcohol prevents vascular disease and it is wine which is the alcoholic beverage full of antioxidants.

SUMMARY OF BENEFICIAL EFFECTS OF WINE ON VASCULAR DISEASE

1. Increased good cholesterol (HDL)
2. Decreased bad cholesterol (LDL)
3. Anticoagulant (thins the blood)
4. Anti-oxidant
5. Reduces stress

One of the World's leading epidemiologists and Emeritus Regius Professor of Medicine at Oxford University, Sir Richard Doll, F.R.S., D.Sc., D.M. (Oxon), F.R.C.P., believes the positive effect of alcohol in moderation has been conclusively demonstrated. The U-shaped relationship between alcohol and disease, he believes, is irrefutable, "When we allow for age, smoking and other known risk factors, the moderate drinkers have the lowest total death rates and the lowest rates for vascular deaths".

In recent years, dozens of cohort studies from around the world have demonstrated that moderate alcohol and especially wine consumption can reduce the risk of cardiovascular disease, decrease overall mortality rates and potentially help prevent the development of other diseases and negative conditions. The Research and Education Department of the Wine Institute in California, for example, published in January 2000

“A Decade of Research on Moderate Consumption of Wine and Alcohol” based on the Wine Institute’s submission to the US Dietary Guidelines Advisory Committee. This publication contained 277 scientific references alone discussing the medicinal virtues of wine in moderation. This thesis will only examine the findings of the major research papers. This worldwide research consensus has resulted in certain changes in the world’s view of alcohol during just the last few years. It is starting to change the previously narrow view of alcohol consumption as having mostly negative effects. In a significant departure from the past, many major public health organisations and governments around the world now officially recognise that consuming alcohol, especially wine in moderation, can be part of a healthful diet. The World Health Organisation, the United States government, the United Kingdom’s government and the American Heart Association are among the health policy leaders that recently have issued new balanced alcohol statements, expressing caution in terms of alcohol abuse, but emphasising scientific findings that associate cardiovascular benefits with moderate consumption.

As early as 1980 the Honolulu Heart Study reported that moderate alcohol consumption was associated with a 50% reduction in the rate of coronary heart disease in Hawaii. Since then, in the United States of America, there have been other studies with similar results such as the Framingham Heart Study, Kaister Permanent Heart Study and the Harvard Physicians Health Study. There has also been Dr. Eric Rimm’s “Prospective Study of alcohol consumption and risk of coronary disease in men” (16), also known as the Male Health Professionals study involving over 51,000 men. Dr. Eric Rimm, an epidemiologist at Harvard University, concluded that: “these findings support the hypothesis that the inverse relation between alcohol consumption and risk of coronary

disease is causal”.

Another landmark paper from America was also from Harvard University, but this time from Professor Charles Hennekens, the Professor of Medicine there. His paper “A Prospective Study of Moderate Alcohol Consumption and the Risk of Coronary Disease and Stroke in Women” (17) involved over 87,000 female nurses. Professor Henneken’s conclusion states “These prospective data suggest that among middle-aged women, moderate alcohol consumption decreases the risks of coronary heart disease and ischaemic stroke but may increase the risk of subarachnoid haemorrhagen. It should be noted here, however, that 5-10% of strokes are haemorrhagic, and these would be made worse by the anticoagulant effect of alcohol. Again this has to be put into proper perspective by stating that the vast majority of strokes (90-95%) are ischaemic and hence would benefit from moderate alcohol consumption. Before leaving American studies, it is important to focus on the American Council on Science and Health’s 1995 publication “Does Moderate Alcohol Consumption Prolong Life?” (18). The Executive Summary following is self-explanatory and emphasises that “the net effect of the reported consumption of small to moderate amounts of alcohol is a reduction in total mortality of the drinking population”.

”Through the ages, conventional wisdom has been that the moderate intake of alcoholic beverages is consistent with a long and healthy life. Data from epidemiological studies within recent decades demonstrate that death rates from coronary heart disease are lower among consumers of small to moderate amounts of alcohol than among non-drinkers. Some of the proposed mechanisms for the beneficial health effects of

moderate alcohol consumption are:

alcohol lowers harmful LDL - cholesterol levels

alcohol raises protective HDL -cholesterol levels

alcohol decreases formation of blood clots in the arteries

alcohol increases coronary blood flow

alcohol increases oestrogen levels

The risk of cirrhosis, some cancers and certain other diseases increases with excessive alcohol consumption. At low to moderate levels of intake, however, the adverse effects on mortality from such causes do not outweigh the beneficial effects on mortality of the drinker from coronary heart disease. Thus, the net effect of the reported consumption of small to moderate amounts of alcohol is a reduction in total mortality of the drinking population.

The results of this report should not be viewed as an endorsement or justification for heavy drinking. Rather, the health effects of moderate alcohol consumption are presented so that the general public can make informed decisions”.

Dr. Norman Kaplan from the University of Texas in his paper “Bashing Booze: The danger of losing the benefits of moderate alcohol consumption” (19) has a similar opinion. Society should not lose sight of the benefits of moderate alcohol and especially wine consumption, when presented with the harmful effects of alcohol abuse by a vast minority.

There have been many other studies outside the USA such as the Japanese Physicians Study, the Shanghai China Cohort, the World Health Organisation's Monica Study, the Italian Rural Cohorts Study, The Seven Countries Study and the British Regional Heart Study. This review of the literature will now focus on some of the more important studies outside the USA. Dr. Rodney Jackson is an epidemiologist at the University of Auckland in New Zealand. His study "Alcohol consumption and risk of coronary heart disease" (20) drew attention to the 24 hour anticoagulant effect of alcohol. In other words, a moderate amount of alcohol needs to be consumed daily on a regular basis to prevent the clots forming that block off arteries as distinct from alcohol's effects on cholesterol, which are long-term effects. Dr. Jackson concluded: "The results support the hypothesis that light and moderate alcohol consumption reduces the risk of coronary heart disease. This protective effect in this population was not due to the misclassification of former drinkers with a high risk of coronary heart disease as non-drinkers" (21).

The paper "Alcohol and Stroke, a Case Control Study of Drinking Habits Past and Present" (22) by Dr. Helen Rodgers et al. from the University of Newcastle Upon Tyne concludes: "Lifelong abstention from alcohol is associated with an increased risk of stroke. Moderate alcohol consumption may protect against cerebrovascular disease". This again shows that abstinence is now considered a major vascular disease risk factor.

3.3.2 THE FRENCH PARADOX

In the June 20th 1992 edition of the British Medical Journal, the Lancet, there appeared what was to become the most famous pro-wine and health research paper ever

published. It was so important and influential that a segment was devoted to the topic and screened around the world on the popular current affairs television program “60 Minutes”.

The paper “Wine, Alcohol, Platelets and the French Paradox for Coronary Heart Disease” (23), was written by Professor Serge Renaud, an epidemiologist from the Nutrition and Vascular Physiopathology Research Unit in Bordeaux, France. He concluded that despite consuming what would be considered to be a coronary artery disease-inducing disaster diet (“a heart attack on a plate”), which is high in cholesterol and saturated fats (due to pate and rich creamy foods and sauces), the French people had a coronary heart disease rate nearly one third that of American and British people. That was the French Paradox - what protected the French from coronary heart disease, when theoretically they were doing everything wrong by eating the wrong foods and still smoking?

Professor Renaud showed that the factor that protected the French from coronary heart disease was their high consumption of wine compared with the Americans and British, who drank less alcohol and mainly in the forms of beer and spirits. Professor Renaud believed “that alcohol is an important dietary factor in the regulation of the coronary heart disease process” and was partly due to the much lower platelet aggregation of the wine consumers.

This landmark paper drew attention to the medicinal virtues of wine consumption, unlike any other research paper, and it has been widely quoted ever since. Many American health professionals were stunned, because despite their politically correct

position of recommending eating low cholesterol food, not consuming much alcohol and not smoking, they were still dying from coronary heart disease at a much higher rate than the French, who were enjoying life drinking wine, smoking and eating a diet of rich foods! Wine sales rose 15% in America after the screening of the “60 Minutes” television program. There was less puritanical behaviour in America afterwards. The other reason why the French Paradox paper was so significant is because it finally ended the influence of people such as Shaper, who continued to argue that the health benefits of consuming alcohol in moderation, versus abstainers and abusers, demonstrated in recent research papers, was due to past heavy drinkers and people who had to reduce their alcohol consumption because of pre-existing disease contaminating the reference group of alcohol abstainers or low consumers, so that this group looked bad while the moderation group by contrast looked good. All subsequent studies, since Shaper’s allegations and criticisms, have taken this factor into account and allowed for it in their research models and statistical analyses by elimination this contamination of the abstainer or low consumer category, so that only purely non drinkers, moderate drinkers and heavy drinkers are compared and the results still favour wine in moderation.

3.3.3 THE COPENHAGEN STUDY

There appeared in the 6th May 1995 edition of the British Medical Journal a revolutionary research paper, referred to as the Copenhagen Study, that verified all that the pro wine in moderation advocates had been saying for the past 5,000 years - that wine in moderation is the alcoholic beverage of choice for your health.

The paper was titled “Mortality Associated with moderate intakes of wine, beer or spirits” (24) and was a prospective population study involving 6,051 men and 7,234 women aged 30 to 70 years over 12 years by Dr. Morten Gronbaek of the Danish Epidemiology Science Centre, Institute of Preventative Medicine in Copenhagen, Denmark.

Prior to this paper all epidemiological research papers involving alcohol only compared abstainers, moderate drinkers and heavy drinkers. This was the first study to break up alcohol drinkers into the constituent types of alcohol i.e. wine, beer and spirits.

The results showed that moderate beer drinkers had no significant change in their death rates, whereas moderate spirits drinkers increased their death rate by a third and moderate wine drinkers reduced their death rate by up to 50%. These results have been verified by continual follow up of the study subject, and it has major significance for health planners, governments and preventative medicine advocates (such as the author of this thesis). It is far better for the patient to prevent a disease than to treat it; and sometimes one cannot treat it because one is too late (to treat it) such as when one dies a sudden death from a heart attack or a stroke. From a government point of view, it is far cheaper to prevent a disease such as vascular disease with oenotherapy (as advocated here), than to have to treat vascular disease with costly by-pass surgery or angioplasty; or to have to pay invalid pensions to survivors of heart attacks who cannot work due to heart failure; or survivors of strokes who cannot work due to paralysis or other resultant neurological deficit.

No pharmaceutical medicines currently available are able to claim a 50% reduction in death rate. The best antihypertensive medicine studies or anti-hypercholesterolemia medicine studies show up to a 33% reduction in death rates. So oenotherapy, which is not only very effective but also very palatable, should be taken seriously.

3.3.4 THE ONE FOR THE HEART STUDY

Before discussing the following two papers by Sir Richard Doll, it is worth considering his medical background and reputation. Sir Richard Doll is arguably the World's leading epidemiologist and his research findings should be accorded the corresponding respect.

Sir Richard Doll qualified in medicine at St. Thomas' Hospital Medical School, University of London in 1937 and worked for two years as a hospital intern and six years in the Royal Army Medical Corps before turning to research. From 1948 to 1969 he worked in the Medical Research Council's Statistical Research Unit, initially under Sir Austin Bradford Hill, and later as its Director. In 1969 Sir Richard became Regius Professor of Medicine in Oxford, and in 1979, the first warden of Green College, Oxford. Since his retirement in 1983 he has continued to work as an honorary consultant in the Imperial Cancer Research Fund's Cancer Studies Unit with Professor Richard Peto.

Together with Sir Austin he carried out a study of the causes of lung cancer, which, in 1950, established its relationship with smoking. He initiated a study of mortality in doctors in relation to their smoking habits, which showed that smoking also caused

many other diseases including myocardial infarction and chronic obstructive lung disease. His other work includes the first clear demonstration (in 1955) that asbestos can cause lung cancer, that ionising radiation can increase the risk of leukaemia proportional to dose, and that oral contraceptives cause a small risk of venous and arterial thrombosis. In recent years he has written reviews of the avoidable causes of cancer and the trends in cancer incidence and mortality. His current work includes studies of the effects of radon in houses, and of exposure to electromagnetic fields.

Sir Richard has served on many committees and councils, including those of the Royal Society, the Royal College of Physicians, the World Health Organisation, and the Medical Research Council. He was elected Fellow of the Royal College of Physicians in 1957 and Fellow of the Royal Society in 1966. He was knighted in 1971 and made a companion of Honour in 1996. He received the United Nations Award for cancer research in 1962, the British Medical Association's Gold Medal in 1983, the Royal Society's Royal Medal in 1986, and awards from Canada, France, Germany, Italy, Thailand and the USA. He has received honorary degrees from 12 universities.

In his paper "Mortality in relation to consumption of alcohol: 13 year's observations on male British doctors" (25) Sir Richard concludes - "Among British men in middle or older age the consumption of an average of one or two units of alcohol a day is associated with significantly lower all cause mortality than is the consumption of no alcohol, or the consumption of substantial amounts".

Sir Richard has followed this paper up with his definitive work titled "One for the heart" (26) published in the British Medical Journal in 1997, which conclusively shows that there is a net health benefit from consuming alcohol in moderation.

"The consumption of small and moderate amounts of alcohol reduces mortality from vascular disease by about a third.

The effect on a person's risk of death depends on the relative risks of vascular disease and of the causes of death that are aggravated by alcohol.

In middle aged and elderly men in Britain the beneficial effects on total mortality outweigh the harmful effects up to at least four units a day, in women up to some less.

The beneficial effect is due to the content of ethanol, not characteristics of any particular type of drink".

He also states in the article that: "The evidence for a beneficial effect [of consuming alcoholic beverages in moderation] is now massive", and when discussing the implications for public health he states, "The formulation of public policy is complicated by the conclusion that a certain amount of alcohol can have a beneficial effect on health, decreasing mortality from some major conditions to such an extent that in middle and old age it more than compensates for an increased mortality from others". So now the emphasis should be placed on harm minimisation by abusers and not reduction in overall alcohol consumption, which would be detrimental to moderate consumers.

Doll concludes “People should be treated as adults and should be told the facts. These still need to be refined in detail, but in broad outline they are quite clear: in middle and old age some small amount of alcohol within the range of one to four drinks each day reduces the risk of premature death, irrespective of the medium in which it is taken”.

Sir Richard Doll also makes some interesting historical comments in this paper such as in the Introduction “...its [alcohol] medicinal use was dying out [in 1937] except for people who were terminally ill, and [very importantly] there was certainly no idea that it might be of any use in preventing disease” and that “some people must have seen Pearl's report in 1926 of a U-shaped relation between mortality and the consumption of alcoholic beverages, but it was totally ignored by the medical profession”. This was a report on mortality called simply "Alcohol and Longevity" taken from American life insurance company statistics. It was censored and ignored as part of a conspiracy by the medical profession and especially medical journal editors, to hide any pro-alcohol good news research findings from the general public for fear that these findings would encourage alcohol abuse. This has been mentioned in the Current Research Literature Review section. Sir Richard Doll's view on this matter, stated in his conclusion, should be noted "People should be treated as adults and should be told the facts" or as Abraham Lincoln put it “Tell the people the truth and the country will be free” and so they should - society endows adults with the power to vote, drive cars, marry, raise children and be accountable at work which are all very responsible things to do, - so how are they all of a sudden not responsible enough to handle news about the health benefits of moderate alcohol consumption? Censorship like this is arrogant, criminal and above all counter productive because the people are being denied news about our

most potent preventative medicine which would ultimately reduce death rates better than by avoiding alcohol abuse by the vast minority.

3.3.5 CURRENT AUSTRALIAN RESEARCH INTO ALCOHOL AND HEALTH

This section of the thesis will deal with “home grown” Australian alcohol and health related research.

Australia's equivalent of the World famous Framingham Study in America is the Busselton Study in Western Australia, which was begun in 1966 by Dr. Kevin Cullen the local physician and founder of the famous Cullen's vineyard in the Margaret River district: His papers “Alcohol and Mortality in the Busselton Study” (27) and “Alcohol and Mortality in Busselton, Western Australia” (28) showed a significant inverse association between alcohol consumption and mortality with the lowest rates of total mortality being in the moderate consumers of alcohol. It should also be noted that the Busselton Study was the first in the World to report such findings in women.

Dr. Ian Walpole et al. at the Department of Paediatrics of the Princess Margaret Hospital in Perth examined the question of alcohol and pregnancy in their paper “Is there a foetal effect with low to moderate alcohol use before or during pregnancy?” (29) and concluded “this study fails to show any significant relationship between low to moderate pregnancy maternal alcohol intake and newborn clinical status. The outcome suggests that cautionary advice to pregnant women warning that any alcohol taken during pregnancy is potentially harmful to the foetus is inaccurate and therefore probably counterproductive”.

The Royal College of Obstetricians and Gynaecologists in London issued a policy statement in 1997 along the same lines.

Dr. Leon Simons is an Associate Professor of Medicine at the University of New South Wales and a colleague of mine who specialises in blood lipids. He has been conducting the Dubbo Study since 1988, trying to work out the causes of death in Australians over the age of 60. His papers “Predictions of mortality in the prospective Dubbo study of Australian elderly” (30) and “Alcohol intake and survival in the elderly, a 77 month follow up in the Dubbo study” (31) make very interesting reading. The findings show that as you get older so vascular disease becomes more important as the cause of death and as our population is progressively aging, so this fact becomes more relevant and important.

Professor Simons found that there were three significant factors that increased the death rate in elderly, namely being a diabetic (a 70% increase in death rate), having high blood pressure (a 70% increase in death rate) and being a smoker, which increased the death rate by 200%. All three factors are important risk factors in vascular disease pathogenesis. The study has also shown that there is only one thing that statistically lowered the death rate in the Dubbo elderly and that was consuming alcohol in moderation, which lowered the death rate by 51 %, both in men and women.

Professor Simons concluded that: "Alcohol intake in the Dubbo elderly appears to be independently associated with a significant increase in life expectancy".

A review of the Dubbo study, written by the author of this thesis, which was published in *Alcohol In Moderation (A.I.M.)* appears in Appendix 7.4.

The final piece of Australian research that shows that alcohol consumption in moderation is good for you comes from the Australian Wine Research Institute in Adelaide. Their paper “Wine in moderation: how could and should recent *in vitro* and *in vivo* data be interpreted?” (32) not only states that alcohol is good for you, but that there is again a net health benefit compared with abuse.

“The extensive epidemiological and limited *in vitro* data to date support the changing medical and regulatory perspective that the regular and moderate consumption of alcohol, including wine, has beneficial effects which often outweigh the detrimental or harmful effects for the general population. While the *in vitro* data to date supports the theory that wine has additional anti-oxidative effects, the limited *in vivo* data to date implies that any additional benefits of moderate wine consumption as compared to the other alcoholic beverages is marginal”.

3.3.6 RED WINE VERSUS WHITE WINE – IS THERE A DIFFERENCE IN HEALTH BENEFIT?

Ever since Professor Serge Renaud’s “French Paradox” paper (33), as published in the *Lancet* in 1991, wine consumers have had a mind-set that only red wine and not white wine is good for them. In fact, to gain significant health benefits, it does not matter whether it is red wine or white wine, so long as it is wine consumed in moderation on a regular daily basis.

It has been well documented that consuming wine in moderation can reduce death from all causes by up to 50% (34), to reduce vascular disease, by up to 50% (35), cancer by up to 24% (36), and also reduce stress related diseases. Vascular disease occurs when bad cholesterol (LDL) is deposited in artery walls, which swell up and eventually rupture. This causes a clot to form, which blocks off the artery, thus denying the tissue supplied by that artery of blood, causing the tissue to die.

Alcohol in moderation reduces the bad cholesterol level, raises the good cholesterol (HDL) level and acts as an anti-coagulant (blood clotting preventer). Good cholesterol clears away bad cholesterol from atheromatous plaques in artery walls and takes it back to the liver for remetabolism. Wine contains substances called anti-oxidants, which inhibit bad cholesterol from being incorporated in the artery wall and damage caused by the body's free radicals. These are toxic waste products, which help cause degenerative diseases in the body such as cancer, Alzheimer's disease, Parkinson's disease and aging.

The standard for antioxidants are vitamins C and E; however, wine contains the strongest antioxidants in nature called resveratrol, quercetin and epicatechin. These are five times stronger than vitamin E. Frankel (37) has shown that no matter how much vitamin E you take, its anti-oxidant activity plateaus at 20%, whereas wine's anti-oxidants will plateau at 100% after a couple glasses. It should also be noted here that the fermentation process of converting grapes into wine enhances the antioxidant level many times and also produces alcohol. This is why wine is by far more superior for your health than taking concentrated grape extract.

Professor Renaud's "French Paradox" is the observation that the French, despite eating a vascular disease predisposing diet rich in cholesterol, have significantly less coronary heart disease than other similarly advanced countries. The reason for this according to Professor Renaud is because the French are high consumers of wine. Professor Renaud advocates especially red wine, although his paper only mentioned alcohol and wine, not specifying red or white wine.

Dr. Frankel's research has shown that red wine contains more anti-oxidants than white wine. The amount varies according to the grape variety, region, vintage, climate (summer rainfall increases resveratrol levels, because grapes produce more resveratrol in their skins to protect themselves from fungus due to increases in atmospheric moisture); soil, storage in oak (oaked wines have more antioxidants than unoaked wines) and filtration techniques (Professor Geoff Skurray at the University of Western Sydney (38) has shown that the fining agent polyclar removed 92% of resveratrol and that casein, egg white and alginate also removed some resveratrol; whereas gelatin had relatively little effect).

However, the only relevance for the average wine drinker emerges, when one looks at studies which compare red and white wine consumption and mortality out in the real world, and not theoretically in a laboratory. There have been several studies which show that it doesn't matter. In 1995 Vinson and Hontz from the Department of Chemistry at the University of Scranton published a paper titled "Phenol Anti-oxidant Index: Comparative Antioxidant Effectiveness of Red and White Wines" (39). What this study showed, was that even though red wines had a higher phenol content than

white wines, “The white wines had a significantly lower IC50 (the concentration for 50% inhibition of low-density lipoprotein or bad cholesterol) and thus were better antioxidants than red wines”. The take-home message here is that it does not matter what the total antioxidant potential is, i.e. total antioxidant or phenol level, but how effective are these antioxidants at doing their job – in this case inhibiting bad cholesterol.

Dr. Karl Jung and Associates, at the University of Mainz, published a research paper in 1999 entitled “Moderate red and white wine consumption and the risk of Cardiovascular Disease” (40). The paper’s summary stated “white and red wine improved the antioxidative capacity in the blood. The sum of the changes in cardiovascular protective blood values, the “protective wine score”, which includes all parameters, showed a clear improvement in both wine groups. The scores for moderate wine consumption were higher than for water, and white wine scored higher than red wine. Systolic blood pressure reduced significantly in the white wine group, and the diastolic blood pressure reduced in both wine groups.

This study shows that moderate regular wine consumption reduces the risk of cardiovascular disease. The effects of both German wines, red and white were comparable, in some parameters white wine delivered even better results than red wine”.

Research in the United States by the Jordan Heart Research Foundation (41) found that free radicals were reduced by 15% in red wine drinkers and 34% by white wine drinkers, while red wine drinkers experienced a reduction in the blood’s clotting ability of 10% and white wine drinkers 20%.

So why are the anti-oxidant molecules in white wine apparently more effective than those found in red wine, even though they may be in greater number in red wine. The answer lies in research by Dr. Gordon Troup, a physicist at Monash University in Melbourne. Dr. Troup used an electron spin resonance spectroscope to examine the actual size of the various anti-oxidant molecules in wine and showed that those in white wine are smaller and thus more effective because they can get further out into the tissues to do their job. A biochemical analogy would be like comparing the smaller, more effective immunoglobulin IgG molecule, which gets to all the body's tissues to provide antibody coverage versus the larger immunoglobulin IgM, which is restricted to just the vascular system for its area of operation.

In a letter to the Editor of the International Journal of Food Science and Technology titled "Free Radical scavenging abilities of beverages" (42), Dr. Troup et al. point out that "...if the health-promoting properties of wines are related to their superoxide-scavenging abilities, then white wine is at least as effective as red".

Thus it can be seen that it does not matter which colour wine one drinks, because both red and white wine contain alcohol and enough antioxidants; and once you get up to 100% antioxidant activity in your body's tissues, anything extra is redundant anyway. What does matter is that one marries the right wine to the right food. Thus, the correct combination of wine and food is the most important criteria by which one chooses a wine – not just because it is a red!

3.3.7 RESVERATROL

Resveratrol, along with quercetin and epicatechin, is one of the main anti-oxidants found in wine. It is a phenolic bioflavonoid compound that acts as an antifungal agent in grapes especially during veraison (when the red grapes change from being a green colour to red) and in regions that are summer rainfall challenged. It occurs in higher concentrations in red wine than in white wine. Dr. Edwin Frankel, of Davis University in California, has shown that these antioxidants in wine are five times more potent as anti-oxidants than the benchmark antioxidant Vitamin E.

One of the main functions of anti-oxidants is to inhibit low density lipoprotein (LDL) or bad cholesterol from entering blood vessel walls and forming atheromatous plaques which eventually block off arteries causing vascular disease such as heart attack and stroke.

The other main function of antioxidants is to inhibit the action of free radicals, which are negatively charged rogue molecules (with one unpaired electron in their outer orbit). The body is continuously producing waste products from its many complex biochemical pathways. These waste products include free radicals, which become free agents causing biochemical havoc leading to such things as body degeneration, aging and cancer.

A new role for anti-oxidants has been found by researchers at the University of Milan.

Exciting new research into resveratrol is showing that it has other benefits besides its antioxidant role in reducing vascular disease and cancer etc. Scientists at the University of Milan under Alberto Bertelli have shown that resveratrol stimulates Map kinase, their paper having been published in the *New Scientist**. Map kinase stands for mitogen-activated-protein kinase, which is a proactive enzyme cascade forming one of the main intracellular signalling pathways stimulated by upstream activators such as resveratrol. As such, Map kinase cascades are very important intracellular signal transducer pathways playing a vital role in cell proliferation, differentiation and transformation. In the nervous system Map kinase stimulates nerve cells and helps them regenerate by up to sevenfold. Researchers found that the resveratrol made the human neural cells grow extensions that enabled them to connect to neighbouring nerve cells. This helps explain why wine drinkers have less of the neurodegenerative diseases such as Alzheimer's disease (commonest cause of dementia) and Parkinson's disease. The resveratrol in the wine helps the nerve cells in the brain to grow and connect. In neurodegenerative diseases these connections break down. "By daily reinforcing these contacts we can prevent Neuro degeneration" Dr. Bertelli has stated. Professor Jean-Marc Orgogozo, head of Neurology at the University Hospital of Bordeaux, published a paper "Wine consumption and dementia in the elderly: a prospective community study in the Bordeaux area"** , which similarly showed that moderate consumers of wine were less likely to develop neurodegenerative diseases. Consuming wine in moderation would also mean that the vascular tree within the brain would be less diseased, hence able to

* Bertelli, A., *et al.* Resveratrol, Map kinases and neuronal cells: might wine be a neuroprotectant? *Drugs under Experimental and Clinical Research*, 1999, Vol. XXV (2/3) pp 99-103

** Orgogozo, M., *et al* Wine Consumption and Dementia in the Elderly: A Prospective community study in the Bordeaux area, *Revue Neurologique*, Vol. 153 No. 2, 1997

supply the brain's nerves with more blood containing essential oxygen and glucose. This is another mechanism by which wine helps the brain function better. So wine in moderation could be referred to as "brain food" or "brain friendly" as it prevents strokes and nerve cell degeneration, which is in marked contrast to what was previously thought about the effects of any form of alcohol on the brain. Abuse of alcohol, however, severely damages nerve cells leading to Wernicke's encephalopathy, Korsakoff's syndrome, peripheral neuropathy and other forms of nerve degeneration.

New research by Professor John Pezzuto at the University of Illinois has shown that the antioxidant resveratrol also prevents human body cells from turning cancerous, and it inhibits the spread of cells that are already malignant. This has been supported by Dr. Serge Renaud's latest research, which has shown a 24 per cent reduction in death rates from cancer in moderate wine consumers.

Dr. Kindl at the University of Marburg in Germany has isolated the genes for the synthesis of resveratrol in grapevine DNA, so that these genes could be incorporated into new wine rootstock. This opens up a whole new area of preventative public health. Get your daily dose of the antioxidant resveratrol in a wonderful form – resveratrol enriched wine!

Original research in Australia by Professor Geoff Skurray at the University of Western Sydney has shown that different wine filtration techniques during wine making can greatly affect how much resveratrol is left in the wine after filtration. Various fining agents commonly used by oenologists were tested. Polyclar removed 92% of resveratrol. Casein, egg white and alginate also removed some resveratrol, whereas

gelatine had a variable, but relatively minor effect. So winemaking techniques, as well as grape variety (red wines contain more resveratrol than whites) and growing season (drought years produce more resveratrol), play an important role as to how much resveratrol there is in a wine.

Because wine contains so much anti-oxidant activity, along with its alcohol content, it has been shown to reduce death from vascular disease and death from all causes by up to 50% and reduce cancer rates by up to 24%. Thus, consuming wine in moderation appears to be the thinking person's health drink and one of our best preventative health measures.

3.3.8 WINE ALLERGIES, SIDE EFFECTS, HANGOVERS AND ORGANIC WINE

There are other harmful effects one can suffer from consuming wine, other than those suffered from straight abuse or excessive consumption. These harmful effects are those due to allergy and side effects in general, even with exposure to the smallest amounts of wine.

The Collins Dictionary defines allergy as a hypersensitivity to a substance that causes the body to react to any contact with that substance. As a doctor, the author defines allergy as an immune system mediated response by the body to an allergen or allergy causing foreign matter. Allergies usually manifest themselves as migraine headaches, hay fever, itch, rashes, bowel colic, diarrhoea, asthma, swollen face, changed behaviour and watery swollen eyes. etc.

An allergic response is a response to protect the body from allergens – harmful foreign matter that we become exposed to mainly in the form of pollens, dust, hairs, fibres, foods and drinks etc. Sometimes the allergic response can be excessive and the resulting body's "cure" can be worse than the allergic complaint and be life threatening, such as when one develops an anaphylactic response resulting in the laryngeal oedema (swelling up of the throat). If it is not treated straight away with adrenaline mainly, plus corticosteroids and antihistamines, one can choke to death.

Many consumers think that the main cause of allergy in wine is due to sulphur dioxide (SO₂). Sulphur dioxide is listed as 220 on the back label of the wine bottle and has been used as a preservative of foodstuffs since Roman times over 2,000 years ago. It always amuses the author when people say they are allergic to wine because of the SO₂; but when the author asks them if they eat dried fruit such as dried apricots, they say that is alright – not knowing the dried fruit, for example, contains a lot of SO₂ as a preservative!

What most of these people are allergic to in wine, along with most consumers, is either the histamines or tannins, both of which come from the skin of the grape and hence are usually found more in red wines than white wines. But allergy is idiosyncratic; in other words, it is up to the individual what they are allergic to. Hence the old saying – one man's food is another man's poison. Theoretically, one could be allergic to any one of the many thousands of components in wine and Dr Theron G Randolph has suggested that alcoholism is a severe form of food addiction, where the patient is addicted to other components in the beverage other than the alcohol (43).

As a general rule, from an allergic point of view, older wines are better than younger wines, as the histamines and tannins are less because they have been incorporated into the wine more with aging. My medical observations about wine and allergy are that bottled wine is better than cask wine, boutique wines are better than mass-produced commercial wines and white wines are better than red wines; however, this remains to be tested scientifically.

The Collins Dictionary defines a side effect as: “any unwanted non-therapeutic effect caused by a drug or as an undesirable secondary effect”. The author defines a side effect as any unwanted reaction to a substance, some of which can be harmful because not all side effects are harmful. A common example of a harmful side effect would be indigestion from arthritis drugs caused by gastritis or an inflamed stomach. This is not an allergy, but an unwanted harmful secondary effect of the drug. An example of a harmless side effect would be one’s urine going yellow when one takes multivitamins. It is of curiosity value only as it is causing no harm.

There are two rare medical conditions caused by alcohol (a component of wine), which would strictly be termed side effects. The first condition is where people become extremely aggressive and emotional after a few drinks. The biochemical cause is not understood, but it makes for a great possible legal defence if one committed an aggressive crime after one or two drinks.

The second condition is alcohol induced nymphomania; where consumption of a small amount of alcohol in a person with a pinealoma – a very rare benign tumour of the pineal gland in the brain – triggers off intense sexual arousal and subsequent sexual

behaviour, thus making alcohol the ultimate aphrodisiac in these people. The pineal gland secretes the hormone melatonin, which controls skin pigmentation and our wake/sleep cycle.

A hangover is where one develops headache, nausea, vomiting, lethargy and a dry mouth, due to excessive alcohol consumption. It is due to dehydration, especially of the brain, where it shrinks and toxic metabolites from the metabolism of alcohol. The reason one becomes dehydrated is because of the osmotic pressure and diuretic effects of alcohol. The way to prevent a hangover is either to drink less alcohol or drink plenty of water or soft drinks whilst consuming alcohol. The author always starts a meal or a party with a soft drink then the author has one after each alcoholic drink. A hangover is a side effect of excessive alcohol consumption.

The organic wine movement has sprung up recently to provide wine consumers with what are supposed to be chemical free wines, or are under the misguided delusion that they won't get an allergy because there is no sulphur dioxide in the wine. As stated earlier, one is more likely to get an allergy due to the histamines and tannins in the wine, which are natural substances that occur in all wines in varying degrees – and certainly even in organic wines!

There is a withholding period, which varies between three months and twelve hours, depending on the chemical used, between when one sprays the vineyard with anything, be it an insecticide, herbicide, fungicide or fertiliser and when one can pick the grapes, so there are minimal detectable amounts of such chemicals in the wine and any that do remain are usually removed by the yeast during the fermentation process. During the

wine making process, there are strict rules and regulations as to what can be added to the grape juices so that no harm occurs to the consumer. Only things such as yeast to start the fermentation process, sulphur dioxide (220) and ascorbic acid or vitamin C (300) as preservatives, and grape juice concentrate to adjust the sugar and subsequent alcohol level may be added. Hence great care is taken by the mainstream wine industry to avoid what the organic consumers are worried about and nothing is going to stop them getting an allergic reaction to the wine allergens histamine and tannin, because they are an integral and natural component of all wines.

Because preservative-free wines do not have preservatives added to them, they will not last as long as normal wines, hence one would have to consume them at an earlier age than would be ideal, because wines usually improve with bottle age and maturity. Preservative-free wines may still contain some SO₂ because some of the yeast strains causing fermentation produce SO₂ during fermentation – so “no added SO₂” may not mean no SO₂ present. Therefore preservative-free wines with no SO₂ would normally have to be consumed at a suboptimal age before they oxidise and turn to vinegar – not the best way to enjoy one’s wine.

The ideal is to use the minimal amounts of sprays and chemicals necessary to produce the best quality, healthy and disease-free grapes and wine, which cannot be guaranteed with organic wines. The author can see no valid reason for the organic wine movement. How many First Growths are now making their wines organically? None!

3.3.9 SUMMARY OF MEDICAL BENEFITS OF WINE IN MODERATION – CURRENT RESEARCH AND THINKING

This list is to show that there are many other health benefits from consuming wine in moderation besides those relating to the circulatory system.

1. Reduction of Vascular Disease (due to greatly improved blood flow) resulting in:
 1. Reduced Coronary Heart Disease
 2. Reduced Ischaemic Stroke
 3. Reduced Deep Vein Thrombosis
 4. Reduced Osteoporosis
 5. Increased Intellect in the Elderly
 6. Reduced Macular Degeneration (a common cause of blindness)
 7. Reduced Renal Failure
2. Tonic – wine contains many substances including most vitamins, minerals and trace Elements
3. Fat and cholesterol free source of carbohydrate
4. Reduced cancer
5. Reduced blood pressure

6. Antiseptic due to alcohol and more importantly polyphenols
7. Increases morale and appetite – nursing home and hospital patients
8. Wine contains Quercetin, Resveratrol and Epicatechin, which are potent anti-oxidants and also act as anti-carcinogens
9. Reduction in colds
10. Diabetes – dry wine only alcoholic drink that is allowed with diabetes as all the sugar has been converted to alcohol. Reduced insulin resistance
11. Reduced gallstones
12. Reduced kidney stones
13. Reduced Alzheimer's disease
14. Reduced Parkinson's disease
15. Improved digestion
16. Reduced H. Pylori infection of the stomach and duodenum leading to reduced ulcers

17. Improved physical condition of the elderly
18. Reduced Hepatitis A
19. Reduced stress and depression

3.4 METHODS TO PROMOTE WINE AND HEALTH – ACTION RESEARCH

3.4.1 INTRODUCTION

In this thesis I have endeavoured to show how wine in moderation is our most potent preventative medicine – a fact that modern medicine has forgotten and is now relearning. Here I will examine various ways and strategies how this good news about wine may be communicated to the public at large so that they may benefit – i.e. actioning the research and putting the research plan into action.

3.4.2 GOVERNMENT

Governments control taxation of alcoholic beverages, health departments, university medical schools, advertising laws, liquor licensing laws, drinking availability laws and packaging laws for example, all of which impact on the availability of wine to the public.

Australia has the most highly taxed (at 41 %) wine industry in the world. Less taxation on wine would make it cheaper and more readily available to everyone. Increasing taxes does not reduce abuse (because with high taxes the abusers drink lesser quality and cheaper drinks), but does reduce consumption in moderation by the vast majority who benefit from their moderation.

Health departments could undertake education campaigns to promote a better understanding of:

- (i) the health benefits of moderation
- (ii) what is moderation and a standard drink
- (iii) the health affects of abuse
- (iv) how to identify who should not drink alcohol

The campaign could start in primary school and continue for the rest of the life of the consumer.

Advertising and packaging laws could be changed to promote moderation, what it is and how many standard drinks are there in the bottle (already done). The wine labels could also promote the health benefits of moderation message besides the bad affects of abuse, hence become part of the health department campaign.

In America the labelling law made it compulsory to include a negative statement about alcohol on the back label; telling how the Surgeon General felt that alcohol should not be consumed by pregnant women (which actually is not harmful if in moderation) or drivers (which is not harmful for most people if the blood alcohol level is less that 0.05%), or people operating machinery; without balancing this statement with the health benefits of moderation. Now there has been a change of attitude and back labels can now state that there is a cardio protective effect from consuming alcohol in moderation.

Governments could also agree on what is a standard drink in grams of alcohol per drink, as well as what is the maximum daily consumption of alcohol allowable in grams/day.

The following chart (at the end of the Conclusion) shows the international standard drink ranges (from 6.3 gms. in Austria to 19.75 gms in Japan) and confusion as to the maximum daily allowance. A standard drink of 10 gms. of alcohol is the most logical as it is in the middle of the range, has been adopted by the most countries and is decimal.

Governments could also allocate more funds to wine and health research and alcohol abuse research, as well as change liquor licensing laws so that wine was more readily available to consumers.

3.4.3 MEDICAL SCHOOLS

Medical schools at universities should rethink their courses and change their attitude towards wine. Preferably they could include medical history and the history of wine as a medicine in their course, but if not, at least recognise and teach the health benefits of wine in moderation.

3.4.4 MEDICAL GROUPS

Medical groups such as the Australian Medical Association and the various medical colleges such as the Royal Australian College of General Practitioners or the Royal Australasian College of Physicians could make pro wine statements, endorsements and education campaigns for their members and the general public. The author established the Australian Medical Friends of Wine Society (AMFOWS) in 1989 to help educate doctors about wine and health. A similar group is established in California, USA.

The Australasian College of Cardiologists now recognises that being an abstainer from consuming alcohol is a major risk factor in the pathogenesis of vascular disease.

3.4.5 MEDIA

The various arms of the media could be used as part of the Health Department and Medical Groups' pro wine in moderation campaigns. If the general public see that there is health department and doctor support for the campaign, it is taken seriously and acted upon. Wine writers, science writers, medical writers, as well as lifestyle and wine magazines would be the appropriate vehicles for this campaign.

3.4.6 PHARMACEUTICAL COMPANIES

Pharmaceutical (drug) companies have a lot of money for health promotions and through their "drug reps" have direct access to all doctors, hence they are a perfect vehicle to help spread the pro wine in moderation message. For example, the drug company Pfizer used the author's "Wine and Health Diary", with all its pro wine in moderation information, as a yearly "thank you" Christmas present to 4000 Australian doctors who use their products.

3.4.7 WINE COMPANIES

It is naturally in the best interests of companies that produce wine to promote the health benefits of moderation through their advertising budgets or via their cellar door staff who have direct contact with the consumer public. McWilliams Wines in Australia is

pro wine and health and in 1994 commissioned the author to write a booklet called “Wine and Health”. They printed 100,000 copies and gave them away for free. They have commissioned the author to produce a new updated version of the booklet for release in 2005. McWilliams Wines has also established an Academy of Wine to educate people about all aspects of wine, including wine and health. The new edition of the “Wine and Health” booklet is part of the Academy’s program of education.

3.4.8 “THE WINE DOCTOR” BRAND

The author has devised the brand “The Wine Doctor” to be used to promote the wine and health message. The expression “The Wine Doctor” has been copyrighted in Australia, the UK and USA. The website www.winedoctor.info has been established and is full of pro wine in moderation facts and history. A “Wine Doctor” wine brand has been established for sale in supermarket chains with appropriate wine and health backup for the supermarket chain’s customers.

Other Wine Doctor promotional ideas include wine doctor books, posters and videos about the history of wine as a medicine and the health benefits of moderation. Also “Wine Doctor” diaries, calendars, hats, shirts, bags and coasters with “Wine Doctor” wine and health statements such as “Enjoy wine in moderation – your daily health drink” on them as well as a Wine Doctor logo.

Lectures, talks, tastings and articles by the Wine Doctor also occur.

3.4.9 PRODUCT LAUNCHES

Each Wine Doctor product will be launched with the appropriate media coverage to help promote the pro wine in moderation messages.

3.4.10 INTERNET

The internet is the latest vehicle for the media to promote wine and health. The author has his own website www.winedoctor.info, but there are many other pro-wine websites such as www.winepros.com.au, which is the wine website hosted by Australia's doyen of the wine industry Len Evans and Australia's wine authority James Halliday. The wine pros website is claimed to be the world's largest wine site with articles and information on all aspects of wine including wine and health written by the author of this thesis as the wine and health wine pro.

Alcohol in Moderation (AIM) has its Gateway website for which the author writes (www.aim-digest.com) and the Wine Institute in California also has its site (www.wineinstitute.org), as does the Australian Wine Research Institute in Adelaide (www.awri.com.au) – all of which are authoritative pro wine organisations on the internet.

3.4.11 INSURANCE COMPANIES

It was life insurance company life expectancy statistics that first showed a statistically positive correlation between moderate alcohol consumption and longevity in the early 1900's. Just as life insurance companies penalise members for being smokers with high premiums so they should reward moderate drinkers with lower premiums.

3.4.12 CONFERENCES

Medical Conferences are a good way to get a lot of doctors to hear through a specialist telling them, in the audience, the truth about wine and health. This endorsement from “on high” carries much weight with GP's (general practitioners).

Medical and Scientific organisations sometimes hold conferences specifically about wine or alcohol and health. The New York Academy of Sciences, for example, held such a conference titled “Alcohol and Wine in Health and Disease” in San Francisco in April 2001. Feedback from conferences such as this, held by prestigious neutral scientific organisations, such as this, give much credibility to the pro wine and health message.

The Wine Appreciation Guild of America held a forum on “MD Winemakers” in San Francisco in December 2004 to promote wine and health and plan to hold one in Chicago in 2005, in the home of the American Medical Association.

3.4.13 PUBLIC RELATIONS COMPANIES

Public Relations Companies could be employed by health departments, wine companies, drug companies, wine industry organisations and medical organisations to promote wine and health. They have the expertise in this field. I intend to use one from 2005 to promote “The Wine Doctor” concept.

3.4.14 CELEBRITIES

Public relations / advertising companies could promote the medicinal virtues of wine in moderation by using the services of celebrities from the medical profession such as professors or researchers, from the food industry, such as celebrity chefs and from the wine industry, such as famous winemakers. The author’s wine company “Pendarves Estate Pty Ltd” will be supplying the UK Celebrity Chef, Lloyd Grossman, with his label, Lloyd Grossman Wines, for 2005. This label’s promotion will include a wine and health component.

3.4.15 PERMANENT WINE DISPLAYS

Wine shows are temporary affairs, attached to agricultural shows, but there is a trend now for permanent wine displays. The first was Vinopolis (City of Wine) in London, which opened in 1999 where a whole passageway is devoted to the wine and health message and was co-written by the author and AIM. Australia’s National Wine Centre is now open in Adelaide’s Botanical Gardens. Robert Mondavi is behind a permanent wine centre in the Napa Valley in California. The author is going to establish a wine

and health museum at his vineyard, Pendarves. All these are appropriate venues for wine and health displays and education.

3.4.16 PRO-ALCOHOL ORGANISATIONS

The wine industry internationally is fighting back against the anti-alcohol lobby with pro-alcohol organisations such as AIM (Alcohol in Moderation), which was established with seed funding from the Robert Mondavi Wine Company in California.

AIM is run by Peter Duff from England and produces a quarterly journal and has an internet site called AIM Gateway. Peter Duff is advised by an International Editorial Board, including many doctors, on which the author is the Australian representative. AIM is an educational and promotional tool for wine in moderation that is neutral, hence has credibility with the media.

Other independent pro wine in moderation organisations include The Wine Institute in California, USA, and the Wine Appreciation Guild, also in California, USA.

3.4.17 WINE INDUSTRY ORGANISATIONS

The wine industry has its own organisations that promote the health benefits of moderate wine consumption specifically. In Australia they include the Wine Foundation, which is part of the Winemakers Federation of Australia, the Australian Wine Research Institute, whose Wine and Health Scientific Paper database is world famous, the Wolf Blass Foundation and the Society of Wine Educators.

The Wine Society of Australia, based in Sydney, has commissioned the author to write a regular wine and health column, for their 50,000 members, in their magazine which comes out every two months.

3.4.18 MEDICAL WINE DINNERS

Drug companies hold dinners for doctors all the time to promote their products. They are a perfect opportunity for the wine industry to also promote wine and health as all dinners have wine as an integral part of the meal, so they are always a good talking point at the dinner; hence a good lead into talking about wine and health.

3.4.19 BOOKS

Books about wine and health are an excellent way to sell the wine and health message. The latest books have been listed in the Literature Review but the author has released some books recently as well namely “Wine and Health – a new look at an old medicine” and “Dr. Norrie’s Advice on wine and health – thinking and drinking health”.

The Royal Post-Graduate Medical School at the University of London produced a book entitled: “Wine – A Scientific Exploration” in 2003. Each chapter was written by an expert in that field. The author wrote the chapter about the history of wine as a medicine. The book carries a lot of scientific weight and credibility with it and helps to

establish wine as the beverage of choice from a health point of view, or as the editors said “Wine is the new Scientific Superstar”.

In 2006 Mitchell Beazley (the world’s largest publisher of wine books) will publish my next book based on this PhD for world wide distribution, not only in English but also in Japanese, German and Chinese.

3.4.20 POSTER

The author has produced a wall poster about the history of wine as a medicine, moderation and safe wine drinking, which is a world first, hence a unique promotional vehicle for the wine and health message. It is hoped every wine consumer, retail wine outlet, cellar door and wine company around the world will have a copy displayed on their wall.

3.4.21 VIDEO

The author has produced a 45 minute demonstration video on wine and health, which is being looked at by a television company and a documentary making company to fund and produce a commercial version for sale to the public and television stations.

3.4.22 TELEVISION AND DOCUMENTARIES

The author appears monthly on Goodhealth TV, which is shown constantly in medical centres, doctor’s surgeries and major hospitals around Australia. The author appears as

‘The Wine Doctor’ to give advice about wine and health. The author is also producing a series of 12 short five minute documentaries about wine and health history for the Good Health TV Channel. Time-Warner cable TV in USA wants to commission a documentary series, based on this PhD, for use on their lifestyle channel in USA.

3.4.23 RETAIL STORES

The stores that sell wine, especially the large supermarket chains such as Tesco, ASDA, Morrisons, Safeways and Sainsburys in the UK, and Walmart in the USA, have a unique opportunity to educate their customers about wine and health, because they are so large and influential and their customers are a captive audience once they are within their stores. The author is being used to promote wine and health in all these stores from 2006 via the Loyd Grossman Wine label in the UK and a Walmart own brand, “Dr Philip Norrie Selection”, in the USA. This will be an interesting experiment in wine marketing that has the backing of the Wine Appreciation Guild in the USA. Walmart also want to sell copies of the author’s books, poster and videos.

4. CONCLUSION

In this thesis I have endeavored to show that there is a very large and authoritative pool of evidence from all over the world, and in Australia, showing a net health benefit from consuming alcohol and especially wine, in moderation – evidence and conclusions that must now be considered to be beyond doubt and question.

Consuming wine in moderation provides not only an increased quantity of life because it significantly reduces ones death rate, but also an increased quality of life due to the pleasure it gives. Thus, consuming wine in moderation is an ideal preventative health medicine to help us to die young, and as late as possible; providing increased quality and quantity of life in a highly desirable, consumer friendly package leading to a good compliance rate. What more could one want, so long as it was not abused? Wine also has the historical “track record” to back up its health status.

Yes, there is alcohol abuse with its resultant morbidity, mortality and financial cost to the community, but that price pales by comparison with that of the medicinal virtues of consuming alcohol, especially wine, in moderation. The abuse is more a function of the consumer and not of the product. To paraphrase Abraham Lincoln – the problem of alcoholism is not one of the use of a bad thing, but the abuse of a very good thing. In alcohol, and especially wine, our society has a medicine more powerful at lowering morbidity and mortality for most people than any conventional pharmaceutical company drug and in a much more palatable form. This is one of the rare situations where we can have our cake and eat it as well.

Society needs to recognise those at risk of abusing alcohol, such as the children of alcoholics because of the genetic factors in alcoholism, and educate them and the public in general about the harm and benefits of alcohol. As Paracelsus said in the sixteenth century, “Whether wine is a nourishment, medicine or poison is a matter of dosage”.

After reading the results of Sir Richard Doll’s 1997 and Professor Leon Simons’ 1996 research, for example, it is quite evident that there is a net health and cost benefit to our society from consuming alcohol, especially wine, in moderation. That puts the issue of alcohol and health into proper perspective. Sir Richard Doll’s reputation and research are beyond question and we should learn from his wisdom. In the summary points of his “One for the heart” study he notes: “in middle aged and elderly men in Britain the beneficial effects of total mortality outweigh the harmful effects up to at least 4 units/day, in women up to somewhat less” (1).

Who among us is competent to (and has the evidence to) question him?

The ideal is to minimise the harm due to the abuse of alcohol by the minority (5%) of abusers of alcohol, yet at the same time not penalise and discourage the vast majority (95%) of people who gain health benefits from their consumption of alcohol, especially wine, in moderation. It would be a tragedy to significantly reduce the health of the majority for the sake of the minority – a classic case of throwing out the baby with the bath water. That is why the author is against anything that would reduce the medical benefit of moderate consumption of alcohol, especially wine, to the vast majority of consumers on a regular daily basis.

This policy of harm reduction is now being promoted by realistic researchers in the alcohol abuse field because they now realise that it is more realistic and efficient to target alcohol abusers, and get them to reduce their consumption than it is to unrealistically get them to stop altogether. They also realise the folly of trying to unrealistically get total community alcohol consumption reduced, as was tried in America during the Prohibition era from 1919 to 1933 and by most Governments through the means of increased taxes on alcohol, as proposed by the Ledermann Theory.

Prohibition grew out of intense religious (especially Protestant) revivalism, which emphasised the pursuit of “puritanism” in all human beings. This led to the temperance movement, which in many countries during the 1800’s tried to have the sale of alcohol banned. Prohibition in America also led to the rise of criminal gangs who produced illegal alcohol called “bootlegging” and gang wars due to rivalry for areas of control within large cities and corruption of officials. Hence this later became socially unacceptable and was repealed by President Roosevelt.

Ledermann was a French demographer who in 1956 proposed his theory (2) that the relationship between the average per capita consumption and the number of heavy drinkers in any population is fixed and predictable. He claimed that if average consumption doubled, then the number of problem drinkers would quadruple, and if it tripled, the problem drinkers would increase nine-fold, and so on. The Ledermann Theory had immediate appeal to the less numerate of the anti-alcohol movement who lobbied governments to increase taxes on alcohol, with the aim of reducing both general consumption and heavy drinkers. In this thesis I have argued that if general

consumption is reduced, then society loses the important health benefits of moderate alcohol consumption by the vast majority and incurs the added associated costs of preventable ill health.

Ledermann's mathematics was found to be incorrect and speculative by Duffy in 1977(3), and his conclusions were refuted by empirical data from Britain, America and Scandinavia. Problem drinkers will still abuse alcohol no matter what the average per capita consumption and price of alcohol. If necessary they will move down to cheaper forms of alcohol, even to illegal "moonshine" and "metho". So, heavy drinking is independent of total alcohol availability and price. Abusers will always find a way of getting a drink. The only people to suffer from prohibition are the moderate consumers who gain benefit from their drinking. So the Ledermann Theory, and its associated heavy taxation and prohibition, has not and does not work. But education and focused harm reduction can work.

Two leaders in this new approach are Dr. Tim Stockwell from the National Centre for Research into the Prevention of Drug Abuse at Curtin University in Perth, Australia and Dr. Eric Single from the Canadian Centre of Substance Abuse in Toronto, Canada. In their combined paper, "Sharpening the focus of alcohol policy from aggregate consumption to harm and risk reduction" (4), they have this to say: "An argument is presented for shifting the main focus of the alcohol policy debate away from aggregate level of consumption as the key determinant of alcohol problems in favour of a sharper focus on the reduction of harm and of high risk drinking. This argument is developed by highlighting the advantages of the latter approach in relation to: (i) the ability to distinguish between low risk and harmful consumption of alcohol, (ii) the ability to

predict which drinkers are most likely to experience harmful consumption of alcohol, (iii) the acceptability of policy objectives to government and industry, and (iv) the acceptability of prevention strategies to the general public. It is suggested that this focused approach to the measurement and reduction of alcohol related harm is more likely to achieve tangible success in the policy arena than one which is overtly predicated upon the need to reduce total population consumption of alcohol”.

Dr. Single also wrote a paper entitled “Harm reduction as an alcohol-prevention strategy” (5). In this he stated “Harm-reduction programs, first developed in an attempt to mitigate the adverse consequences of illicit drug use, can be applied to alcohol-prevention programs as well. In fact, the movement toward harm reduction in illicit drug prevention may be closely paralleled by a similar trend in the alcohol-prevention field. Harm-reduction approaches to alcohol aim to diminish the negative consequences of intoxication (e.g., by using special glassware that breaks into fine particles instead of sharp pieces, thus reducing the chance of injury during pub fights). Such measures may receive increased attention as public support declines for restrictions on alcohol availability and new evidence emerges on the potential benefits of moderate alcohol consumption. In addition, analyses suggest that harm reduction may be an efficient approach, because it often focuses on minimising heavy drinking occasions, which predict drinking problems more strongly than general level of consumption”.

The anti-alcohol lobby has recognised that the latest research into the health benefits of moderate alcohol consumption has harmed their cause, so they have pushed the fact that health benefits, especially for vascular disease, only manifest themselves in the over 40

age group. Consequently the new argument by the anti-alcohol lobby is for alcohol control for anyone under the age of 40 because it was assumed that there had been shown no health benefit in this age group.

However, during the Vietnam War, soldiers killed who were autopsied showed fatty streaking in the walls of their arteries. Thus, strong, fit, eighteen and twenty year old American marines killed in Vietnam were showing signs of the beginnings of the vascular disease that was going to kill them in their 40's and 50's as a heart attack or stroke. This shows that vascular disease does not suddenly begin on one's 40th birthday, but that the pathogenesis of it goes back twenty or more years to one's teens and even earlier. Therefore, it is necessary to screen our young for risk factors for the pathogenesis of vascular disease from an early age to reduce and prevent this vascular disease epidemic. The American Heart Association, The Heart Research Institute and the National Heart Foundation of Australia, are now calling for such screening to occur. They want blood pressure, pulse, cholesterol, blood glucose and body mass index levels checked, as well as lifestyle factors such as diet, exercise and cigarette smoking assessed from an early age.

“This emphasises what we have all known for a long time about the onset of atherosclerosis – while events are occurring in the 50's-60's, the seed is sown for those events in late adolescence and early 20's” Professor Phil Harris, head of the Cardiology Department at Sydney's Royal Prince Alfred Hospital and President of the New South Wales branch of the National Heart Foundation of Australia (6).

Consequently, young people should be encouraged and educated to consume alcohol sensibly to prevent vascular and other diseases that would harm or kill them in later life i.e. to help them to die young as late as possible, to change their perception of wine from one of a beverage only for special occasions such as birthdays and celebrations to one of a daily health drink in moderation. In countries where wine is an integral part of the culture, such as in Mediterranean countries, and is regarded as a beverage of moderation to be consumed with food with your friends, alcohol abuse is not as large a problem as it is in countries where this is not the case.

As the greatest oenophile of his era, third President of the United States of America, author of the Declaration of Independence, and one of the greatest minds ever, Thomas Jefferson, had the following to say about wine, taxation and alcohol abuse: “No nation is drunken where wine is cheap, and none sober where the dearness of wine substitutes ardent spirits as the common beverage fix but the duty [taxation on wine] and we can drink wine here as cheap as we do grog and who will not prefer it? Its extended use will carry health and comfort to a much enlarged circle” and “I think it is a great error to consider a heavy tax on wines as a tax on luxury. On the contrary, it is a tax on the health of our citizens” (7).

In this thesis I have documented the health benefits from alcohol and health benefits from anti-oxidants. Wine, however, is the alcoholic beverage of choice because it is the only alcoholic beverage to contain not only alcohol, but also the strongest anti-oxidants known, and because its mode of consumption is the most healthful. Wine is usually sipped over a meal, during which one gains the benefit of the nourishment from the meal and the blood alcohol level is lower because the wine is consumed slowly over the

meal with a stomach containing food. This slows down and lengthens its gastric emptying time, and hence slows down the absorption of the alcohol by the small intestine.

I have also documented how wine has been used as a medicine for the past 5,000 years and provided new information about Australia's Wine Doctors. In all of these studies I have argued that wine is man's oldest medicine. This thesis has taken a new look at our oldest medicine and shown that we should "revisit" wine as a pleasant, agreeable and palatable preventative medicine and has shown that wine is our most potent preventative medicine as well.

It is very hard to get people to comply with all the health restrictions necessary for a long and healthy life such as not smoking, not being overweight, not being diabetic, not being hypertensive, not being hypercholesterolemic, not being sedentary etc. etc. but it is more realistic to get people to consume wine in moderation daily. The ideal would be for both, for people to comply with health restrictions and to consume wine in moderation daily for a longer, happier and healthier life – which is what we all want, hopefully. Thus, this thesis has helped to put the question of wine and health into proper perspective.

WORLDWIDE RECOMMENDATIONS ON SENSIBLE DRINKING –

SUMMARY TABLE

Country	Authority	Sub-Group	Unit (g)	Men		Women	
				Max g/day	Max g/wk	Max g/day	Max g/wk
France	Academy of Medicine	Wine	12	60	420	36	252
Austria	Bundesministerium für Gesundheit und Konsumenschutz ¹	Beer and Wine	11.9	50	249.9	33.3	166.6
Italy	Ministero della Sanita	Non elderly	10	40	280	30	210
Australia	National Health and Medical Research Council ¹		10	40	200	20	100
Japan	Ministry of Health and Welfare ¹	Men only	19.75	39.5	197.5	-	-
Denmark	Sundhedsstyrelsen ¹		12	36	252	24	168
Romania	Health Ministry	Beer		32.5	227.5	17.3	121.1
United Kingdom	Department of Health ¹		8	32	224	24	168
Italy	Ministero della Sanita	Elderly	10	30	210	25	175
Spain	Ministry of Health and Consumption		10	30 ⁴	210	20 ⁴	140
New Zealand	Alcohol Advisory Council ¹		10	30	210	20	140
United States	Department of Agriculture/Health and Human Services		14	28	196	14	98
Canada	Addiction Research Foundation ^{1,2}		13.6	27.2	190.4	27.2	190.4

Country	Authority	Sub-Group	Unit (g)	Men		Women	
				Max g/day	Max g/wk	Max g/day	Max g/wk
Austria	Bundesministerium für Gesundheit und Konsumenschutz ¹	Spirits	6.3	26.5	132.3	17.6	88.2
Ireland	Department of Health		8	24	168	16	112
Czech Republic	National Institute of Public Health			24	168	16	112
Finland	Oy ALKO AB		11	23	161	16	112
Romania	Health Ministry	Wine		20.7	144.9	10.8	75.6
Sweden	Systembolaget (Low Risk)	³		18	126	13.6	95
Sweden	Systembolaget (Not Dangerous)	³		6.7	47	5.4	38

Note: The data presented above are estimated and listed in descending order, according to the daily recommendations for men. Where daily advice alone is given it has been extrapolated to weekly advice (and vice versa), for the purposes of comparison. In some cases different advice is given to sub-populations (such as pregnant women).

1. Drink free days are clearly advised and may be reflected in the estimates.
2. Endorsed by the Royal College of Physicians and Surgeons of Canada, the Canadian Medical Association, the College of Family Physicians of Canada and the Canadian Medical Society on Alcohol and Other Drugs. No distinction by sex; “adult man of average build” is used as a reference.

3. Systembolaget publishes its advice in terms of 40% spirits and notes approximately equivalent values for beer and wine. The chart lists figures for “not dangerous” and “low risk” categories.
4. Suggests a maximum of double this value “on any one occasion.”

Source: Centre for Information on Beverage Alcohol, April 1997

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7. APPENDICES

The following are copies of significant original papers and articles, about wine and health, written by various historic doctors over the centuries.

7.1 AUSTRALIAN WINE AND HEALTH PAPERS

7.1.1 DR REDFERN

COMMONWEALTH OF AUSTRALIA.

HISTORICAL RECORDS

OF

AUSTRALIA.

SERIES I.

GOVERNORS' DESPATCHES TO AND
FROM ENGLAND.

VOLUME VIII.

July, 1813—December, 1815.

Published by:

THE LIBRARY COMMITTEE OF THE COMMONWEALTH PARLIAMENT.

1916.

711

1814.
20 Sept.
—
Appointments
of Allan
Cunningham
and James
Bowie as
collectors of
plants.

Cunningham and Mr. James Bowie have been nominated by the Lords Commissioners of His Majesty's Treasury for this Service; and it having been represented to their Lordships that it will be of great importance to the success of this Undertaking that the Collectors should receive every facility and assistance, which can be afforded by the Government, I am commanded by their Lordships to desire that you will move the Earl Bathurst to convey, to the Governor of the Cape of Good Hope, Instructions to provide for the Service of the Collectors, a Waggon, a couple of Teams of Oxen for their Journeys, a Hottentot Driver, and two or three Men to attend the Oxen, and also to furnish the Collectors with the Usual Orders upon the boors for boorspans of Oxen; and if they should go beyond the limits of the Colony with an Order to the Landrost to give them the protection of a few boors, which my Lords are informed is termed a Commando, And also to afford them every other Facility and Assistance in his Power, which may contribute to the Success of the Undertaking; and I am further to desire that you will also move the Lord Bathurst to convey to the Governors, or other persons, having the Principal Authority in the several Settlements in New South Wales, Instructions to afford to both, or either of these Persons, in the Event of their proceeding to that Country, similar Facilities in the prosecution of their undertaking.

I am, &c.,

GEO. HARRISON.

GOVERNOR MACQUARIE TO THE COMMISSIONERS OF THE TRANSPORT BOARD.

(Despatch per ship Serlagapatnam.)

Government House, Sydney, New South Wales,

Gentlemen, 1st October, 1814.

I have to inform you that the Male Convict Ship Surrey arrived here on the 28th of July last, the principal part of the Crew and Convicts being in a wretched and deplorable State of Disease. On the passage hither, an infectious fever* first exhibited itself among the Convicts, and eventually extended to the Ship's Crew and Officers, and to a Detachment of the 46th Regt. destined for this place. The Mortality, which has been the consequence, is very great, 36 Convicts died, as also the Captain of the Ship, the 1st and 2nd Mates, the Boatswain and Six Seamen, besides 1 Serjeant and three Privates of the Military Detachment: In all Fifty Persons.

I have much reason to apprehend that this destructive Disease originated in the mismanagement of two of the unfortunate Sufferers, namely the Captain and Surgeon, whose Duty it was

* Note 56.

1 Oct.
Arrival of the
transport
Surrey.

Sickness and
mortality on
the transport.

Cause of
outbreak of
infection.

equally to have caused the Convicts to be brought more frequently and in greater numbers on Deck, than it appears they thought proper to authorize.

It may be here remarked that, unless the unfortunate Convicts in Prison Ships are frequently brought on Deck to enjoy the benefit of fresh air, and the Berths below thoroughly washed, cleaned and ventilated, Disease must be the consequence. On the present occasion, it appears that there never were more than 50 Convicts permitted to come on Deck at once, and very Seldom more than from 30 to 40. The greater proportion of 150 to 170 being thus left constantly below, it was of course totally impossible that the Berths could be cleansed and purified, as they ought to be, and still much more so that they could be ventilated whilst such a number of Persons remained there.

For your further information on this Subject, I beg to refer you to the Report of Mr. Redfern, Assistant Surgeon on this Establishment, and have only to express the hope that you will give this Report of the fatal Consequences, attending the rigid and unfeeling Conduct of the Captain and Surgeon; the Consideration due to the distressing circumstances detailed in it, and that you will give such instructions to the Masters and Surgeons of other Convict Ships, as may tend to avert the recurrence of such Calamities for the future.

I have, &c.,

L. MACQUARIE.

[Enclosure.]

SURGEON REDFERN TO GOVERNOR MACQUARIE.

Sir, Sydney, New South Wales, 30th September, 1814.

Some days since, in a Conversation with your Excellency on the Subject of the Calamitous state of disease, in which the Convicts, on the Transports General Hewitt, Three Bees, and Surry, Arrived in this Country, Your Excellency expressed a wish that I should Communicate to you my Sentiments on the probable causes of the diseases, which appeared Among the Convicts on these Transports, on the means of preventing similar Occurrences in future, or of Counteracting their effects.

In obedience to this wish, I have now the honor of Submitting the following detailed observations to Your Excellency's Consideration.

In the Order, in which I now propose to myself to lay before Your Excellency the observations I am about to make, I shall beg leave to call your Excellency's attention to the various circumstances connected with those Transports, According to the priority of their Arrival in this Colony, making occasionally, as I proceed, such remarks as seem naturally to arise out of the Subject.

1814.
1 Oct.

Necessity for
proper hygiene
on transports.

Treatment
of convicts on
the Surrey.

Report from
assistant-
surgeon
Redfern.

The occurrence
of disease on
transports, and
preventive
measures.

1814.
1 Oct.
Embarkation of
convicts on the
General Hewitt.

It appears, from the best information I have been able to obtain, that the General Hewitt, a Ship of 960 Tons, Earl Muster, received on the 28th July, 1813, from the Hulk at Woolwich One hundred and twenty four Convicts. She then dropped down to Gravesend, where she remained sixteen days, whence she went to the Nore and received Forty eight Convicts from the Hulk at Sheerness; on the 22d and 23d August, two days after her Arrival at Portsmouth, she completed her Number, three hundred, by One hundred and twenty four Convicts from the Hulks at Portsmouth and Langston; and finally sailed from England on the 26th of the same Month, having on board in addition to the Convicts, Seventy Soldiers, Fifteen Women, Eight Children, and One hundred and four Ship's Company, besides several passengers, in all, Five hundred and fifteen, having been twenty seven days from the embarkation of the first of the Convicts to the day of her Sailing, during the whole of which time, it is to be observed and regretted the Convicts were closely confined below.

Total
complement
on the
General Hewitt.

Treatment of
convicts at sea
and in port.

That they were divided into Messes of Six Men each, Six of which Messes were admitted on deck in rotation during the day for the benefit of Air; this practice was continued till she arrived at Madeira, when the prisoners were again kept below for Nine days, the time of her Stay at that Island; on proceeding to Sea, they were again admitted on Deck in the same number and usual manner, until they made Rio Janeiro, when they were once more closely confined for ten days, by which time the Sickness, which had Commenced shortly after their quitting Madeira, had increased to an alarming degree. In Consequence of this Sickness, the Convicts were very properly allowed Access to the deck during the day for the remaining part of the Voyage. It was now, Alas! too late. No care, no exertion, however it might lessen, could now remedy the evil.

Regulations for
the cleanliness
of the convicts.

That there were two days in the Week Appointed for Shaving and cleaning the Convicts, but this regulation was not persisted in with any regularity; they were however obliged to Appear Clean every Sunday On the quarter deck, in Order to Attend divine Service, till they Arrived at Rio Janeiro, when this Salutory practice was neglected, and the Convicts were suffered to become exceedingly filthy. There was no fresh Water Allowed for washing any part of their linen; And the Allowance of Water was reduced to three pints per Man per diem; that the Soap (about twelve Ounces) was served out Once a Month to each Mess.

Issues of wine.

That the first issue of Wine was on the day they left Madeira, when half a pint was Served to each man; no more was issued for three Weeks, when a quarter of a pint was issued to each man,

till they arrived at Rio Janeiro. About a month after their departure from that Port, the issue was recommenced and Continued, but very irregularly. And my information states that it is calculated there was a deficiency in the issue of at least three hundred Gallons.

1814.
1 Oct.
Issues of wine.

The Decks were Swept every morning, Scraped and Swabbed twice a Week; they were Sprinkled with Vinegar weekly, until they made Rio Janeiro, when this was discontinued. The Ship was also fumigated once a week for six weeks, but was afterwards much Neglected.

Cleaning and
fumigating
of the ship.

No Vinegar was issued to the Prisoners, and Mustard but three times, about 12 Ounces to each Mess. That three weeks previous to their arrival at Rio Janeiro, their bedding was thrown overboard in consequence of having been wetted; from the want of which the Convicts, When they Came into a Cold climate, Suffered exceedingly.

Issues of
mustard.

Destruction
of bedding.

It also appears that Captain Earl purchased the Convicts' Rations of Salt Beef for Nine Weeks, paying them for it after they left Rio Janeiro, in the following Articles at most Shamefully enormous prices, Viz:—Coffee Four shillings, Sugar One Shilling and Sixpence, Tea twenty Shillings, Tobacco five Shillings per pound, which was not less than Six or Seven hundred per Cent. on prime Cost.

Purchase of
convicts' rations
by transport's
captain.

As there is a wide difference between several essential points of this Statement, the truth of which there is little reason to doubt, and that given by Mr. Hughes, the Surgeon of the General Hewitt, before the Court of Enquiry instituted by your Excellency in March last on this Subject, I feel myself called upon to detail as Concisely as possible the substance of Mr. Hughes's testimony: Viz.

Divergence of
statements.

That there were three hundred Convicts received on board the General Hewitt from the Hulks at Woolwich, Sheerness, Portsmouth and Langston; That some of them were in a State of debility, to 15 or 16 of Whom he would have objected, had there been time previous to the Sailing of the Ship, as being unfit for the Voyage; that the Convicts were not examined after their embarkation by Any inspecting Medical Officer; but that they were accompanied by health Certificates from the Surgeons of the respective Hulks; and that, though he did not coincide with the Opinions Contained in these Certificates, he Admitted there were none labouring under Contagious diseases; That the ship remained three days at Spithead after the Completion of their Number; that, about a fortnight after Quitting Madeira, 12 or 14 Were Attacked with Dysentery, which he Conceived arose from the Convicts being Confined below by the bad Weather,

Summary of
statement by
surgeon of the
transport.

1814.
1 Oct.
Summary of
statement by
surgeon of the
transport.

which prevailed for some time before and during the time of their being attacked, And also from the bedding having been wetted on deck and imprudently used before it could be dried: That the dysentery continued to encrease, combined with typhous fever; that, on their Arrival at *Rio Janeiro*, the Convicts were in a very Sickly State and reduced to extreme debility; that the Articles of Comfort, &c. which were put on board were duly served out; and that the Convicts were formed into three divisions, one of which possessed the deck in rotation, so that the whole were on it in the Course of the day; and that, at the times of fumigating the prison, the whole were on the deck at Once; that, after quitting *Rio Janeiro*, all the Convicts had Access to the deck during the day at pleasure; that they were supplied with fresh Beef and Vegetables, while at *Rio*; but, on being examined as to the sufficiency of it, he Admitted that it had been issued at first in too small a quantity, but that an Augmentation had been made by Captain Earl on his representation, which silenced all Complaints on that head.

He also admitted that Captain Earl had purchased the Convicts' ration of Salt Beef, Observing that he had known it to have been the Custom with the Masters of Several Transports to purchase the Salt ration during their passage through the tropics; and finally that thirty four Convicts died on the Passage.

Remarks on the Three Bees.

The Convicts from the New Prison, *Dublin*, joined those from the Northern jails, who had embarked two days before on board the *Atlas*, hired Brig, on the 28th of August, 1813. The weather was sultry, and as they were exceedingly crowded in a close hold, the nights were truly suffocating. During their Stay here, one of the prisoners died, whose fatal termination, it was said, was Accelerated, if not solely Occasioned, by the foulness of the place Necessarily attendant on Crowding so many together. They sailed from the Canal Docks, *Dublin*, the 20th September, and Anchored in the Cove of Cork on the night of the 22d. Next day they were examined by Doctor Harding, inspecting Physician, and were removed on board the *Three Bees* as fast as they could be conveniently cleaned and dressed. This Service was Completed on the 2d October. The Cork and Southern Convicts, with those of the *Atlas*, completed their Number, two hundred and Nineteen. On the 27th, She Sailed from Cork and Anchored at *Falmouth* on the 30th. The weather, during the time they were at *Falmouth*, was exceedingly Cold and the Prisoners Suffered Severely. They finally sailed from England the 7th December.

Departure
from England.

Convicts
embarked on
the Transport
Three Bees.

Admissions
made by the
surgeon.

They were, while in harbour, Supplied with fresh Beef; their rations were uniformly and justly served out. A gill of wine was issued every Sunday to each man, when at Sea, till they drew Nigh the end of the Voyage, When it was served out twice a week. During the prevalence of Cold, damp or rainy Weather, fires were lighted in the Prison. It was every morning cleaned, and was fumigated with Sulphuric Acid and Nitre, as long as they lasted; when these failed Camphor, Vinegar &c. were used.

The Convicts were formed into five divisions, each having a portion of the day on deck when the weather would Admit. In the Harbour of *Rio Janeiro*, they were all on the deck together every day. On which Occasions, the Mercury in the thermometer fell in the prison 6, 7 and 8 degrees. Here a Case of fever appeared, and as it bore all the marks of Common Ship fever, every precaution was used to prevent the Contagion from Spreading. The Subject of the fever died. They arrived at *Rio Janeiro* on the 3d February, and left it the 17th. On the 27th a Strange Sail appeared, and, as she bore down, had the appearance of an enemy. The Prisoners' bedding was used on this Occasion as a barricade, and being kept on deck all night was quite drenched with rain. After Several fruitless endeavors, on as many days to dry the bedding, it was put into the Prison; at the same time the Prisoners were Cautioned not to use it. This injunction was disregarded; And Scurvy, which had been long lurking Among them, made its Appearance. Seven men died of it, ere they reached *Port Jackson*, and fifty-five were sent to the Hospital in a dreadful State. Nine Convicts died on the Passage.

Remarks on the Supply.

It appears from the Ship's and Surgeon's journals that they completed their Number two hundred Convicts on the 21st of January 1814; that they were admitted on deck in divisions of twenty five men each in rotation; that the Prison was regularly cleaned and fumigated; that Vinegar, Mustard and Soap were issued; that divine Service was read to the Convicts in the Prison; and that half a pint of Wine was served out to each man every Sunday during their Stay in England.

On the 22d February they sailed, having formed the Convicts into Nine divisions of twenty and twenty One men each, One of, which was admitted on the deck in turn during the day; in addition to this Number, there were fourteen, who being appointed to perform little Offices for the others, had Constant access to the deck: On the 7th of March, the Surgeon's journal records the case of John Stopgood, who seems to have been the

1814.
1 Oct.
State of rations
and wine.

Warming and
cleansing of
the prison.

Admission
of convicts
on deck.

Outbreak
of fever.

Use of bedding
as a barricade.

Outbreak
of scurvy.

Extracts from
the ship's and
surgeon's
journals on
the *Surrey*.

Admission
of convicts
on deck.

First
appearance of
typhous fever.

1814.
1 Oct.
First death
from fever.

Efforts of the
surgeon to
cleanse and
fumigate
the prison.

Treatment of
convicts as
recorded in the
ship's journal.

Second death
from fever.

Frequency
of deaths.

Meeting with
the transport
Broxbornebury.

first that laboured under a well defined case of Typhous or common ship fever. On the 12th, John Ranson died of fever, from which time it seems to have been Kept up more or less till their Arrival here.

The Surgeon, altho' his journal is very uninteresting, containing no remarks of importance, or indicating much thought, seems to have paid All the Attention in his power to cleansing and fumigating the Prison up to the 2d of June, when his journal ceases. And on this point I am sorry to observe, from all I have been able to learn on the Subject, that neither his representations nor his efforts met with that Attention or Assistance from the Captain and his Officers, which it was their duty to have afforded him. For, Notwithstanding that Another fatal termination of fever Occurred on the 22d May, no Attempt appears to have been made towards Ventilating the prison.

The ship's journal contains a regular registry of the times of cleaning and fumigating the Prison, of Admitting the Convicts on deck, of Divine Service being read to them in the Prison, and of issuing the Wine. On the 18th of March, it states that the Convicts were formed into Eight divisions. One of which had Access to the deck in turns during the day; and that tuesday and friday were appointed for washing days, which seems from the Journal entries to have been pretty regularly observed till She made *Rio Janeiro* on the 11th of April. While they lay in *Rio*, they were supplied with fresh Beef, Vegetables and fruit. And it States that on the 16th as no shore boat was permitted to go along side, Captain Paterson sent on board tobacco, Coffee and Sugar for Such of the Prisoners, as had the means and wish to purchase Any.

On the 21st April, they left *Rio Janeiro*; And the Journal goes on to state the times of Admission of the Convicts on the deck; cleaning and fumigating the prison, and issuing the Wine, the last issue of which took place on the 1st of May. From Sunday the 24th of May, no more mention is made of Divine Service having been read to the Prisoners.

On the 22d of May Isaac Giles died of fever, the last case mentioned above from the Surgeon's journal. Nothing worthy of Notice Occurs in the Ship's journal, being merely a registry of transactions, similar to those in the last paragraph, to the 9th of June, when Aaron Jackson died of fever, from which period the deaths became Awfully frequent.

On the 26th July they fortunately fell in with the Transport Broxbornebury, And, being reduced to the greatest distress, requested Captain Pilcher to send some person on board to take

charge of the ship. Next day Mr. Nash from the Broxbornebury went on board, and took charge of the Surry; the Captain, two Mates, the Surgeon, twelve of the Ship's Company, Sixteen Convicts and Six Soldiers were lying dangerously ill with fever. Captain Paterson died the same day. They Anchored on the 29th in Port Jackson Harbour, when the ship was immediately put under quarantine regulations.

The sick were landed and taken into tents prepared for their reception. Every plan was adopted and carried into effect, that had a tendency to cut short the progress of contagion. The Measures adopted proved so effectual, that but one Case of infection took place after the sick were landed.

There died, in all, thirty Six Convicts, four Soldiers and Seven Seamen; Among whom is included the Captain, Surgeon and two Mates.

That the deaths of the Captain, Surgeon and Mates may operate as an Awfull and useful lesson in future on the minds of the Officers of Transports "is a consummation devoutly to be wished!"

Having thus detailed the various circumstances and operations connected with the Management of the Convicts on board the abovementioned Transports, as fully as the means of information and the harrassing professional duties, in which I have been for some time engaged, will admit, I shall proceed to point out the errors which appear to have existed; And, as time will not permit me to enter into a separate train of observations on the conduct observed in the Management of the Convicts on board each, I shall review my subject under the following heads: Clothing—Diet—Air—and Medical Assistance:—Applying the reasoning which may arise from the Consideration of these subjects to the practice in those Vessels, either Collectively or Separately, as the case may seem to require.

1. *Clothing* Will embrace everything regarding Personal cleanliness as well as dress.

It must have been obvious to your Excellency, that notwithstanding the great difference of the temperature of the different Seasons of the year, of the various climates through which they must pass, the Clothing of the Convicts, on their Arrival in this Country, has been hitherto nearly, if not quite the same, namely, blue Cloth, or Kersey Jackets and Waistcoats, duck trowsers, Check or coarse linen Shirts, Yarn Stockings, and Woolen Caps.

When a Ship quits England in the Summer Months, from the usual length of the Voyage, she arrives here also in the summer, thus nearly or entirely Avoiding the Winter; but when she leaves England in the Winter the reverse of this takes place,

1814.
1 Oct.

Officer sent
to command
the Surry.

Death of captain
Paterson.

Treatment
of Sick at
Port Jackson.

Total number
of deaths.

Deaths of
captain, surgeon
and mates.

Method adopted
in proposing
reforms.

Clothing
provided for
convicts.

1814.
1 Oct.The clothing
of convicts on
embarkation.

having, instead of two Summers, the rigor of two Winters, in latitude 52 N., and not less than 45 or 46 S., to support, in both of which our own personal feelings have taught us the comfortable and pleasing Accommodation of warm Clothing.

The Convicts, when about to be embarked on the Transports, are collected from the various prisons and hulks in which they may have been confined, are Stript of their former Clothing, washed and dressed in the Clothing above enumerated; if it be the Winter Season, the change must be great, Sudden and Striking; more especially as we know that they are prohibited wearing such warm Apparel as they or their friends can find the means of furnishing.

Result of system
of providing
clothing.

Experience, the best of guides, has long taught mankind the knowledge, that the human body does not possess the power of instantaneously adapting itself to very great and sudden transitions, nor of supporting their effects with impunity. With this fact in View, it will be readily admitted that the great and sudden change of dress, to which Convicts are thus subjected, must, in a winter's passage, be one Source of disease. The common and invariable effects of this Change are Colds, Pneumonic Complaints, and Rheumatism, which, together with the means requisite to subdue these complaints, are highly calculated for the production of debility the Predisponents of Scurvy, fever, and Dysentery.

Want of warm
clothing a
predisposing
cause to
scurvy on the
Three Bees.

That the want of warm Clothing had a very considerable Share in the production of the inveterate degree of Scurvy, under which the Convicts in the Three Bees laboured, will require but little proof. They were on board the ship from the 2d October to the 7th December, lying in the Ports of Ireland and England, Stript of their warm clothing generally consisting of Coarse Cloth, or Frieze, Coats, Waistcoats, breeches or trowsers, and not uncommonly with the addition of a Frieze great Coat, dressed in the light Clothing mentioned above with Trowsers of a thin coarse kind of brown or unbleached linen, known in Ireland by the name of "Harn," which is much thinner and less calculated to resist cold and severity of weather than even the Dutch Trowsers of the English Convicts. In such a dress, having undergone such a change, exposed to the rigor of two Winters, incapable from a variety of Causes, too obvious to require Mentioning, of taking exercise, with but a Single blanket the only covering on their beds at night, to the Eye of common sense, not to say, to that of Medical Acumen, the probable effects must exhibit too Strong a figure to be easily doubted or Mistaken.

For a Summer Voyage no dress can be more suitable than the present: for they can be as lightly clothed as they please by

1814.
1 Oct.Change of
clothing
proposed for
the winter
voyages.

disencumbering themselves under the pressure of heat of their Jackets and Waistcoats, when the shirts and Trowsers will be found quite pleasant and amply sufficient.

Far, very far, from Arrogantly wishing to propose useless innovations in a System already as nearly perfect as possible, Yet with the importance of the Subject pressing on my mind, and urged too by a strong sense of duty, I shall take the liberty most respectfully to submit to Your Excellency's consideration the propriety of suggesting and recommending to his Majesty's Government the following trifling change and addition in the present Clothing for the Winter Voyage.

That the Duck or Harn Trowsers be exchanged for Cloth Ones, that Flannel Waistcoats and Drawers be Supplied; And that an Additional Blanket be issued to each person. This change and addition of the trowsers, flannel Waistcoats and Drawers, at no very great expence, would affect the means of resisting Cold during the day; and the blanket would contribute warmth in the night and Supersede that baneful custom, which is but too common of Sleeping in their Clothes, A practice which cannot be too Strongly deprecated, since by confining the effluvia arising from the human body constantly about it, thus rendering it more virulent, it tends directly to supply the most effectual means of generating and diffusing Contagion.

In objection to this change and Addition of dress, it might perhaps be urged that as Flannel or Woolen Cloths is in most circumstances generally less cleanly than linen, And as Woolen Clothes possess in a high degree the property of imbibing and retaining the principles of Contagion, the benefits, derived from their power in counteracting the effects of Cold, And Affording Warmth, would be inadequate to the risque of favouring the diffusion of Contagion. The answer to this objection leads me to the second division of this head, *Personal Cleanliness*.

Probable
objections to
woollen
clothing.

Altho' the Strength of this Argument must in some degree be Admitted, Yet it cannot be denied but that either Cotton or linen, if worn on the person till it become filthy, will retain fomites, and communicate Contagion as certainly as Woolen. But fortunately we possess, even on board ship, the means of preventing the generation and diffusion of contagion with as much certainty as any place else. To effect this object, all that is Necessary is cleanliness and Ventilation.

Advantages
of linen and
woollen
clothing.

In the detail of the transactions respecting the Management of the Convicts on board the General Hewitt, I am sorry to be obliged to Observe that, however well they commenced by appointing proper days for Attending to the personal cleanliness of the Convicts, And by insisting on their being shaved and Clean in

Neglect of
personal
cleanliness of
convicts on the
General Hewitt.

1814.
1 Oct.
Neglect of
personal
cleanness of
convicts on the
General Hewitt.

Order to Attend Divine Service on the quarter deck every Sunday in the early part of the Voyage they did not consider these circumstances of importance enough to merit being steadily carried into effect, since, long ere the termination of the Voyage, they Suffered these most useful and salutary regulations to sink into neglect; so that we find the Convicts becoming exceedingly filthy.

Whatever good excuse might be urged for not supplying the Prisoners with a Certain portion of fresh Water for the purpose of washing their linen at Sea, surely none can be offered why it was withheld in harbour. It would perhaps be equally difficult to assign any solid reason, in a passage of less than Six Months, for putting them on a Allowance of three pints of Water Per Man Per diem.

Improper issue
of soap.

The Soap, I am Concerned to find, was not issued to them in the proportion in which it should have been, as it appears from the calculation of Twelve Ounces to each Mess of Six Men Per Month that not more than 150 lbs. was issued during the passage. On the Subject of the practices with regard to Soap, I shall have Occasion to Animadvert below.

Want of
personal
cleanness of
convicts on the
Three Bees;

It is also to be regretted that sufficient attention was not paid to the personal cleanness of the Convicts on board the Three Bees, as those, who were landed ill of Scurvy before their Clothing was changed, were extremely dirty both in person and dress. On enquiry into the Cause of this, I was told "that only one Man could have Access to the head at a time, which was the place appointed for them to wash themselves; and that the Soldiers composing the guard threw as many difficulties in their way on these Occasions as possible"; so that in the midst of the Ocean they could not, for want of a little common Management, obtain even Salt water enough to wash themselves Once a week.

and on the
Surry.

The Convicts in the Surry did not, from quitting England in February, Suffer so much from the want of warm Clothing as those of the Three Bees; but from the wretchedly dirty and squalid appearance of their persons and dress, there was much reason to suppose that they had been as great, if not greater, strangers to wholesome ablution as those of either the General Hewitt or Three Bees.

Improper
issue of soap
by the master
of the Surry.

An Occurrence, demonstrative of the highly improper practices carried on by the Masters of some of the Transports with regard to the Articles of Comfort, &c., fell within my own immediate Observation, And which I cannot pass over in silence. When the Convicts were landed from the Surry in Order that the ship might be fumigated. And as it was deemed proper to wash the Prisoners' Persons as frequently as possible previous to the quar-

antine restrictions being removed, A little Soap was requested from the Purser or Steward for this purpose. "There was none, it was all expended," was the reply. A few days after it was discovered, that a quantity of Soap was inserted in the Invoice of Goods they had for Sale. In consequence of which, it was suggested that an enquiry was likely to be instituted concerning the proper expenditure of the Article of Comfort, &c., put on board for the use of the Convicts on the passage. This produced the desired effect, and five boxes of Soap were sent to the General Hospital as remains of unexpended Stores. This fact speaks for itself.

1814.
1 Oct.
Improper
issue of soap
by the master
of the Surry.

Having thus shewn that the personal cleanness of the Convicts on board those Transports did not obtain the degree of Attention corresponding to the importance of the Subject, I shall reserve the Suggestions I mean to throw out on this part of the case for the Conclusion of this paper. In the meantime, I must beg leave to Observe, that experience has shewn, that the affusion of cold water over the body is a powerful means of preventing the generation of Contagion by washing off the Effluvia from the body, and enabling it to resist cold and even Contagion itself when present. I could therefore recommend that as many as possible should every morning undergo the cold Affusion; but if it could not be complied with every morning, then it should Alternate with the days of Cleaning and Shaving, that they might every day have something to do, that would require some exertion of body and afford some amusement to the mind.

Value of
cleanness in
the prevention
of disease.

2. Diet, including food and drink, is the next object of enquiry, According to the plan proposed; and on this part of our Subject, Government having already made Arrangement so well calculated for the health and Comfort of the Convicts, that there is little room for Observation: The Allowance of food, I am warranted in asserting from practical Observation, is quite sufficient provided it be duly served out. That this has not always been the Case is to be lamented. For Altho' it is granted that it is Ample Sufficient, Yet it does not follow that it will admit of Any Subduction. On the Contrary I am convinced, as well from information as observation, that no Subduction whatever can take place without producing visible effects by debilitating the body and disposing it for disease. It has been stated above from unquestionable Authority that the Masters of the several Transports have purchased the Convicts' Ration of Salt Beef on their passage through the tropics; And that one at least paid them for it in a manner disgraceful to himself and injurious to them. This practice is probably in imitation of a

Dietary scale
sufficient as
ordered by
government.

Purchase of
rations by
masters of
transports.

1814.
1 Oct.
The practice
followed in
the Navy.

Evils of the
practice
amongst masters
of transports.

The allowance
of wine on
the voyage.

Proposed
increased issue
of wine.

Similar One that Sometimes takes place in the Navy and the Company's Service, wherein the Salt meat ration in Warm Climates, by desire of the people, is retained in the Purser's hands, for which they are paid According to the established rules of the service, or they receive flour, Suet and Plumbs in return. To this practice in either the Navy or Company's service there can be no possible objection, as the ration, bearing a proportion to that of the Convicts, is as six to four, will Admit of such Subduction or exchange. The exchange in either Case would be serviceable; but the Subduction would, we know, in the one be injurious, in the other it might perhaps be harmless; and therefore Government might give instructions for the exchange of Salt Beef for flour, Suet and plumbs between the tropics, according to the usage of the Navy. But the circumstance, of the Master of the Transports purchasing any part of their ration, is deserving of the most serious reprehension. It is pregnant with danger, as it affords them, when so disposed, every facility for peculation and for Applying certain Articles of the Convicts' provisions and comforts to their private use or emolument. A transaction of this kind seems to have Occurred not long since, altho' it failed to be proved. The Steward of the General Hewitt gave an information that the Captain with held a quantity of the butter, put on board as part of the Convicts' ration; but when called upon to prove the fact, he declared that he had served out the usual proportion of Sugar in lieu of Butter, According to the rules of the Navy. Butter appears to be the only thing in the ration table that is unfit to form an Article of diet in a Voyage through the tropics. It is an expensive Article, and, as it sells here, it is more the subject of peculation than perhaps any other put on board for the Convicts' use. Molasses might I conceive be substituted with advantage to Government as well as to the Convicts.

With regard to the Allowance of two Gallons of Wine for each man during the Voyage, it appears, from the usual mode of administering it, to be somewhat difficult to define the intention with which it is given, or the utility likely to be derived from it. Half a pint is commonly served out, or said to be so every Sunday, or some one day in the Week. Of what benefit is this? I know not. Would it not be much better to reserve it for the purpose of Serving out half the quantity during the prevalence of Cold and bad weather?

If I might presume to suggest the result of my reasoning on this Subject, I should beg leave most respectfully to offer for your Excellency's consideration the fitness of recommending to his Majesty's Government to increase the quantity of Wine to

six Gallons, which would allow an issue of One fourth of a pint to each person daily. This quantity would be simply sufficient and would be attended with the most beneficial consequences, as it would, by assisting to maintain the Vigor of the System, Counteract debility arising from bad weather, confinement below, and despondency. It ought to be diluted with an equal quantity of Water, to which might be added a small portion of lime juice and sugar, and served out, and drunk at the tub by each individual, that was able to come up on deck. In this manner of preparing and issuing it, it would furnish an Article highly antiscorbutic; and as each Convict would then know the quantity he was daily entitled to, it would prevent the shameless practices which have not unfrequently taken place with regard to this article. Two instances of which are deducible from the remark made on the issue of this Article in the General Hewitt and Surry. In the former, it was stated there was a deficiency in the issue of 300 Gallons. In the latter, it is proved by the ship's journal that there is a deficiency of 240 $\frac{1}{2}$ Gallons. Each Issue of Wine is regularly recorded in the ship's Journal, Commencing on the 30th January and terminating on the first of May, during which period there was about 169 $\frac{1}{2}$ Gallons issued, which being subtracted from 400 Gallons, the quantity put on board being two Gallons for each man, there remains the above deficiency of 240 $\frac{1}{2}$ Gallons. This fact is fully and fairly recorded in the ship's journal without a single Attempt at explanation.

3. An object of still greater importance, than any of those Already touched on, is Air, the great Pabulum of Life, without which existence can scarcely be maintained for a Minute. And from ignorance or inattention in regulating its influence in the Management of the Convicts on the passage, the ill state of health and great Mortality Are Chiefly to be attributed.

That the bodies of men, when closely confined in considerable numbers, possess a power of generating a most subtle poison, the nature of which is Cognizable, but in its effects, not only injurious and deleterious to the bodies of those by whom it is generated, but spreading baneful influence far and Wide Among All, who come within the Sphere of its Action, is fully evinced by the many lamentable instances on record.

The Case of Mrs. Howitt and others, who escaped from the Black Hole in Calcutta and were afterwards Seized with the fever, which was generated during their confinement and the seeds of which they carried with them, is a proof of the first part of this position; and the Second Will be equally certified by the relation of One of the most striking instances of the kind

1814.
1 Oct.
Proposed
increased issue
of wine.

Deficiencies in
issue of wine on
the transports -
General Hewitt
and Surry.

The problem of
fresh air and
ventilation.

Effects of
confinement.

Fever
generated in the
Black Hole at
Calcutta.

1811.
1 Oct.
Example of
Infection
recorded at
Old Bailey
sessions.

on record, which happened on the 11th of May, 1750. At the Old Bailey. The Prisoners were kept for nearly a whole day in small, ill Ventilated and Crowded apartments; Some of them laboured under jail fever; when they were brought into Court, the Windows, at the end of the Hall opposite to the place where the Judges sat, were thrown open, the people on the left of the Court, on whom the wind blew, were infected with the fever, while those on the opposite side escaped. The Lord Chief Justice and the Recorder, who sat on the Lord Mayor's right hand, escaped, while the Lord Mayor and the rest of the bench, who sat on his left, were seized with the distemper. Many of the Middlesex Jury, on the left side of the Court, died of it, while the London Jury, who sat opposite to them, received no Injury." But why should we go so far back and quote cases in proof of that of which we have got a melancholy instance before our Eyes. In the Transport Surry, the Poison was generated by the close confinement of the Convicts in the Prison. It diffused its Malignant influence through every part of the Ship and spared none, who came within the sphere of its Action.

Prevention of
contagion.

To prevent the generation of this subtle, Malignant and insupportable poison, every effort should be directed, and that it is possible in, perhaps, every instance of bringing Convicts from England to this Country, the numerous examples of those Arriving in health, having lost few or none on the passage, render it extremely probable, if not quite Certain. In this point, however, it is to be regretted that those ships, which are the subjects of this investigation, have most miserably failed. Whether this failure arose from timidity, ignorance or inattention to their duty, this is certain, that had they intended to have favored the propagation of Contagion, and to have given full force to its Virulence, they could not have devised a more effective plan for their purpose.

Conditions
preventive of
contagion on
the transport
Surry.

It is recorded above, that 20 or 21 of the Convicts, composing one of the nine divisions, into which the whole were formed with fourteen privileged persons were admitted on deck in their turn, when the weather and the duties of the ship would permit; And it is no where recorded, either in the surgeon's or Ship's journal that the Convicts were at any time, from their first embarkation to the period of their Arrival in this port, All on deck at Once. Hence it follows that 165 persons, or nearly that Number, were locked up in the Prison or Hospital. The word Ventilation is never once Mentioned; No provision of Windsails, The Stove is removed at an early Stage of the Voyage; The bedding was never once brought on deck. Here is a combination of circumstances favouring the generation of contagion, without one

rationally directed effort to counteract it. To have escaped contagion under the circumstances would have been Miraculous. It is only to be wondered at that so few died.

Forming the Convicts into these small divisions, and admitting but one on the deck at a time, seems to embrace a twofold intention, The Safety of the Ship and the health of the Convicts. That the first part of this intention might be effected by other means remains to be shewn; but that the Second is entirely defeated by its own operation will require but little proof.

It will be taken for granted that what had been Once done can be done again. It is mentioned above that the Convicts, however badly managed in other respects, were at least on deck all at Once every Sunday, when the weather and the duties of the Ship would admit, in Order to Attend Divine Service, And during the time they were fumigating the Ship for the first time Six Weeks. It is also stated those of the three Bees were all on the Deck together every day while in *Rio Janeiro*. Here are 300 Convicts in the former and 200 in the latter all on deck at once, Yet nothing was attempted to endanger the safety of the ships. Had this been practised every day on board those three ill fated ships, there would have been no Occasion for these observations. There would have been but little Scurvy, Fever or Dysentery. To effect this object, the plan is simple And easy of execution. It only requires to put no more Convicts on board each Transport than the deck is capable of holding, to choose such time of the day when the Officers and Ship's Company shall be most disengaged, to place the guard in a State of preparation and in the most favourable position to command the deck, in case of any attempt to gain possession of the ship.

1814.
1 Oct.

Numbers
of convicts
admitted on
deck.

Safety of ships
not endangered
by convicts
on deck.

Practicability
of admitting
all convicts
on deck.

The Custom of Admitting 20, 30 or 50 of the Convicts on the deck at a time in rotation is on the principle of benefiting the health of each individual, and of guarding the whole against Contagion. It might, perhaps, be wrong to assert that the Prisoners individually receive no benefit from the very short time they are on the Deck, but it might be easily proved that the advantage is not so great as is usually supposed.

Granting that the whole 2 or 300 Men shall have been on the deck by 30 or 50 at a time during the day, what does this effect as to the State of the Prison? Does it cause a thorough Change of Air? That it neither does, or can, requires no proof. If it fall short of this, it is of no utility. Disease will be as infallibly generated by 165 persons constantly remaining in the Prison, as if the whole had remained there.

Evils of
the constant
occupation of
the prison.

To effect a Complete renovation of Air in the Prison, and to prevent the generation of Contagion, let the whole of the Prisoners

1814.
1 Oct.
Proposal for the
daily cleansing
and fumigation
of the prison.

Further
precautions
to be taken.

Reasons for
absence of
surgery on
female
transport ships.

Incompetency of
most transport
surgeons.

with their bedding be taken on deck daily when Admissible, And detained there some time; in the mean time, let the Prison be well cleaned and fumigated, And that not in the Common manner of performing this Operation, but let the Hatchways, Ports and Scuttles, fore and aft, be shut in and covered down, in Order that the fumigation be rendered as perfect and general as possible. When this shall have gone on a Sufficient length of time, let the Hatchways Ports and Scuttles be thrown open, let fires be lighted in the Prison, And when the whole shall have been thoroughly Aired and dried, the Convicts with their bedding may be sent below. Keeping in mind that the longer they are on the deck in a body, the more certain the prevention of contagion. In addition to this, the Prison and Hospital ought to be white washed every two or three Weeks with Quicklime. I would earnestly contend for the diffusion of the Nitric or Muriatic Acid, in the form of Gas, in the peculiar Case of a Transport carrying prisoners, Altho' I might under other circumstances concur in opinion with the intelligent and spirited Author, who says that "the long Catalogue of fever exorcisms (from the explosive devils that used to render the between decks of our ships so many Miniature representations of Tartarus, down to the more elegant Antitoxic farce of *Ozymuriatic* incantation) is now superseded by the Simple Application of three elements that are always at hand, Water,—Air,—fire. And thus what was decided in the *Senate* to be deserving of a National reward is known in the *Cockpit* to be the veriest phantom of imagination."

On what principle is it to be Accounted for that not one of the Transports, employed exclusively in bringing out female Convicts, has had a Contagious disease Among them? the Answer is obvious. From the Women, there is nothing to Apprehend with regard to the safety of the ship; they have therefore unrestrained Access to the deck, and are generally on it, so that a perfect renovation of the Air of their prison is constantly taking place. On this principle, and on this alone, is the absence of Contagion to be Accounted for.

4. It becomes necessary to make a few Observations respecting the Medical men, who are appointed to take care of the health of the Convicts on their Passage. Those, who have been hitherto appointed, have been either Students from the lecture room, or men, who had failed in the respective lines of their profession. If from the first class, they are without experience, And, however they may be fraught with the instructions conveyed in the various lectures they have Attended, or with the Contents of the Numerous Volumes they have read, they are but ill qualified to take charge of the health of two or three hundred men about

to undertake a long Voyage, through various climates, and under peculiarly distressing circumstances, without a Sense of Conscious rectitude to support them, dissatisfied with the past, repining at the present, and apprehensive of the future, deprived of the power of enjoying the Air and exercise, &c. necessary to Maintain the due equilibrium of temper and Spirits so essential to the well being of man. If from the second, it but too frequently happens that either from the cause or Consequence of their failure, they totally devote themselves to inebriety.

How little capable, either the one or the other is for this important trust, is too self evident to require demonstration.

Besides they are employed by the owners of the ships and placed immediately under the Command of the Masters of the Transports, who, with few exceptions, having little claim to education, refined feeling, or even common decency, generally treat their Surgeons as they do their Apprentices and men with rudeness and brutality.

Incapable of Appreciating the value of learning, and despising all knowledge beyond what they themselves possess, they avail themselves of every opportunity to insult and Mortify their Surgeons. Under this species of treatment, with no means of redress during a long Voyage, the Mind becomes paralysed, they View their Situation with disgust. And, if they have the means, should they not have been so before, they soon become confirmed drunkards. Hence their duty is neglected, and the poor Convicts become the unhappy Victims of the Captain's brutality and the Surgeon's Weakness, want of Skill or drunkenness.

That this picture is not surcharged, the records of the Colony will furnish but too many proofs. Yet, at the same time, it is but fair and just to observe that, altho' this is by much too frequent, it is not so General but that there is now and then an exception.

With a View therefore of providing Skilful and Approved Medical Men, for this Service, it might not perhaps be deemed improper to suggest that the Surgeons ought to be appointed by Government; selected from the Surgeons in the Navy—Men of Abilities, who have been Accustomed to Sea practice, who know what is due to themselves as Men, and as Officers with full power to exercise their Judgment, without being liable to the Controul of the Masters of the Transports.

Previous to dismissing this part of my Subject, it may be right to observe that, as disease has so often made its appearance Among the Convicts during the Voyage, and as it pays no more respect to the Surgeon than to any other person, he is therefore equally liable to become the Victim of Contagion; in which

1814.
1 Oct.
Incompetency of
most transport
surgeons.

Objections to
surgeons being
subordinate to
transport
captains.

Proposal for
appointment of
naval surgeons
for duty on
transports.

1814.
1 Oct.
Proposed
appointment
of an assistant
surgeon.

Reasons for
appointment of
an agent for
transports on
each ship.

Summary
of proposed
reforms for
management
of convicts on
transport ships.

event the ship is without any Medical Assistance. And indeed if there be much sickness and the Surgeon be fortunate enough to escape, the duty in Attending upon so many is too arduous and difficult for any one Man to perform, as it ought to be done. I should therefore most Strenuously recommend that an assistant Surgeon be also provided.

As it has sometimes happened that those, concerned in bringing Out the Convicts, regardless of the principles of honesty and humanity, and availing themselves of the unlimited power with which they are invested, have withheld a portion of the rations and Articles of Comfort from the Convicts, and Appropriated them to their own use; instances of which are hinted at above. I trust it will not be conceived impertinent to recommend that An Agent for Transports be sent out in every ship. He might be Selected from the Navy Surgeons, combining the Offices of principal Medical Officer and Agent in his own person. An Appointment of this nature, filled by a person duly qualified, promises to be Attended with incalculable Advantage and that too at a trifling increase of expence.

Having thus taken an excursive, though I trust not useless, View of the Subject, I shall beg leave to Conclude by recapitulating the principle results of this enquiry, and most respectfully, at the same time most strenuously, recommending them to Your Excellency's Consideration.

1. That more warm clothing be provided for the Winter passage.
2. That more regard be directed towards personal Cleanliness by facilitating the means of washing And cleaning their persons and dress.
3. That cold affusion be employed as largely as possible.
4. That Masters of Transports be prohibited purchasing or exchanging, unless by direct instructions from the Transport Board, any part of the Rations of the Convicts.
5. That a different distribution, or rather an encrease of the quantity of the Convicts' Wine, be provided for.
6. That no reduction, unless under peculiar circumstances, of the regulated allowance of Water be suffered.
7. That no part of their rations or Articles of Comfort be surreptitiously or fraudulently withheld.
8. That, in Order to prevent the generation of Contagion, it is absolutely necessary that the Convicts with their bedding should be Admitted every day, when the weather will permit, on the deck for a Certain time, The longer the better.
9. That the Prison and Hospital be regularly cleaned and fumigated with the Nitric or Muriatic Acid in a gaseous State; That

the fumigation be as perfect, And as general, over the ship as possible, Well Airing And drying the prison before the Convicts are sent below.

10. That, for the better preservation of the health of the Convicts, more eligible Medical Attendants, and on a different establishment, be provided.

11. That an Agent for Transports be sent out, in whose person might be Combined the two Offices of Agent and principal Medical Officer, invested with powers to Cause the necessary regulations to be carried into effect.

I very much regret that time will not permit me to correct these observations. They are written without method or attention to Arrangement or Style, and as your Excellency is aware of the very short time I have had to prepare this paper, owing to the pressure of professional business, I trust that every Allowance will be made for the imperfect State in which it meets Your Excellency's eye. If however any thing contained herein should be the means of throwing any additional light on the Management of the Convicts, and, by giving more effect to the benevolent intentions of His Majesty's Government, of Ameliorating their Condition, or be the means of saving the life of a single individual, I shall feel more than Amply Compensated for any pains I have bestowed on the Subject.

I have, &c.,

WM. REDFERN, Assist. Surgeon, N.S.W.

GOVERNOR MACQUARIE TO EARL BATHURST.

(Despatch marked "No. 11 of 1814." per ship Seringapatam; acknowledged by Earl Bathurst, 4th December, 1815.)

Government House, Sydney, New South Wales,

My Lord, 7th October, 1814.

1. The last time I had the Honor of Addressing Your Lordship was by the Opportunity of the Brig James Hay, which Sailed for England on the 2d of June last. The Duplicates of My Dispatches on that Occasion are transmitted by the present Conveyance.

2. I have now to acknowledge the Honor of Your Lordship's and Mr. Goulburn's Several Dispatches as Specified in the Margin,* by the Broxbornebury and Surrey, Convict Transport Ships. Which Arrived here from England on the 28th of July last, and shall pay the strictest and Most respectful Attention to their Contents.

* 31, 5th, 6th, and 12th of Feby., 1814, from His Lordship, and 26th Decr., 1813, From Mr. Goulburn.

1814.
1 Oct.

Summary
of proposed
reforms for
management
of convicts on
transport ships.

7 Oct.

Dispatches
acknowledged.

7.1.2 DR LINDEMAN'S VIEWS ON WINE AS A DRINK AND AS A MEDICINE

Dr. Lindeman had very strong views about wine - not only as a medicine but also as a means to counter the drunkenness prevalent at the time, due to the uninhibited use of spirits by the people (mostly rum). Rum as we know' was used as a form of currency in the early days of the colony due to the lack of suitable coinage. Dr. Lindeman's comments published here are just as relevant today with adult and teenage drunkenness due to the consumption of beer and spirits as they were in the 1870's when he wrote them. Others in the colony too before him had also advocated the use of unadulterated table wine as a preference to rum. Such notable early settlers as the Rev. Samuel Marsden and the Rev. John Dunmore Lang not only advocated the use of wine, but established vineyards to actually promote its use. Australia has a long history of its doctors establishing vineyards. Wine last century was used as a medicine. It is the oldest medicine known to man and can be used as a tonic, a cure for anaemia (strong red wine), an antiseptic, an anaesthetic, a sedative, an appetite stimulant (champagne), a tranquilliser, and most importantly, as a food. with over three hundred vitamins, minerals, sugars, other carbohydrates and trace elements necessary for healthy living. Dr. Lindeman advocated the promotion of wine as our National Beverage, and his thoughts are presented below fully.

Today politicians and others in society condemn the promotion of wine amongst our youth by the wine companies. Surely the beverage that is corrupting our youth is beer, not wine.

In France, children are brought up on a mixture of red wine and lemonade or water. These children grow up to appreciate and respect wine in moderation unlike our own children, who learn how many schooners they can "sink" before collapsing or vomiting. Our youth should be taught how to appreciate moderation as in Europe, not only as a very good source of food, but wine "gladdens and cheers the heart of man".

There should be no prohibition or condemnation but education and through education, enlightenment and understanding of wine.

The following was published in the NSW Medical Gazette, 1871.

PURE WINE AS A THERAPEUTIC AGENT, AND WHY IT SHOULD BECOME OUR
NATIONAL BEVERAGE

(To the Editors of the Medical Gazette)

SIRS, - More than thirty years ago, when I first arrived in the colony, I was induced to plant the vine, and to impress upon my fellow-colonists the desirability of doing so likewise, seeing the great necessity there existed for supplying a pure exhilarating wine to take the place of ardent spirits and of adulterated wines and beers then and now the popular beverage of our community, the use of which frequently induces the diseases I have found mostly to be guarded against in our climate – namely, those arising from derangement of the liver; to suffer from which too often robs life of enjoyment by enveloping it in a perpetual fog of mental depression, and for which depression relief is generally sought in the deleterious stimulants above-named, which invariably add fuel to fire, thereby crowding our community with the inebriate and insane.

It was natural to hope that a wise government would have seen the value of encouraging a step tending to scatter health and enjoyment, and to advance sobriety among the people it rules over by allowing this wine to be sold without any restrictions further than by demanding a small fee in the shape of a license from a vendor, sufficient to pay for the surveillance necessitated to be kept by the dishonest trader, who might otherwise for his profit adulterate it. But this has not yet been found the case. Several years ago a bill was introduced into the house by Mr. Holroyd with the view of getting this great boon conferred upon our community, but King Rum was found all too powerful, and his then influence upon electors, I believe, was the sole cause of its being

rejected – I must not say rejected (it would have been well had it been so,) for it was passed in such a mutilated form as to appear a burlesque upon legislation, and to become a stumbling block, over which all future attempts have fallen. Sir, the advocacy of this cause I cannot but think should be taken up by the members of the medical profession, who are for the most part aware of the value of a pure wine as a therapeutic agent, and how materially we should benefit both in health and morals if it became our national beverage.

I have spent many years of my life trying to bring this about by doing everything within my limited orbit to inculcate a taste for a pure, dry, and thoroughly fermented wine, free from excess of undecomposed sugar, and light in alcohol, resembling as much as possible the pure growths of Bordeaux and the Rheingan, and for the production of which our climate and soil are pre-eminently adapted.

To change a national taste in a life-time I never had the vanity to propose to myself, but to advance it somewhat is something to be proud of, and it will be a grand step gained to get the members of our profession to enlist themselves in this good cause, which, by bringing it prominently before them (with your permission) in the leaves of the Medical Gazette, I hope to do, knowing how great is the influence of the profession when stepping forward to advance mankind.

I have the honor to be, Sir,

Your obedient servant,

Sydney, June 12, 1871.

W. T. LINDEMAN, M.R.C.S. Eng.

PURE WINE AS A THERAPEUTIC AGENT, AND WHY IT SHOULD BECOME OUR NATIONAL BEVERAGE.

(To the Editors of the Medical Gazette.)

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Sydney, June 12, 1871.

(NSW Medical Gazette 1871)

In 1871 the NSW Parliament was considering
a Wine Bill for the regulation of the sale of colonial
made wine.....

A Few Words upon the Wine Bill

NOW BEFORE THE HOUSE,

AND UPON

WINE MATTERS GENERALLY.

BY

H. J. LINDEMAN, M.R.C.S.



It appears to me that it would be a retrograde step to throw any obstruction in the way of the consumption of our native wines; and that we should rather clear the road for them, and use every endeavour to make them a popular beverage, so that, in time, they may come to take the place of the strong alcoholic drinks which (if we forbid the sale of wine) will be again the only stimulants accessible. Ready access to wine, judging from results in all wine-growing countries, will revolutionise our taste for spirits, and induce sobriety. In our arid and exhausting climate (I am speaking of the interior), nature cries aloud for some refreshing beverage, to restore to the system the enormous waste it suffers while toiling beneath our scorching sun—water will not supply it, and the spirits obtainable in the bush are simply poisons. Fortunate are those who can quench their thirst, and restore

their vigour with a bottle of light wine, and as—whether from the demands of climate, from physical exhaustion brought about by toil, from hereditary tendency, or from other causes—men must and will drink, would it not be true wisdom to supply them with that which will do them the least harm?

Many think the wine-shops are also sly grog-shops, and interested persons use their best endeavours to make them appear such, but my experience, gleaned as a magistrate during many years, in one of our largest wine districts, is opposed to this view entirely. In that district the wine-shops are numerous, and the wines sold in them have so won their way among the people, that they are now almost exclusively drunk, and all the public houses now sell them—some sell scarcely anything else. During the whole of that period I do not know of, or remember, one conviction for sly grog selling, but several convictions for wine being drunk on the premises. Now, it would require but simple reasoning to arrive at the conclusion that, if spirits had been sold in them, the convictions for that offence would have been by far the more numerous, when we take into consideration that there is no reward for informers in the one case, and a large one in the other, amounting to what would be looked upon as a small fortune in a poor agricultural district. That the present Act requires amending there can be no doubt, for it is a very absurd one, a mere travesty of the Bill many years ago introduced into the House by Mr. Holroyd, and which it supplanted; the absurdity of it is, that it permits wine to be sold, and fines the seller for letting a weary traveller (while resting his horse or cattle) quench his thirst in the verandah, while it permits him to sell as much as he likes, to be drunk in the dusty roads.

It is to be hoped that this question, now again before the House, will be considered with the greatest deliberation, as a very important one, which it undoubtedly is, fraught with much of the future welfare of our community.

I will say little about the check it will be to the wine interest if its sale is disallowed, considered from a pecuniary point of view, for, in all cases, that must be a secondary consideration to the moral one, but I think we should be careful, lest we act upon insufficient data, and pause, and tread lightly, ere we crush out

the infant life of that which, if carefully fostered, may become the one thing for which our colony languishes—an agricultural export.

Judging from what has been done by individuals favoured by soil and climate, snubbed by our legislators and capitalists, it would scarcely be unreasonable to hope that, in the not very distant future (untrammelled by legislation), we may become a rival even to France, in export of wine; and what would France be without her wine—the one great interest over which she watches with the most zealous care, and in the interest of which she considered so much to England, in the way of Free Trade, in the treaty entered into under Napoleon the Third?

This is the only wine-growing country in the world in which native wines cannot be procured almost as readily as water—even Victoria and South Australia have long since seen the desirability of giving ready access to them, and in Melbourne there are almost, if not quite, as many wine-shops as public-houses, and her legislators, and people generally, are well satisfied with the result. Not, then, to allow the same boon to this country, is to do it a great injustice, and to set up our judgment, based upon little or no experience, in opposition to the experience of ages, and against the opinion and spirit of the passing day. It is not in the interest of our spirit-drinkers and inebriates (although I have known wine reform many of that class), that I am advocating the unrestricted access to our wines—to treat them with gentleness, and provide them with asylums, is all we can do. It is on behalf of the rising generation of our Australian youth—on behalf of the great nation of the future, of which we are now laying the foundation, that she may not have these men to deal with.

I will now make extracts from a few of the works recently written upon the subject, and would ask those who will have a voice in this important question, to read them unprejudiced, as they are the writings of philanthropists and sincere men.

The Opinion of Professor Parker, as embodied in a Letter of his, recently sent to the Americans.

(I have not this letter before me, to quote from, but it was published in full in the *Sydney Morning Herald*, about six months ago, therefore, I quote from memory.) He writes thus:—

"We have made a sad mistake in our endeavours to make our people a sober one—in fancying we could do so by our Maine Liquor Laws, and other restrictive measures, which have all proved failures, and I have come to the deliberate conclusion that our only chance of doing so is (and one I feel confident will be attended with the greatest result) to plant the vine extensively, and, in encouraging, in every possible way, the taste for light wine; and I have arrived at this conviction by my recently-acquired experience in the wine-growing countries, for, in travelling through the Italian States, and Rome, where every third or fourth house is a wine-shop, in which the light wine of the country can be purchased and drunk at a ridiculously small cost, I never once saw a drunken person."

This, from so eminent and earnest a man, who has the interest of his countrymen at heart, and who has worked diligently for their advancement, ought to make us think whether his advice ought not to apply to ourselves with equal force as to the Americans.

Essay on Wine.—By the Rev. Dr. Bleasdale, D.D.

But I had another motive for taking up this subject—one not unworthy of a clergyman. Many years' experience had impressed on my mind that wine-producing countries, where wine is plentiful and cheap, are invariably remarkable for sober, healthy, and cheerful populations; that drunkenness is all but unknown, and many distressing diseases, common among drinkers of beer and spirits in warm climates, utterly unheard of.

Experience has long ago convinced me, that pledges and resolutions to abstain from ardent spirits are but "poor safeguards of unstable virtue," and that, to effect a lasting cure, the natural instincts must be not violently assaulted with resolves, but steadily and gently turned towards sources of reasonable and healthy gratification, while the danger of excess is effectually removed. The experience of all warm countries, where wine is the universal beverage, leaves no doubt but that, when the vine flourishes in luxuriance, there our beneficent Creator intended that his children should drink the produce of it, and be glad. If a man believed in the existence of a fundamental remedy, cheap, easy of application, wholesome, and safe, would he not be to blame if he did not try to apply it? I have tried to clear the way, to give it a chance. I believe in the remedy myself; I have more than a theoretical belief in it. I am no quack, I hate quackery. Had the slightest suspicion of quackery attached to me, I am quite sure the Medical Society of Victoria would never have elected me one of their two honorary members. The following anecdote is worth placing on record. In my youth I spent full seven years in, and near the great capital of Portugal, in times of turmoil and almost disorganization of society, consequent on civil wars, when the utmost excitement prevailed, and the bad passions of men, for a season, broke loose, yet in that city, of three times the population of Melbourne, and where wine was not more than two-pence the quart bottle, and strong brandy five or six pence the imperial pint, I never saw a Portuguese drunk. The occasional spectacle of a Dutch or British sailor drunk in the gutter, and dealing largely in loyalty to his own country, and eternal execration of all others, used to afford an hour's cheap amusement to a whole street. Among themselves drunkenness and *delirium tremens*, and our forms of liver complaint, were wholly unknown.

In the interests, then, of health and morality, and cheerful and happy homes, may I be pardoned for recording my heartfelt wish, that I may live to see the time when even the humblest labourer, at the close of his hot day's toil, will stroll into our fine parks and public gardens, and there, with his happy family around him, enjoy his hour of relaxation, and drink his bottle of whob-

some wine at the cost of a few pence, without either the reproach of extravagance or the danger of intoxication. In fact, I hope and wish to see the Victorians a healthy, sober, jolly, wine-drinking population.

On French Wines.—By Dr. Guyot.

Dr. Guyot was rewarded by the Emperor Napoleon for this little work, and, in advocating the use of light wine, says that, to its use among the peasantry, for generations, may be attributed their sobriety and light-heartedness: "A happy peasantry its country's pride," and that they are such, all acquainted with them allow—ready and eager to enjoy the harmless pleasures of life, and to ignore the ills. We must not confound the rural districts of France with Paris—of the former so little is known to the outer world, of the latter so much. They are as if they belong to different nationalities. The occasional demoniacal outbreaks of the Parisians is attributed to the use of bad spirits, more particularly absinthe.

Cheap Wines.—By Dr. Druitt.

SECOND EDITION.

A large proportion of the patients who come to most of us do so for some failure of nutrition. Be it in town or country I will undertake to say that the number of invalids who require tonics is far greater than of those who need anything like depletion. The difficulty with delicate children is to get them to eat. Besides, be an illness what it may, most practitioners finish off their patient with a "light tonic." Now, what is a light tonic? A little dilute acid, a slight bitter, a small quantity of some aromatic, a little alcohol, and some fragrant ether. But this is just the "draught" that Nature has brewed ready to our hands in the fragrant and appetising wines of France and Germany. Surely if a patient has two shillings to spend on something that shall make

him eat, he ought to be far more grateful to us if we provide him with a bottle of wine than if we give him a "mixture." I often used to prescribe a so-called Chablis, at about 1s. 6d. a bottle, sold in Dean-street, Soho, and have found even poor dispensary patients satisfied with it. But as I shall explain presently, patients must first of all be taught what *wine* is, and the right way to use it, and the difference between drinking pure *wine* as a refreshing beverage, and gulping down a *draught* of bad spirits disguised as wine, such as the "People's Own Sherry," just to create a feeling of warmth under their ribs. But it is not merely in a medical point of view, but as a friend of sobriety and morals, and with a view of raising the status and culture of large classes of society, that I venture to advocate the large use of *wine*, i. e. pure wine, as a beverage. It might well take the place of a good deal of beer, tea, and spirits. There are huge numbers of townspeople, and especially of women, engaged in sedentary occupations, who cannot digest the beer which is so well suited to our outdoor labouring population. The very tea, which is so grateful to their languid, pasty, flabby tongues, from its astringent and sub-acid qualities, and which also comforts their miserable nerves, has this intense drawback, that when taken in excessive draughts, and without a due allowance of substantial food, it begets dyspepsia, and that worst form of it which impels the sufferer to seek a refuge in the gin bottle. Cheap wine would cut off the temptation to gin, and with an equal bulk of water would be found in certain cases a happy substitute for tea. I know a good deal of the better class of needlewomen and milliners' assistants, and speak from experience.

If instead of half the tea at the English middle class breakfast, an earlier luncheon with a glass of light wine were given, it would greatly abridge the hours of half hunger, half dyspepsia, which many school girls, shop girls, and other sedentary middle class women in towns suffer between their breakfast and early dinner. For purposes of social exhilaration amongst classes who are *not* outdoor labourers, beer is too coarse. Man, as a social animal, requires something which he can sip as he sits and talks and which pleases his palate whilst it gives some aliment to the stomach, and stimulates the flow of genial thoughts in the brain.

No one who has ever made the experiment will fail to give the preference to wine over spirits—naked or disguised—whether as gin or cheap incendiary sherry, or can refuse to give a helping hand to any “movement” that will banish spirits to their proper place as medicines for the sick and aged, and not as beverages for the healthy. Civilized man must drink, will drink, and ought to drink, but it should be wine.

Branded wines are conducive to intemperance, and their use in the British nation and other English-speaking communities has brought about the present odd phenomenon in the world of a large number of people banding together under the name of temperance societies, &c., &c., to prevent the use of wholesome food. All this is the natural consequence of the use of those abominable branded wines. They are unnatural, and minister to the passions that degrade man. Pure unbranded natural wines are conducive to temperance, and the fact that teetotal societies are confined to those parts of the world where branded mixtures are in use, and unknown or almost unknown in all the great wine countries of Europe, where pure wine is the daily food of the men, women, and even the children, and drunkenness there being an unusual occurrence, is evidence that *it* is the true and only specific for the present great evil of intemperance.

And last, although not least, we have Scripture warrant for the use of wine. St. Paul advised Timothy to drink wine for his stomach's sake and for his often infirmities; and the first miracle of our Saviour's was the turning water into wine to gladden the hearts of the guests at the marriage feast in Cana in Galilee.





We have received a pamphlet termed "A Few Words upon the Wine Bill now before the House, and upon Wine matters generally: By W. J. Lindeman, Esq., M.R.C.S.E., &c.," in which the author advocates the free sale without legislative restriction of our native wines, so that the populace may in a short time have their palates educated to the preference of pure wines to spirits. As in all the wine-growing countries of Europe sobriety is one of the most conspicuous virtues, we trust that when our native wines are permanently introduced to the tables of the rich and poor alike that the intemperance now so prevalent in New South Wales may cease. The food of the inhabitants of the far interior partakes of so little variety that it is not difficult to imagine that some of the essential constituents of the body are occasionally wanting, although hearty meals are eaten, especially as fruit or vegetables are rarely or ever consumed. The ration of ten pounds of meat, ten pounds of flour, two pounds of sugar, and a quarter of a pound of tea per week, is the allowance which is usually given to every bush labourer, supplemented with a few ounces of tobacco per week; out of this has the albumen, the fibrine, the gelatine, the kreatine, the fat, the iron, the salts of soda, potash, calcium, and magnesia, the sulphur, the phosphorous, and other materials which constitute the human body, and which are constantly being wasted, to be formed. The absence of any of these constituents in the food, it is well known, produces a feeling of debility which causes the person thus affected to rush with avidity to spirits, attempting thus to supply the great want experienced; but if a quantum of wine be daily taken in moderation many of the salts required to repair wasted tissue are ready to supply the imperious demands of nature and the craving for alcohol is not so much experienced. This we believe is the true specific for the prevention of the spread of

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dipsomania and not the numerous Total Abstinence Societies, Good Templars, and others which have of late so largely increased; they may do good, but we can only say we and many of our medical friends have attended patients suffering from chronic alcoholism who have had their prescriptions made up by the Good Templar druggists, &c., belonging as they do to these societies. Our author says:—

Many think the wine shops are also sly grog-shops, and interested persons see their best endeavours to make them appear such, but my experience, gleaned as a magistrate during many years, in one of our largest wine districts, is opposed to this view entirely. In that district the wine-shops are numerous, and the wines sold in them have so won their way among the people that they are now almost exclusively drunk, and all the public-houses now sell themselves scarcely anything else. During the whole of that period I do not know of or remember one conviction for sly grog-selling, but several convictions for wine being drunk on the premises. Now, it would require but simple reasoning to arrive at the conclusion that, if spirits had been sold in them, the convictions for that offence would have been by far the most numerous, when we take into consideration that there is no reward for informers in the one case, and a large one in the other, amounting to what would be looked upon as a small fortune in a poor agricultural district. That the present Act requires amending there can be no doubt, for it is a very absurd one, a mere travesty of the Bill many years ago introduced into the House by Mr. Holroyd, and which it supplanted; the absurdity of it is, that it permits wine to be sold, and fines the seller for letting a weary traveller (while resting his horse or cattle) quench his thirst in the verandah, while it permits him to sell as much as he likes, to be drunk in the dusty roads.

It is to be hoped that this question, now again before the House, will be considered with the greatest deliberation, as a very important one, which it undoubtedly is, fraught with much of the future welfare of our community.

If the industry be properly fostered, our author thinks that this colony may become a rival even to France as a wine producer, and our wines become a very valuable export. He then gives extracts from the opinions of several eminent men in favour of the unrestricted sale of native wine.

Professor Parker, an American, says "that in his experience the Maine Liquor Law is a mistake, and that the only way to check inebriety is to plant the vine extensively. In travelling through the Italian States and Rome, where every third or fourth house is a wine shop in which the light wines of the country can be procured at a ridiculously small cost, I never once saw a drunken person."

The Rev. Dr. Bleasdale, of Victoria, in his *Essay on Wine*, writes:—

Experience has long ago convinced me, that pledges and resolutions to abstain from ardent spirits are but "poor safeguards of unstable virtue," and that, to effect a lasting cure, the natural instincts must be not violently assaulted with resolves, but steadily and gently turned towards sources of reasonable and healthy gratification, while the danger of excess is effectually removed. The experience of all warm countries, where wine is the universal beverage, leaves no doubt but that, where the vine flourishes in luxuriance, there our beneficent Creator intended that his children should drink the produce of it and be glad. If a man believed in the existence of a fundamental remedy, cheap, easy of application, wholesome, and safe, would he not be to blame if he did not try to apply it? I have tried to clear the way to give it a

chance. I believe in the remedy myself; I have more than a theoretical belief in it. I am no quack, I hate quackery. Had the slightest suspicion of *quackery* attached to me, I am quite sure the Medical Society of Victoria would never have elected me one of their two honorary members. The following anecdote is worth placing on record. In my youth I spent full seven years in and near the great capital of Portugal, in times of turmoil and almost disorganisation of society, consequent on civil wars, when the utmost excitement prevailed, and the bad passions of men for a season broke loose, yet in that city, of three times the population of Melbourne, and where wine was not more than twopence the quart bottle, and strong brandy five or six pence the imperial pint, I never saw a Portuguese drunk. The occasional spectacle of a Dutch or British sailor drunk in the gutter, and dealing largely in loyalty to his own country, and eternal execration of all others, used to afford an hour's cheap amusement to a whole street. Among themselves *drunkenness* and *delirium tremens*, and our forms of liver complaint were wholly unknown.

Dr. Druitt writes—

It is not merely in a medical point of view, but as a friend of sobriety and morals, and with a view of raising the status and culture of large classes of society, that I venture to advocate the large use of wine, i.e., pure wine, as a beverage. It might well take the place of a good deal of beer, tea, and spirits. There are large numbers of townspeople, and especially of women, engaged in sedentary occupations, who cannot digest the beer which is so well suited to our outdoor labouring population. The very tea, which is so grateful to their languid, pasty, flabby tongues, from its astringent and sub-acid qualities, and which also comforts their miserable nerves, has this intense drawback, that when taken in excessive draughts, and without a due allowance of substantial food, it begets dyspepsia, and that worst form of it which impels the sufferer to seek a refuge in the gin bottle. Cheap wine would cut off the temptation to gin, and with an equal bulk of water would be found in certain cases a happy substitute for tea. I know a good deal of the better class of needlewomen and milliners' assistants and speak from experience.

Further on we have from the same writer the following :—

Branded wines are conducive to intemperance, and their use in the British nation and other English-speaking communities has brought about the present odd phenomenon in the world of a large number of people banding together under the name of temperance societies, &c., &c., to prevent the use of wholesome food. All this is the natural consequence of the use of those abominable branded wines.

We wish the writer of this pamphlet every success in his efforts to procure the free and unrestricted sale of our native wines, as it will not only benefit the consumer, but will be of great advantage to the producer. Mr. Lindeman deserves great praise and the thanks of the community for the efforts he has made to improve the quality of our wines and to introduce them as an article of diet throughout the colony.

7.1.3 DR CLELAND

Dr Cleland's views on wine expressed when he addressed the Royal Agricultural and Horticultural Society on 27/8/1880 with the following paper "Some Remarks upon Wine as a food and its Production".

"I am anxious however to make a marked distinction between the use of wine and the use of alcohol at the table - in other words, to insist that wine is not simply diluted alcohol or that when such is the case, that it does not then so properly fulfil the conditions of an "article of diet". Good and natural wines besides their alcohol contain numerous ethers, albuminous substances, large amounts of salts, free acids and often sugar. With respect to the alcohol itself as it exists naturally in wine, it is open to question whether it is of the same nature as when it appears distilled in the form of brandy, experience at least teaching us that it does not in its natural state in the wine produce those changes in the tissues of organs which the distilled spirit is so apt to do, even when taken in moderation. That wine in its total character of wine possesses a high dietetic value and a power of preventing scurvy when given along with rations is an opinion that has been completely justified by experience of its employment in the navy.

The present state of our civilisation and the consequent strain, which it produces upon our energies makes it expedient that we should utilise every available means to carry us healthily and happily to the end of life. With the human body, as with any other machine, the relation between the production of force and its expenditure must ever be regarded and we must also not forget that before fresh supplies can be obtained, more energy must be spent in setting this force free from the material we consume as food. Many of you no doubt will be familiar with the painful sensations, the result of indigestion, that arise when a meal is taken whilst the system is in a fagged condition. The question is, can those who are really the workers afford the time

slowly to elaborate from comparatively bulky material the amount of force which is needed to supply the place of that already spent. Can they afford to follow the example of the boa constrictor or the savage and remain some hours impassive, whilst the process is being completed? Wine of a certain kind may be considered to quicken the process of digestion in two ways - first by increasing the digestive powers and secondly by lessening the quantity of food needed to be eaten.

Without going into any of the elaborate theories and often conflicting results of experiments as to the manner in which alcohol or wine are acted upon in the body, we may direct attention to two or three palpable effects of a small quantity of alcoholic stimulant. It at once increases the heart's action and frequently removes the sense of discomfort arising from exhaustion. An improved circulation means a more frequently renewed supply of blood to the digestive apparatus and enables it to respond more readily to the exciting effect of the contact of the food. Thus that which we eat is more quickly and more economically converted into a form suitable for the nourishment of our tissues and being more thoroughly acted upon there is less waste to be got rid of and a smaller quantity produces a sufficient supply of force. A knowledge of the way in which certain fluids act when in contact with membrane enables us to state that the various substances held in solution in the wine pass at once from the stomach into the circulation. Their effect upon nutrition must therefore be much more rapid than that of other substances which require a very thorough digestion of some hours before they can be turned to account. A third effect of the consumption of wine is that it will enable the body to maintain its weight upon a smaller quantity of food than would suffice without its help. The lessening of the amount needed to be eaten appears to me to be an important matter for it is self-evident that if we consume much, a proportionate expenditure of energy must be devoted to its digestion. Too little attention is paid to the evils in the form of sluggishness of mind and body and constitutional weaknesses that arise from an habitual excess of feeding.

It has been argued that persons in health do not require wine. The view I would take, however, is that wine is quite as legitimate an article of diet as tea and coffee and when taken at a substantial meal more appropriate than either of the latter for instead of helping digestion their tendency is to retard it if taken along with food. For the healthy young wine does not appear to be a necessity, the vital powers being so great and the changes so rapid that large quantities of food can be disposed of without much inconvenience.

On moral grounds, however, I would recommend that young people should be accustomed to the use of wine of a suitable strength and character so that the exercise of an equal amount of moderation both with respect to the quantity of food and the quantity of wine taken may become a second nature to them. Passing on to the time when the work of life begins to be more exacting in its demands, the habit of moderation already acquired comes beneficially into play, whilst at the same time a minimum of expenditure and a maximum of production of force is enjoyed. The digestive apparatus never having been systematically overburdened is able to respond the more readily to the increasing demands made upon its energies and thus to carry its owner into safe and comfortable old age and rob of its fascination that power which alcohol possesses of lessening what has been called "systemic hunger"; from what has been said of the action of wine it will not appear paradoxical to state that wine is as equally beneficial to stimulate the appetite and digestion of the weakly as it is to moderate the too vigorous appetite of rude health. For instance, in the weakly, the stimulating, quickly acting, ethereal part of the wine improves the tone of the body, quickens the heart's action, aids digestion and makes the idea of food pleasant; in the case of the robust this primary action is unheeded but the substances held in solution in the wine cause a blunting of the keenness of appetite and a lessening of the temptation to overburden the stomach with more material than is needed by the rapidity of their absorption and the prompt manner in which they are able to nourish the tissues and relieve the sensation of

hunger. Granted that wine is an article of diet it follows naturally that the proper time to take wine is at our meals. The question arises is there one meal more than another which is especially appropriate for the employment of wine. That meal should be the best where the greatest tax is made upon the digestion. As a rule this is dinner but where people are in the habit of making heavy meat breakfasts, suitable wine would be quite as proper. We have the example of the French - a most temperate people - who use wine at their two substantial meals in the day.

Such are briefly some of the points that may be advanced for the judicious use of wine and before passing on further I may perhaps be permitted to remark that it would be found that a very small percentage of those habitually taking alcoholic stimulant abuse its use. A great deal is heard of the intemperate and very little of the temperate, probably owing to the latter being a much less interesting class and not affording so great scope for the exercise of the benevolent impulses of the philanthropic.

The next thing to consider is what class of wine fulfils most fully the requirements of a food. For the hard-worked and the feeble we have already noted that at the commencement of a meal a quickly acting stimulating effect is wanted such as might result from the ingesting of the ethers. These are frequently most abundant in wines of low alcoholic strength. This is fortunate for as but a small amount of spirit is assimilated by digestion at any given time it is very easy to overstep the limit at which wine ceases to be an article of diet. It is important, therefore, for more reasons than one to have a wine for daily consumption that shall not exceed from 20 to 25 per cent of proof-spirit so that a few wine glassfuls of it at a substantial meal may exert all the beneficial effects of wine without any of the drawbacks that result of an excessive use of alcohol. It might be urged that the same result that we obtain from a wine of low alcoholic strength might be obtained by adding water to a stronger wine. This, I think, would not be the case for we should then have a nearer approach to a mixture of alcohol and water than in the

weaker wine where nature herself has made the blend. As we are unable to perform our chemistry with the same results as obtain under natural agencies as is seen in the relative medicinal value of various mineral waters as compared with those artificially prepared, so we must not be surprised if we fail to obtain the desired effect from simply adding fluids which have not become part and parcel of the wine. There may therefore be something in that British prejudice against mixing wine and water together, more especially if the wine is not quite up to the mark.

As you are aware water is a searching test of wine and whilst often making more apparent the qualities of a thoroughly sound wholesome wine, yet it will also painfully reveal their absence. Although an objection exists to adding water to wine, still a liking for weak wines is gradually growing. In this Colony we are fortunate in having the example of the numerous French and German wine-drinkers which is showing us daily how to use wine. Again, travelling having become so general, numbers of us are familiar with the usages of the wine-countries of Europe in the drinking of wines. The use of a dry red wine seems to be the most universal and it seems reasonable that a more perfect result should be obtained when the whole grape is employed, than when the wine is made only from the juice.

An alcoholic strength not exceeding 25 per cent of proof-spirit would shut out many of our Adelaide wines as at present made and if you have agreed with me so far in the desirableness of using weak wines at the table, you will also be of opinion that it is more healthful and conducive to temperance to try to lower the alcoholic strength of our wines than to raise the standard of alcoholic strength that should pass under the shilling duty into England. Strong Ports and Sherries, when genuine and sound, are excellent in their place but they can scarcely upon physiological grounds be recommended to the public as articles of daily consumption and substitutes for tea and coffee. It is the wine that could be safely consumed in quantities of half a

pint at a time that would ultimately prove not only a blessing but a commercial success. The problem to my mind is, can the wine-grower of South Australia produce in quantity and with regularity a variety of wines that shall be characteristic in reminding the drinker of the stock upon which they were grown, that shall have life in the lightness and rapidity of their action upon the body, that shall have sustaining power in their support of the system until the products of digestion begin to be felt and that with all these qualities shall not leave for the morrow the unpleasant effects of an ill-matured or a badly-made wine. The existence of many such wines already makes it hopeful that a steady and increasing supply may be only a question of time.

Hock and Claret are each of its kind models of wine for dietetic purposes, although there may be a few persons with feeble circulations who may require something more generous in the shape of Burgundy or even a glass of Sherry”.

Some Remarks upon Wine as a Food, and its Production.

Paper by DR. S. CLELAND, to be read before the Royal Agricultural and Horticultural Society, on Friday, August 27th, 1880

MR. PRESIDENT AND GENTLEMEN, - At the request of your indefatigable Secretary I am going to venture upon a few remarks on wind matters, and being a member of the medical profession it will perhaps be most becoming if I limit those remarks to the food aspects of the subject. I cannot hope to present to you any views that will be new or which you may not already have duly considered, nor again lay down any very minute rules with regard to the use of wine at the table. My intention is simply to make these remarks a starting point, whence you may proceed to give this meeting the results of your ripened experience and thought on wines and wine-making. As a former wine-grower myself and a pupil for many years of the late Dr. Kelly, you may be sure that the interest I take in this industry is very great, and that being amongst you on the present occasion I feel myself once more a vigneron.

I shall first of all run over lightly the grounds upon which wine would be recommended to form a portion of the diet of an ordinary healthy individual, endeavouring in this way to characterise the kind of wine that would be most suitable. Then, in conclusion, I shall ask you to consider how best such a wine might be produced in South Australia, offering to your notice at the same time any ideas that may occur to me, as to the best means of making our own physical surroundings and raw material correspond more closely to those of the wine-making districts of other countries which are famed for their vintages.

The series of papers from the pens of some of our most eminent medical men that appeared recently in the *Contemporary Review* respecting the uses of alcohol, might almost make it appear superfluous to consider the question further. I am anxious, however, to make a marked distinction between the use of wine and the use of alcohol at the table - in other words, to insist that wine is not simply diluted alcohol or, that when such is the case, that it does not then so properly fulfill the conditions of an "article of diet." Good and natural wines besides their alcohol contain numerous others, albuminous substances, large amounts of salts, free acids and often sugar. With respect to the alcohol itself as it exists naturally in wine, it is open to question whether it is of the same nature as when it appears distilled in the form of brandy, experience at least teaching me that it does not in its natural state in the wine produce those changes in the tissues of organs which the distilled spirit is so apt to do, even when taken in moderation. That wine in its total character of wine possesses a high dietetic value, and a power of preventing scurvy when given along with rations is an opinion that has been completely justified by experience of its employment in the navy.

The present state of our civilisation and the consequent strain which it produces upon our energies, makes it expedient that we should utilise every available means to carry us healthily and happily to the end of life. With the human body as with any other machine the relation between the production of force and its expenditure must over be regarded, and we must also not forget that before fresh supplies can be obtained, more energy must be spent in setting this force free from the material we consume as food. Many of you no doubt will be familiar with the painful sensations, the result of indigestion, that arise when a meal is taken whilst the system is in a fagged condition. The question is, can those who are really the workers afford the time slowly to elaborate from comparatively bulky material the amount of force which is needed to supply the place of that already spent. Can they afford to follow the example of the boa constrictor or the savage, and remain some hours impassive, whilst the process is being completed? Wine of a certain kind may be considered to quicken the process of digestion in two ways - first by increasing the digestive powers, and secondly by lessening the quantity of food that need to be eaten. Without going into any of the elaborate theories and often conflicting results of experiments as to the manner in which alcohol or wine are acted upon in the body, we may direct attention to two or three palpable effects of a small quantity of alcoholic stimulant. It at once increases the heart's action, and frequently removes the sense of discomfort arising from exhaustion. An improved circulation means a more frequently renewed supply of blood to the digestive apparatus, and enables it to respond more readily to the exciting effect of the contact of the food. Thus that which we eat is more quickly and more economically converted into a form suitable for the nourishment of our tissues, and being more thoroughly acted upon there is less waste to be got rid of, and a smaller quantity produces a sufficient supply of force. A knowledge of the way in which certain fluids act when in contact with membrane enables us to state that the various substances held in solution in the wine pass at once from the stomach into the circulation. Their effect upon nutrition must therefore be much more rapid than that of other substances which require a very thorough digestion of some hours before they can be turned to account. A third effect of the consumption of wine is that it will enable the body to maintain its weight upon a smaller quantity of food than would suffice without its help. The lessening of the amount needed to be eaten appears to me to be an important matter, for it is self-evident that if we consume much, a proportionate expenditure of energy must be devoted to its digestion. Too little attention is paid to the evils in the form of sluggishness of mind and body and constitutional weaknesses, that arise from an habitual excess of feeding.

It has been argued that persons in health do not require wine. The view I would take, however, is that wine is quite as legitimate an article of diet as tea and coffee, and when taken at a substantial meal more appropriate than either of the latter, for instead of helping digestion their tendency is to retard it if taken along with the food. For the healthy young, wine does not appear to be a necessity, the vital powers being so great and the changes so rapid that large quantities of food can be disposed of without much inconvenience. On moral grounds, however, I would recommend that young people should be accustomed to the use of wine of a suitable strength and character, so that the exercise of an equal amount of moderation both with respect to the quantity of food and the quantity of wine taken, may become a second nature to them. Passing on to the time when the work of life begins to be more exacting in its demands, the habit of moderation already acquired comes beneficially into play, whilst at the same time a minimum of expenditure, and a maximum of production of force is enjoyed. The digestive apparatus never having been systematically overburdened is able to respond the more readily to the increasing demands made upon its energies, and thus to carry its owner into a safe and comfortable old age, and rob of its fascination that power which alcohol possesses of lessening what has been called "systemic hunger." From what has been said of the action of wine it will not appear paradoxical to state that wine is as equally beneficial to stimulate the appetite and digestion of the weakly as it is to moderate the too vigorous appetite of rude health. For instance, in the weakly, the stimulating, quickly acting, ethereal part of the wine improves the tone of the body, quickens the heart's action, aids digestion and makes the idea of food pleasant; in the case of the robust this primary action is unheeded, but the substances held in solution in the wine cause a blunting of the keenness of appetite and a lessening of the temptation overburden the stomach with more material than is needed, by the rapidity of their absorption, and the prompt manner in which they are able to nourish the tissues, and relieve the sensation of hunger. Granted that wine is an article of diet it follows naturally that the proper time to take wine is at our meals. A question arises is there one meal more than another, which is especially appropriate for the employment of wine. That meal should be the best where the greatest tax is made upon the digestion. As a rule this is dinner, but where people are in the habit of making heavy meat breakfasts, suitable wine would be quite as proper. We have the example of the French - a most temperate people - who use wine at their two substantial meals in the day. Such are briefly some of the points that may be advanced for the judicious use of wine, and before passing on further I may perhaps be permitted to remark that it would be found that a very small percentage of those habitually taking alcoholic stimulant abuse its use. A great deal is heard of the intemperate, and very little of the temperate, probably owing to the latter being a much less interesting class, and not affording so great scope for the exercise of the benevolent impulses of the philanthropist.

The next thing to consider is what class of wine fulfills most fully the requirements of a food. For the hardworked and the feeble we have already noted that at the commencement of a meal a quickly acting stimulating effect is wanted, such as might result from the ingestion of the ethers. These are frequently most abundant in wines of low alcoholic strength. This is fortunate, for as but a small amount of spirit is assimilated by the digestion at any given time, it is very easy to overlook the limited at which wine ceases to be an article of diet. It is important therefore for more reasons than one to have a wine for daily consumption that shall not exceed from 20 to 25 per cent. of proof-spirit, so that a few wine-glass-fulls of it at a substantial meal may exert all the beneficial effects of wine without any of the drawbacks that result of an excessive use of alcohol. It might be urged that the same result that we obtain from wine of low alcoholic strength might be obtained by adding water to a stronger wine. This, I think, would be the case, for we should then have a nearer approach to a mixture of alcohol and water than in the weaker wine where Nature herself has made the blend. As we are unable to perform our chemistry with the same results as obtain under natural agencies as is seen in the relative medicinal value of various mineral waters as compared with those artificially prepared, so we must not be surprised if we fail to obtain the desired effect from simply adding fluids which have not become part and parcel of the wine. There may therefore be something in that British prejudice against mixing wine and water together, more especially if the wine is not quite up to the mark. As you are aware, water is a searching test of wine, and whilst often making more apparent the qualities of a thoroughly sound wholesome wine, yet it will also painfully reveal their absence. Although an objection exists to adding water to wine, still a liking for weak wines is gradually growing. In this Colony we are fortunate in having the example of the numerous French and German wine-drinkers which is showing us daily how to use wine. Again, travelling having become to general, numbers of us are familiar with the usages of the wine-countries of Europe in the drinking of wines. The use of a dry red wine seems to be the most universal, and it seems reasonable that a more perfect result should be obtained when the whole grape is employed, than when the wine is made only from the juice.

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consumption and substitutes for tea and coffee. It is the wine that could be safely consumed in quantities of half a pint at a time that would ultimately prove not only a blessing, but a commercial success. The problem to my mind is, can the wine-grower of South Australia produce in quantity and with regularity a variety of wines that shall be characteristic in reminding the drinker of the stock upon which they were grown, that shall have life in the lightness and rapidity of their action upon the body, that shall have sustaining power in their support of the system until the products of digestion begin to be felt, and that with all these qualities shall not leave for the morrow the unpleasant effects of an ill-matured or badly-made wine. The existence of many such wines already makes it hopeful that a steady and increasing supply may be only a question of time.

Hock and Claret are each of its kind models of wine for dietetic purposes, although there may be a few persons with feeble circulations who may require something more generous in the shape of Burgundy, or even a glass of Sherry. We may take it for granted that there is a tendency in the wines of South Australia to be of high alcoholic strength. From the point of view of our model - Claret - this is not desirable. We have to consider it is unavoidable? What does it arise from? A hot sun, a strong soil, and an injudicious selection of grapes, coupled with allowing a too great maturity, causing a production of sugar at the expense of the other elements of the grape, have much to answer for. With respect to the hot sun. A reasonable plan for avoiding it would be to remove the vines to a greater elevation. Guyot states that roughly speaking at 45 deg. N. latitude, every 200 ft. of ascent is equal to a degree of latitude. The same computation might be applied here, for with the difference between the general temperature of the Northern and Southern Hemispheres, our 35 deg. of S. latitude correspond approximately to the 45 deg. of N. latitude referred to by Guyot. In that case, the difference of temperature between the coast-line and the summit of Mt. Lofty would represent many degrees of latitude further south, and give us a climate approaching that of Tasmania. By simply regulating the elevation of spots chosen for future vineyards any desired quantity of solar heat may be obtained, and the amount of elevation might again be much modified by the aspect. Another important consideration is the soil. From a study of the soils of the Médoc, we find that all the famous wines in that district are grown on deep gravelly or stony soils. What applies there applies as far as experience teaches us elsewhere. There is a very good example of the value of such a soil for wine-making in the vineyard of Mr. White, at Fullarton, where owing to it and the selection of certain varieties of grapes, he has been able as it were to defy the great amount of sun-heat of the plains and to produce a wine of low alcoholic strength. As the very opposite of a gravelly soil, may be mentioned the limestone or marly soils, which even at considerable elevations almost always produce wines of high alcoholic strength. These soils should therefore be avoided if there is any option in the matter, and if there is not they should be planted with varieties of vine that naturally produce weak wines, and have only an extremely small quantity of the fine sorts added to give a character to the produce. The gravelly soils seem pre-eminently fitted for producing wines that produce high character. I have just stated that an unfavourable soil may be made passable by a judicious selection of vine. An excellent soil may also be made less excellent by a want of judgment in the way it is planted. I think that as a rule we have been too fond of trusting to such strong grapes as the Mataro and the Grenache to form the bulk of our vines. With such grapes we cannot fail as a rule to make very alcoholic wines. Then again these varieties of grapes are not sufficiently characteristic to be very suitable for adding in small quantities to give character to a wine. Varieties of grapes might be grown on vineyards simply for the purpose of diluting the must, and in some burned-up marly sites I might even go so far as to recommend the "Wortley Hall" as a desirable wine grape. Perhaps it may appear to some that a simple plan would be to go to the well at once and obtain any required degree of dilution. It seems to me, however, that in diluting must with grape-juice we are not simply adding so many gallons of water, but also forms of albumen, and salts and acids, the especial *role* of each of which in the making of a wine we are quite ignorant, but which may reasonably be considered to be very important; and further, as regards the merely watery part of the grape itself, that has also been subjected to processes in the economy of the vine, of which the water from the well was quite innocent. From these considerations I would look with greater expectation of good results from the addition of watery grapes than the *acqua pura*. A further point bearing upon the grapes is the not allowing them to become what is called "dead ripe." It would be very interesting if some investigator were to make experiments for the purpose of showing the relative results of vintaging grapes from the time that they could be called just ripe until they began to wither. I think the palm would be carried off by the early or medium maturity. In the making of olive oil we have an analogous example, for the best oil is made from the olives that are barely ripe. Following the French authors as much as we do we are very apt to be carried away by the persistent manner in which they insist upon a full maturity of the grape, forgetting the very different circumstances for which they are writing.

Such are a few considerations upon this important matter, and it is now time that I allowed you an opportunity of bringing your ripe experience to bear on the question of the production of South Australian wines, and of rendering them commercially and dietetically a success. With such excellent wines as we already possess as examples there should be no reason why the bulk of our wines should not more closely approach this standard. I have endeavoured shortly to show the grounds for looking upon wines as a true article of a judicious regimen, that as an article of diet wine is preferable to distilled spirit, and a weak wine to a stronger one. Being of opinion that the bulk of our wines erred on the side of too great alcoholic strength, I have ventured to point out how by making various elevations and aspects, selections of soils and varieties of grapes, and a careful determination of the requisite maturity, inter-act upon one another, almost every conceivable result might be obtained, and our wines become as famous for their delicacy and character as they are now for their robustness and strength. And now leaving to your more intimate knowledge of wine matters the further consideration of those numerous minutia which are so essential to the production of a sound and wholesome wine, I draw these remarks to a close.

7.1.4 DR FIASCHI

7.1.4

Reprinted from "The Australasian Nurses' Journal,"
November and December, 1906.



THE
VARIOUS WINES
USED IN
SICKNESS
AND
CONVALESCENCE

Lecture to the Members of the Australasian Trained
Nurses' Association by Dr. Thomas Fiaschi
on June 27th, 1906

SYDNEY
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The Various Wines used in Sickness and Convalescence

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by Dr. Thomas Fiaschi, on June 27, 1906.

IT was not without hesitation that I accepted your Secretary's kind request to deliver you a lecture, and the only subject that I could think of, new to you and familiar to me, was wine. This I thought might interest you, considered in its use during sickness and convalescence.

To avoid misunderstandings, I tell you frankly that I consider the temperate use of wine a valuable support to healthy man in this thorny path of life, and that the judicious use of it has proved itself to me of incalculable benefit in the treatment of the sick and convalescent.

In making you this profession of faith, I do not conceal from you that in recent years a small section of the medical profession has started a crusade against all use of alcoholic beverages, and of wine also, both in health and in disease. Whether they are right, and those who think like me are wrong, is a question that I am not going to discuss tonight. Enough for you to know, that so far the vast majority of medical men believe in the temperate and judicious use of wines, and that whether you individually believe in them or not, it will often be your duty as Nurses to see that certain wines are taken by your patients according to the physician's prescription. The

administration of wine, then, remains in your hands, and I think it will not be time lost for you to acquire some idea of what wine is, and what are the wines generally ordered by medical men in Australia.

The number of wines in the world is so great that it would be impossible to deal even with a very small portion of them in the short space of time before me tonight.

Types of Wine.—I must limit myself to describe to you five wines generally known in the world as typical wines, and these are claret, hock, port, sherry, and champagne.

Common Character of Wines.—All these wines have the common character that they are made out of the fermented juice of the grape, but they differ one from the other on account of the various kinds of grapes from which they have been made, of the soil and climate in which these were grown, and of the very different treatment received by the wines during their ripening or period of probation.

Natural Wines.—Some are absolutely natural, and by this we understand that from the day the grapes were crushed until the moment the bottle is opened for consumption no foreign matter has been added to them. The winemaker keeps

Copies of this brief article on wines by my father having become exhausted a considerable time ago, I have had it reprinted to comply with the requests of many professional, viticultural and trade friends.

August, 1928.

P. FIASCHI.

them for two or three years in casks, perfectly still and free from the contact of air, drawing them off from the lees or deposit of refuse material that accumulates in the bottom of the casks twice or three times a year, and at the end of a certain time they are bottled. The natural wines are claret and hock.

Fortified Wines.—The other wines are called fortified because from their first making, a certain amount of alcohol is added to them, and these are port and sherry. Champagne is not a natural wine, because syrup is added to it so as to increase effervescence, and sometimes brandy also.

Common Chemical Composition of Wines.
—Wine is a liquid composed principally of water—good, wholesome, germ-free water that has filtered through that very perfect filter, the vine plant, in a proportion that varies from 80 to 90 per cent., according to the various wines. The next component of wine is ethylic alcohol, which, considered as absolute alcohol, chemically pure, is found in wines in the proportion of from 8 to 20 per cent. Together with alcohol are some ethers and essential oils, which form to a certain extent the aroma or fragrance, the "bouquet" of the wine. Another important part of wine are the acids, which vary from 3 to 8 per thousand and which impart to the wine the fresh taste. These are principally due to cream of tartar and malic acid, and in a minor proportion to free tartaric acid, and to traces of succinic and citric acids. These are the so-called fixed acids, which cannot be evaporated by heating the wine; but all wines contain a small proportion of a volatile acid, which on heating completely evaporates, and this is chiefly acetic acid. The proportion between the fixed and volatile acids is very important, for if the latter are present in a quantity

greater than one to three of the former, the wine is turned or pricked, that is, on the way of becoming vinegar. Wine also contains grape sugar, which varies according to the kind of wine; the so-called dry wines are not sweet, and contain merely a trace of sugar, whilst the sweet wines may contain from 2 to 12 per cent. of sugar; exceptionally, as in the very luscious wine of Malaga and in a few South Australian liqueur wines, it may go to 16 and 20 per cent. Glycerine also is found in a small proportion in wine, and helps to give it softness.

Another component of wine is lecithine, one of the organic compounds of phosphorus very much valued as food, because it is found both in the animal and vegetable kingdom, and in the animal tissues exists principally in the brain and nervous tissues. Lecithine is found in wine on an average of 30 grains to a gallon.

When you gradually heat a wine until all the water and alcohol and volatile acids are evaporated, you have a deposit left which is called *dry extract*. This, besides the sugar and glycerine, contains cream of tartar, malic and tartaric acids, a gum-like substance, tannin and œnocyamine. As a general rule, the greater quantity of dry extract found in wine the better, for it gives the so-called body, and adulterated wines, made in the depths of certain town cellars out of water, spirit and concoctions, have a low extract. If you burn a dry extract you obtain from it a certain amount of ashes. These contain various mineral substances such as phosphates of calcium, iron and manganese. The average amount of phosphoric acid contained in wine is 34 grains per gallon, of iron about half a grain of metallic iron per gallon, and of manganese one-third of a grain per gallon.

Claret.—Coming now to the description of the various wines, I shall begin with claret. Wines of the claret type are wines having the same character as the red wine made in that part of the west of France called the Bordeaux district. You all must remember Bordeaux from your school days, as for 300 years, between 1154 and 1452, it was under the English domination, and was for a time the seat of the brilliant Black Prince, whose son Richard was born in the city of Bordeaux. This district, one of the most privileged spots in the world for the production of wine, is near the mouth of the river Garonne, and is divided in three parts—Medoc, Cotes and Graves. The first is the one that produces the most world-renowned clarets. These are red wines of a beautiful deep ruby clear colour, and light in strength, for

obtain a very accurate chemical analysis of fourteen genuine Bordeaux wines or clarets. I beg *The Lancet's* permission to show to you here the table of their mean results. You can compare them with the analysis of two Bordeaux wines, that for some years have been in my possession, and of three Australian clarets. The latter were not specially selected for this purpose, but were bought by me at a well-known wine store in George Street at a cost of from two shillings to half-a-crown a bottle. My only precaution in tasting them was to make sure that they were of a distinct claret character and not of a coarse Burgundy type, as some of the Australian wines put on the market with a claret label frequently are.

	Bordeaux Clarets as found in Sydney.		Australian Clarets.		
	1890 Chateau Latour.	1895 Chateau Camponac.	Hawkesbury River, 2s. 3d.	Hunter River, 2s. 6d.	South Australia, 2s. 3d.
Alcohol, % by volume	11.000	11.20	11.96	13.24	12.05
Total volatile acidity as acetic acid %	0.120	0.105	0.120	0.065	0.111
Total fixed acidity as tartaric acid %	0.300	0.400	0.400	0.400	0.440
Tannin	0.140	0.073	0.096	0.063	0.047
Dry extract	2.437	2.360	2.780	2.475	2.425
Sugar	Traces	Traces	0.08	0.30	0.000
Ashes	0.202	0.222	0.380	0.320	0.271

they contain only between 9 to 12 per cent. of absolute alcohol; exceptionally 13 per cent. They have freshness owing to a certain amount of acids, but rarely do they contain more than from 4 to 6 per thousand, reckoned as tartaric acid. They are noted for their dryness, that is, absence of sugar, which can be found only in minute traces, and their ashes are rich in tartrates of iron and manganese. They have a most delicate and suave perfume peculiar to them. *The Lancet* has recently gone to great expense and trouble to

The Lancet mean results of the analyses* of fourteen genuine Bordeaux clarets are as follows:

RESULT IN GRAMMES PER 100 C.C.	
Alcohol by weight	9.83
Alcohol by volume	12.12
Water	87.01
Extractives	2.55
Glycerine	0.642
Sugar	0.130
Tannin	0.238
Proteid N x 63	0.278
Total volatile acidity as acetic acid	0.127
Total fixed acidity as tartaric acid	0.46
Probable real tartaric acid	0.40
Potassium tartrate	0.166
Total mineral matter	0.22

This column gives the total acidity, less that due to tannic acid.

* *The Lancet*, February 3, 1906, p. 326.

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All the analyses of wines that I present to you tonight, with the exception of that of *The Lancet*, were expressly made for me in Sydney, as I did not care to trot before you the much-hackneyed tables found in the various books on wine, and I am indebted for them to the skill and kindness of Professor Blunno and of Mr. Musso, of the New South Wales Viticultural Department. If you carefully compare the analysis of the Bordeaux clarets with those of the Australian, you will be struck by their great similarity, showing that for practical medical purposes our clarets can fittingly take the place of the French. The only differences worth mentioning are—first, that of the slightly larger quantity of alcohol in the Australians; this difference may be justified by the fact that all the Australian clarets represented in this table were wines about three years old, that is, wines made during the drought which has affected our vineyards for the last six years. I have no doubt that, with a return of the normal wet seasons, this difference will disappear, and, after all, even now it does not amount to much more than 1 per cent. Second, the other difference worth noting is that of tannic acid, which is much less in the Australian than in the French clarets. Whilst this difference is important from an oenological point, because tannin helps to preserve wine, I do not think that this difference affects the hygienic value of our wines. You will note that in point of total acidity our wines compare well with the French.

Medical Uses of Claret.—Claret acts as a tonic and reconstituent, and is a valuable aid to digestion. It is not so much used in the treatment of acute diseases as in those conditions of general debility, impoverishment of the blood, and enfeeblement of the digestive powers, which either precede or follow serious diseases. Hence it is

specially recommended for delicate and weak people, for dyspeptics, and for the anæmia of the young; also for convalescents from fevers, from prolonged suppurations, and from surgical operations. Nor should we be deterred from giving it in diabetes or chronic rheumatism, if a stimulant is indicated, as the quantity of glucose present is a mere trace. In this climate claret is specially useful on hot days, when the stomach becomes languid and unable to digest the amount of food required to keep up the nerve strain entailed in the struggle of civilized life. It both tones the stomach and the heart, and that you may not think me an interested authority, I shall quote you Sir Dyce Duckworth, who recommends claret even in such an extreme case as thoracic aneurism: "In cases of aneurism where there is a condition of aortic reflux, it is well not to be too rigid. Such cases are unfit for Tuffnell's treatment, and a little wine should form part of the diet for most patients, that of Bordeaux being probably the best."*

Dose of Claret.—The quantity of claret that should be given in the twenty-four hours should not exceed one reputed pint bottle, and this really means 13 ounces. In exceptional cases this quantity might be increased to one reputed quart bottle (26 ounces) in the twenty-four hours. This dose should be proportionately decreased according to age in young people. To derive the full benefit of claret, it should be given with meals, and diluted with a little water. Thus used, claret will help to diminish the ingestion of other beverages, such as tea and coffee, by far more injurious to the nervous system and digestive organs than claret can ever be. Remember that delicate clarets soon spoil if left uncorked,

* *The Practitioner*, April, 1906, page 474.

so you Nurses ought to order the claret according to the quantity required for your patient, either in quart or pint or baby bottles. Once a bottle is uncorked it should be consumed the same day, or at the utmost within two days.

Coming now to the economic value of claret, it is well for you to know that Bordeaux claret is sold in Sydney at between 3s. 6d. and 6s., and Australian claret from 2s. to 3s. a quart bottle.

Light red wines of the claret type constitute the vast majority of wines made in the world, and, quite apart from Bordeaux and Australian clarets, there exists an abundance of such wines in France, in the north of Spain, in the south of Germany, in Switzerland, in Italy, in Austria and Hungary, in Algeria, Tunis, in California, in the Mendoza Province of the Argentine, and in Chili. Some of these are excellent, but very few of them find their way to Australia, so I need not detain your attention on them. I cannot very well leave the subject of dry red wines without mentioning burgundy, on account of its celebrity and because many Australian wines resemble it.

Burgundy.—This wine is made in that noble province of France, the Côte-d'Or, or golden slope, situated a little to the east of the centre of France, close to the dividing range between the Yonne confluent of the river Seine and of the Saone confluent of the river Rhone. Burgundy is a dry red wine, but is far more generous than claret, on account of having a greater body and a higher degree of alcohol. For many centuries these wines have been highly prized and very much renowned for their flavour and bouquet, and for a peculiar, delightful softness, called by the French *velouté*, or velvety. I regret to say that they have been equally renowned amongst physicians, owing to

the fact that the prolonged use of them favours the development of gout. It is difficult to say whether they really deserve this stigma or whether they have unjustly acquired it, owing to the luxurious and high-living habits of the wealthy classes who mostly use them. The fact that sugar is present in burgundy in larger quantities than the mere trace present in clarets, and that it is a wine notoriously unstable—that is, of not very great keeping qualities—makes me inclined to think that this bad reputation is not altogether undeserved. Keep, then, this danger in your mind, and do not administer burgundy, or wines of the burgundy type, to middle-aged people inclined to gout or rheumatism; reserve them for young convalescents from fevers or other septic diseases, and you will then find that the peculiar generous properties of these wines will greatly hasten convalescence. Nor include all joint diseases with gout or rheumatism. That very crippling disease, familiar to you under the name of rheumatoid arthritis, seems to benefit by the use of liberal diet and generous wine. Many authorities on this disease recommend the moderate use of burgundy, and to quote the most recent one to you, I shall give you an extract from an article of Dr. Luff on the diet in gout and rheumatism: "In rheumatoid arthritis a moderate quantity of wine or stout should be taken with lunch and dinner. Any kind of wine that agrees with the patient may be taken, but perhaps a generous red wine, such as burgundy, is the most suitable."¹

Hock.—The wine from which hock derives its name and type is a white, dry wine, produced in the Rheingau, a district on the right bank of the river Rhine, near Bingen. The Rheingau is situated on the Taunus range of hills, covering an area ten miles long by four miles wide. Hock

is made chiefly from the Reisling grape. Great care is taken in the vintage. This is delayed as long as possible, so as to have on the grapes a peculiar mould called "edelfaide," or noble rotteness. These rotten grapes are separately picked, for in them reside the properties that after some years' preparation give to the hock its exquisite flavour. It is a slow maturing wine, but a good keeper, and some of the great proprietors in Germany can present hocks over a century old. These wines are perfectly light, natural wines, not a drop of alcohol ever being added to them. Their bright golden colour is pleasant to the eye, their fragrant and pervading odour charms the nostrils, and their soft, exquisite, delicate flavour satisfies the palate. A man's vital thread must have been completely snipped through by Atropos' scissors if he can resist the charm of such an insinuating nectar. No wonder that the Germans are so proud of these wines, and honour them by paying enormous prices for the best of them. I am glad to tell you that amongst the many imports to Australia, some wise benefactor brought out this precious vine the Reisling, and that it has prospered very well with us. In spite of the difference of climate, the Reisling has even here distinguished itself by its produce. Our hocks, like our clarets, are particularly good wines, and can be recommended for use. I present you the analysis of two particularly good hocks, one German and one Australian, and you will see that though there is a slight difference between the two, the similarity is yet very great.

	Johanna- berger Cabinet, 1895 (imp.).	Victorian Hock, from Lillydale, 1902.
Alcohol by volume %	11.9	12.13
Acidity as tartaric acid, total %	4.9	4.0
Acidity as tartaric acid, fixed %	4.0	2.8
Acidity as acetic acid, volatile %	0.72	0.96
Tannin %	0.004	0.038
Sugar %	9.04	9.03
Dry extract %	25.05	19.64
Ashes %	1.83	1.64

You cannot go very far wrong in the medical use of hock; it can be given in all cases of weakness and convalescence, gout or rheumatism not being a counter indication to the moderate use of them. In fact, hock is one of the most suitable wines in similar cases, and, touching this question of wines for the gouty, it will be interesting for you to have on this subject the opinion of Dr. Guthrie Rankin, a very good authority: "Of stimulants, it may be said that for the goutily disposed person the less alcohol in any form he imbibes the better. But complete abstinence is a counsel of perfection which makes life very dull for many of us. If partaken of reasonably, and with meals only, I do not believe that a well-matured wine or beer of the Pilsener quality, or a freely-diluted spirit does any harm. I have been unable to persuade myself that whisky is the only form in which alcohol can be safely taken. The heavier wines and malt liquors should be avoided, but a light moselle or hock, especially if diluted in one of the natural table waters, seldom disagrees, and either is to many palates preferable to the everlasting whisky, which the public has come to believe in, erroneously, I am sure, as the only alcoholic beverage which the gouty may venture on with impunity. Tea is often more deadly than alcohol, and should never be taken more than once a day."²

Dose.—The dose of hock is the same as claret.

Price.—There is a great difference in the price between real good German and Australian hock. The first ranges from 5s. to 40s. a bottle, whilst a good, sound Australian hock can be purchased from 2s. 6d. to 5s. a bottle.

Closely analogous to hock is another dry white wine called Chablis, made in Burgundy. This wine is a light, pleasant,

fresh wine, possessing a characteristic flinty taste, called by the French *pierre à fusil*, and is served at dinners with the fish course. This wine and still Moselle possess the same hygienic properties as hock, though very different in flavour.

Port.—Coming now to the fortified wines, let me tell you that they hardly deserve the name of wine, as in reality they are a mixture of wine and alcohol. The wine so well known to you under the name of port, originally contains not more than 12 per cent. of absolute alcohol, but by the time it is put on the British market its alcohol has increased to 20 per cent. Mr. Johnstone, of the Testing Department of H.M. Customs, "considered 49 gallons of adventitious proof spirit per pipe to be nearer the standard of the port wine ordinarily imported into England."³ Theoretically, this is a very great fault of these wines, for this large quantity of alcohol is added not only for the purpose of increasing its intoxicating qualities, but for the sake of retaining unfermented a quantity of sugar; and this mixture of alcohol and sugar is detrimental to health. Practically we find that in matters of taste and palate it is no use to theorize too much. Port wine, as now sold, suits the British palate, and whilst on one side we find French authorities pronouncing port wine to be "a heavy wine, very full of colour, rich in aroma and spirituousness, but lacking all freshness,"⁴ we find on the English side a quantity of writers, from old Dr. Samuel Johnson to the late poet laureate, Lord Tennyson, praising port wine. Recognizing, then, that it is a most difficult thing to alter national tastes, we must be satisfied to reduce the evil, by making sure that the port used by us for invalids is made out of the best grape juice and the best alcohol, and that in prescribing it we pay the same strict attention to quantity

as we do with brandy or whisky. By the term "port" we do not understand all Portuguese wines, but only those made in that part of northern Portugal surrounding the river Douro, and having Oporto as its shipping centre. The finest port is obtained from the Traz os Montes district, a tract of steep hills and narrow ravines thirty miles long by five miles wide. The hills are so steep that to prevent the soil from being washed down, the vines are planted in narrow terraces, supported by rubble walls, one above the other, each not wider than two yards, so that each hill from the river to its summit is a succession of gigantic steps, very similar to the steps of the Great Pyramid. In the season approaching vintage the sight of these hills is very beautiful, looking as if they were covered with a tapestry of green vine leaves and dark blue grapes. The grapes used for making port are chiefly of the varieties called *alvarelhao*, *bastardo*, *mourisco* and *touriga*, and are crushed and fermented in large stone tanks, three feet high, called *lagares*. The juice is fermented with the skins and stalks, and as soon as the quantity of sugar is reduced to from 4 to 6 per cent., it is rapidly drawn in casks, and spirit added at the rate of 5½ to 11 gallons per pipe of 116 gallons. This checks the fermentation, but to prevent a renewal of it later on, more spirit is added when the wine during the winter is carried to the large wine merchant stores at Villa Nova de Gaya, a suburb of Oporto. There it is matured in wooden casks, and when three or four years old it is shipped abroad, chiefly to England, Germany and Brazil. Port is a potent wine, owing to the presence of from 18 to 22 per cent. of absolute alcohol; it is lively and clean on the palate, with a good round flavour, and when not too young and reeking of ardent

spirits has a very fragrant, fruity perfume. The colour varies with the vintage and with fashion, from a full rose to a full purple. To give you an idea of the exact composition of port, I present you the analysis of two ports, both excellent, the first of which has been in my possession for the last fourteen years, and the second has been specially presented to me for the occasion by Messrs. Sandeman, the great port and sherry firm. Alongside, I show you the analysis of four Australian ports, and you will find they are a very good imitation of the genuine port.

also a rather singular and new explanation of the influence of port in causing gout, as you will see by the following extract :⁴ "Port is a wine which is especially unsuited to the majority of gouty subjects. The gout-producing properties of the wine are, I believe, mainly dependent on the ethereal compounds which give the aroma or bouquet to the wine. If this view is correct, I would explain the well-known fact that old and matured ports are much more provocative of gout than comparatively new ports taken direct from the wood. The development of the

TABLE OF PORT ANALYSIS.

	Good Old Oporto Port.	Very Fine Sandeman's Port.	Australian Ports.			
			1	2	3	4
Alcohol % volume	20.69	21.76	17.5	20.00	18.3	19.00
Fixed acidity as tartaric acid % ..	0.38	0.38	0.23	0.21	0.24	0.20
Volatile acidity as acetic acid % ..	0.072	0.050	0.15	0.07	0.124	?
Extractives %	3.33	2.83	3.9	4.6	3.9	4.0
Sugar %	5.55	7.48	6.0	7.6	6.7	12.3
Tannin %	0.016	0.0100	?	?	?	?
Ashes %	0.220	0.233	0.24	0.28	0.29	0.24

Medical Uses of Port.—Port is not only a powerful restorative in the convalescence from exhausting diseases and serious operations, but owing to its spirituousness it can be given as a rapidly diffusible stimulant in acute diseases, such as fevers, septicæmia and pneumonia. In such cases it is frequently well tolerated by patients who cannot take brandy without feeling sick. Port makes a good egg-flip, though ugly to look at. Even more than burgundy, port is blamed for causing gout, and I certainly would not recommend it to anybody as an habitual beverage, but it is interesting to find that an authority like Dr. Luff can find use for port in certain forms of gout. I remember our lamented Dr. Angel Money on more than one occasion expressed the same view. Dr. Luff has

ethereal compounds in the wine extends over many years, and especially progresses after the wine is laid by in bottles. In a few cases of asthenic gout, especially in old people, a moderate amount of comparatively new port, taken direct from the wood, undoubtedly does good. In my opinion, the wines which are least injurious as a rule to gouty subjects to whom it is found necessary to order a small amount of wine, are the light still white wines, such as moselle, certain French wines, certain Austrian wines, hock, and a few of the lighter Australian wines. The latter, owing to their great alcoholic strength, should be taken diluted with water or some mineral water."⁴

Dose of Port.—I shall give you the dose of port in ounces, because the capacity of wine glasses varies so much. The quantity

of port given in twenty-four hours to adults should not exceed 7 or 8 ounces, except in very special cases. Though I give you the quantity in ounces, always try if possible to administer your wines in wine glasses, and pour them before the patients from the wine bottles. I often see, with a shudder, Nurses in public and private hospitals pour wine out of an ugly medicine bottle. It is a question of form and habit, but patients are very sensitive to such. If the patient cannot move from the recumbent position, you must necessarily use the feeder, not otherwise.

Prices.—A fairly genuine port can be bought in Sydney for 5s. to 10s. a bottle, and a good sound Australian port from 2s. 6d. to 5s. a bottle.

Sherry.—This classic wine, the "excellent Sherris" of Shakespeare, like the wines above described, is grown in the neighbourhood of a noble river, the Guadalquivir, celebrated in history and romance. It derives its name from Jerez, an Andalusian city situated about seventy miles east of Gibraltar. The best sherris are made in a triangular stretch of land twelve miles long by ten miles broad, near the mouth and on the right bank of the Guadalquivir, whose three angles are San Lucar de Barrameda, Jerez and Puerto de S. Maria. The soil is a mixture of light sand and clay, impregnated with oxide of iron, and the grapes used are chiefly the Listan, the Peruno and the Pedro Xmenes. There are many different types and classes of sherry, and I will only mention to you the manzanilla, having a slightly bitter and aromatic flavour, resembling that of the chamomile flower; hence its name, for "manzanilla" is the Spanish for that flower. As this wine ages it acquires a most delicate flavour, with an almost

ethereal perfume, giving it the character of amontillado. The oloroso is another kind of a richer, fuller and nutty flavour. Two methods are peculiar to the making of sherry wines. First, the plastering of the grapes. Before crushing them, these are sprinkled with gypsum or plaster in the proportion of about 6 lb. to 108 gallons of juice. This is done partly to check over-activity in the fermentation, and also for the object of decomposing the bitartrate of potash. By so doing, we obtain insoluble tartrate of lime, which precipitates, sulphate of potash and free tartaric acid. The latter increases the free acidity of the wines, and in course of ageing favours the production of ethers. Much outcry has been raised against the practice of plastering, but on the best authority, that of Robert Hutchinson,⁸ I can assure you that the small quantity of sulphate of potash found in sherry is not harmful, having only a slight purgative action. The other peculiarity in the vinification of sherry is the *soleras*. Instead of keeping each vintage by itself, as customary with all other wines, the practice in Jerez is once the wine becomes four or five years old to pump it in butts of old wines of a certain type that have been drawn, but yet contain about one-half of the old wine. Practically the butts are never emptied, but each year one-half is drawn and put on the market, and the vacant space is replenished with wine one or two years younger. The butt of the original old wine is called *solera madre* (mother); and sometimes is over 100 years old. By this practice a constancy of type is preserved, and the old wine seems to act as a ferment and develops in the younger wine the peculiar ambrosial and balsamic flavour of sherry. I am able to present you the analysis of two good sherris—one a very old Peter Domecq, for many years in my

possession, and the other a very fine wine, kindly presented for the occasion by Messrs. Sandeman; also the analysis of three Australian sherries.

food, and what form this should take must be determined much by the patient's own observation as to what suits him best. No doctor can do more than make a

ANALYSIS OF SHERRIES.

	Very Dry Old Peter Domocq.	Very Choice Old Sandeman.	Australian Sherries.		
			1	2	3
Alcohol in volume %	18.79	20.86	21.00	19.00	17.00
Fixed acidity % as tartaric acid ..	0.25	0.31	0.23	0.23	0.22
Volatile acidity % as acetic acid ..	0.056	0.104	?	?	?
Extractions %	2.02	2.69	3.5	3.4	3.3
Sugar %	0.502	2.35	1.4	1.2	1.5
Tannin %	0.025	0.032	?	?	?
Ashes %	0.426	0.478	0.22	0.3	0.18

Sherry is a white wine, ranging in colour from pale amber to brown. Like port, it is a strongly fortified wine. The quantity of sugar varies according to qualities, only traces in the dry, and going as high as 4 per cent. in some of the sweet. The most characteristic quality of sherry is that it contains a very large quantity of volatile ethers, more so than any other wine, and this gives it a special value.

Medical Uses.—Just on account of its great richness in ethers it can be given as an anti-spasmodic in certain gastralgias. It is eminently suited for making a wine whey, and an excellent egg-flip, and is one of the wines that children take best. It is a good tonic and restorative in the convalescence from acute diseases, or where the heart, through various causes, becomes weak. Like port, it should not be given in cases of gout. Even Dr. James Goodhart, an authority above suspicion, has a good word to say of sherry in certain cases, as you will see by the following extract from a paper on the treatment of uric acid: "I do not doubt, too, that it is true that some do require a small quantity of alcohol as part of their daily

rough guess. But, as a general rule, the lighter the wine the better, and even then it is a good rule not to take it year in and year out; it is much better to do without any some days, when work is less, appetite greater, and so on. I am afraid I am somewhat heretical as regards wines, but this I know, as has often been said before, that there is many a gouty man who does well on a glass of port after his dinner; many another who takes his two glasses of champagne daily and seems the better for it, and I have still personal leanings in favour of good old sherry in cases where a little wine seems a judicious prescription. I am as much as ever an opponent of the prevalent dictum 'you must not touch wine; you must drink whisky,' which too often means to the patient a glass of good wine is poison; I may take as much whisky as I like, and it is harmless. One of the most mistaken and mischievous beliefs that ever plagued a world."

The dose and prices of sherry are identical with those of port. Analogous to sherry in character and in medical properties are two other well-known wines—Madeira and Marsala. Another

similar celebrated wine is Malaga, but differs from sherry in being exceedingly luscious, from excess of sugar, so that it is only useful in the convalescence of ladies and children, who have a sweet tooth.

Sparkling Wines: Champagne.—This great wine, compared to the four wines previously mentioned, is a modern wine. It began to be known in the year 1662, after the Restoration, but the wine shipped to England under Charles II was very different from the wine that we have now. Though possessed of a very attractive, effervescing creaminess, it was found to be very unstable and harsh. The merit of having established the rules of preparing champagne very much as we now have, belongs to a monk, Dom Perignon, the cellarer of the Abbey of Hautvilliers, near Rheims. This old worthy first discovered that by mixing the vintages of various vineyards close to his Abbey, much better wine could be obtained. Then he discovered that a piece of cork could retain the gas within the bottle much better than a piece of oiled rag. So, step by step, he was able to produce, in corked bottle, a good-keeping, reliable, sparkling wine, with the creamy effervescence which only the soil of Champagne can give. Dom Perignon died in the year 1715, and since then the making of champagne has become a great industrial and scientific enterprise, and the pop of its corks has been heard in every corner of our planet—from the neighbourhood of the Arctic Pole to the depths of Africa's impenetrable forests.

Champagne is a province about three hours railway from Paris. The soil is chalky, and the vines grown in it are chiefly of the Pineau variety, yielding black grapes. These are rapidly pressed, and the juice put to ferment in large vats.

When the fermentation is completed, the wine is run in casks and left there for the whole winter, during which the various qualities are blended together. At spring-time the wine is bottled, and the bottles are laid for two years in very large and deep cellars dug underground in the chalky cliffs. The object of these deep cellars is to secure a cool and constant temperature, and thus prevent the bursting of too many bottles. At the end of that time the bottles are placed cork down, so as to allow all the deposit to settle on the cork, and this by very experienced workmen is rapidly removed—a delicate operation called "dégorgement." Before recorking, a certain amount of syrup and a little brandy is added to each bottle. This for the object of developing further gas and to correct the harshness, which otherwise would make these wines almost undrinkable. I here present you with an analysis of champagne, which, like those of the other wines, has been expressly made for you:

CHAMPAONE, 1898.		
IMPERIAL MOET-CHANDON.		
Alcohol %	.. ..	12.00
Total acidity as tartaric acid %	.. ..	0.80
Fixed acidity as tartaric acid %	.. ..	0.46
Volatile acidity as acetic acid %	.. ..	0.112
Tannin %	.. ..	0.005
Extractives %	.. ..	2.43
Sugar %	.. ..	0.49
Ashes %	.. ..	0.107
Gas-pressure atmospheres	.. ..	4.5

Presents a good reaction of iron and manganese.

The addition of syrup and brandy varies to suit the palates of the various nations for which champagne is made. The Russians and Germans like it very sweet, the English very dry, and the French and Yankees moderately sweet and dry. From the hygienic point of view, the lighter and drier the better is champagne. Good champagne should be of a pale straw colour. The taste of it varies with the soil from which it comes. "To the wine of Ay the soil lends a flavour of peaches, and to that of Avenay

the savour of strawberries; the vintage of Hautvilliers, though fallen from its former higher estate, is yet marked by an unmistakable nutty taste, while that of Pierry smacks of the locally abounding flint, the well-known *pierre à fusil* flavour."⁸

Medicinal Uses.—You must remember the old joke: When should you drink champagne? Whenever you can get it. I shall amend such an extreme statement as follows: When should you give champagne to a patient? Whenever a stimulant is required, and the patient's purse is long enough to afford it. With the exception of gout and diabetes, champagne can be given in all diseases where prostration, weak heart action, and mental and nervous depression require a spur to tone and cheer up. It is particularly suitable in certain

cases of sickness when other stimulants have been rejected, and, as Dr. G. Newton Pitt writes, "It is most valuable when the appetite has failed in prolonged illness or during convalescence."⁹

Whilst singing the praises of champagne, I wish to remind you that it is distinctly a beverage for the well-to-do. I consider it a cruelty to put struggling people to the expense of champagne, when Australian hock or sherry and soda-water would have answered the same purpose at one-fifth of the cost. Never carry your preferences or prejudices too far, for in this world it is possible to find a substitute for almost everything and everybody.

Dose.—For an adult, a pint bottle; exceptionally up to a quart in the twenty-four hours.

Price.—From 11s. to 15s. a bottle.

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- ² Dr. Guthrie Rankin on "Suppressed Gout," *The Practitioner*, May, 1906, page 664.
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- ⁶ "Food and Dietetics," third impression, page 365.
- ⁷ "The Treatment of Uric Acid," by Dr. James Goodhart, Consulting Physician, Guy's Hospital, *The Practitioner*, January, 1906, page 17.
- ⁸ Vizetelly, "Facts about Champagne," page 19.
- ⁹ "On the Diet in Acute Illness," *The Practitioner*, April, 1906, page 482.

7.2 WINE PRESCRIPTIONS AND QUOTES BY THE ANCIENTS, NOT ALREADY MENTIONED IN THIS THESIS FROM DR SALVATORE LUCIA'S BOOK "A HISTORY OF WINE AS THERAPY"

(in alphabetical order)

Dr Francis Anstie from his book "On the Uses of Wine in Health and Disease". Macmillan and Co., London, 1877, (Lucia Pages 164-165-166-167).

"He drew sharp distinctions between "the *strong* wines, including port, sherry, madeira, marsala, and all that genus" and the "light wines, ... namely, [those] that average no more than 10 per cent of alcoholic strength," maintaining that the place of the former was "rather among the cordials, to be used under expressed and careful medical sanction..." For daily use by healthy adults, he insisted that wines should contain "not...more than 10 per cent absolute alcohol: 8 or 0 per cent is better." But for children, "where a tendency to wasting is very marked," and "of course always under medical sanction," he recommended

...precisely the reverse of the plan which is appropriate for adults. The latter [adults] should be advised to take wine only with their meals, and the problem, therefore, is to find for them a light natural wine which may safely be used as a beverage. With children, on the contrary, it is much better to give wine at separate hours, as if it were strictly a medicine; and the potent wines, disguised and made somewhat disagreeable by the addition of bitters, are much the best: for example, a teaspoonful of sherry or port made up to a table-spoonful with strong infusion of gentian, which might be given three times a day to a child of three or four years old...

For the aged, too, he specified the stronger wines:

As a dietetic aid in the debility of old age the more potent wines are even more remarkably useful than in infancy and childhood. More particularly in the condition of sleeplessness, attended often with slow and inefficient digestion, and a tendency to stomach cramps, a generous and potent wine is often of great value. It is not desirable for such persons to include a large allowance of fluid in their daily diet, and their alcohol may well be taken in the more concentrated forms... One very important effect of the highly etherized wines, which are at the same time of rather high alcoholic strength, is their power to produce tranquil and prolonged sleep in aged persons... Plain alcohol is... a much less efficient hypnotic.

Dr. Anstie devoted half of his book to “the uses of wine in health,” and the remainder, in two sections, to its uses in acute and in chronic diseases. For the healthy, “the moderate diners-out, and the virtuous dancing young ladies,” he advised that

...half a bottle a day of...[light] wine for a sedentary, and a bottle a day for a vigorous and actively employed adult, affords a reasonable and prudent allowance of alcohol; and this quantity of wine, either alone or with water, will be enough to satisfy the needs of moderate persons for a beverage at lunch and dinner, the only two meals at which alcohol should, as a rule, be taken.

Deploring “the multiplication of alcoholic drinks which are taken by the richer classes,” he wrote:

It is therefore much to be desired that people may be educated in the direction of using only one alcoholic drink; at least for every-day consumption...adherence to one drink, and generally one *wine*, is almost a necessity for the purposes of health.

In acute diseases, Dr. Anstie prescribed plain diluted alcohol, rather than wine, during persistent “high temperature,...delerium, or other evidences of nervous prostration, great rapidity with a high degree of dicrotism of the pulse, and especially a tendency of the latter to become unrhythmical,” and also in pneumonia and bronchitis without a high fever. But “in the later stages of severe febrile disease with great exhaustion of the heart, especially when combined with sleeplessness,” he preferred “the ethereal constituents of wine...[of] low alcoholic strength..., together with the presence of caronic acid, as in the finer effervescing wines...” For patients in the third and fourth weeks of typhoid fever, he recommended old sherry as ideal:

...we shall, I believe, do best by throwing aside brandy, unless we can procure the most *recherché* kinds, which are rich in ethers, and betaking ourselves to the use of the finest old port or sherry, or to some of the more excellent qualities of Rhenish or Hungarian wines. From six to twelve ounces per diem of fine old sherry...given in divided doses at intervals of half-an-hour, affords the ideal stimulant required under the circumstances; it is surprising how rapidly this treatment at the same time restores strength and regularity to the heart’s action, and calms the nervous system, so as to allow of sweet and restorative sleep... The physicians of the Westminster

Hospital have had abundant opportunities of observing the effects in such circumstances of a very splendid old sherry, of which the late Duke of Northumberland presented a large quantity to the hospital; and for our own part we are convinced that the influence of such a liquor is something entirely distinct from that of its mere alcohol.

Other acute conditions, including delirium, cardiac exhaustion, catarrhal inflammations, influenza, acute neuroses, and neuralgia, were discussed at length, with recommended dosages of various unmedicated and medicated wines, drugs, and diet. Dr Anstie opposed any use of alcohol in tetanus, delirium tremens or “catarrhal inflammation of the stomach.” In chronic complaints, he favored burgundy for dyspepsia, port for “simple anemia,” and port wine and stout for anorexia, but doubted the advisability of any alcoholic beverage in cases of chronic mucous discharges. He acknowledged the contemporary medical view that “alcohol was murder in phthisis,” but expressed his belief that there were some cases in which very light wines, “free from acetous decomposition,” might be useful.

Arnold of Villonova from his book “Liber de vinis” of 1310, (Lucia Pages 104 & 105).

If wine is taken in right measure it suits every age, every time and every region. It is becoming to the old because it opposes their dryness. To the young it is a food, because the nature of wine is the same as that of young people. But to children it is also a food because it increases their natural heat. It is a medicine to them because it dries out the moisture they have drawn from their mother’s body. No physician

blames the use of wine by healthy people unless he blames the quantity or the admixture of water...Hence it comes that men experienced in the art of healing have chosen the wine and have written many chapters about it and have declared it to be a useful embodiment or combination of all things for common usage. It truly is not friendly to human nature.

It is a wine that is proper for sick old people, also for melancholics and phlegmatics, and it particularly makes women fat. It eases the chest, strengthens the stomach, adds substance to the liver and strengthens it. It warms the blood, opposes putrefaction, and removes nausea and mucosity of the stomach. It is also useful for coughing and asthma, and it naturally loosens the hardened bowels and astringes the loose bowels, such as in dysentery and similar conditions. It has the faculty of strengthening the retentive and expulsive function. It is good for short breath and for the cardiac disease...When it is used, ulcers cannot develop in the body. And whoever uses it steadily will never have any disease from evil humours, so God will.

**Avicenna from his book “Canon of Medicine”, which stated the following rules:-
(Lucia Pages 82, 83 and top of 84).**

800: White light wine is best for those who are in a heated state, for it does not cause headache...It may relieve headache when that is due to heat in the stomach.

802: Wine is beneficial for persons with a predominance of bilious humor, because it gets rid of the excess of this by provoking the urine...The better its aroma (bouquet) and taste, the more beneficial.

Wine is also very efficient in causing the products of digestion to become disseminated through the body.

Discussing old and new wines, he epitomized the views of Dioscorides:

806: As you know, old wine is like a medicine. It is only feebly nutritious. new wine clogs the liver and produces a hepatic “dysentery” by giving rise to much gas.

The best wine to take is that which is clear, white, tending to a red tinge, of good bouquet, and neither tart nor sweet in taste, neither old nor new.

Avicenna was firm in his proscription of wine for children:

735: Wine must not be allowed...because the injurious effect of wine – namely the generation of bilious humour, as is seen in toppers – readily influences the child. The advantage in wine is that it excites the secretion of urine,...and it moistens the joints. Neither of these effects is necessary at this age...To give wine to youths is like adding fire to a fire already prepared with matchwood.

For the autumnal years, a more sane and generous prescription was offered, with specific warnings referable to young and sweet wines:

860: The wine which is best for elderly persons is old, red, with warming effect, and diuretic. New and white sweet wine should be avoided, unless a bath is taken after a

meal at which such wine is taken, and unless there is thirst. In that case it is allowable to take white wine which is light without much body in it, thus taking the place of plain water. Elderly persons must shun sweet wines which are likely to prove oppilative (but wines prepared with honey may be allowed even in cases where gout is threatened...)

Young adults should take it [wine] in moderation. But elderly persons may take as much as they can tolerate. Wine is borne better in a cold country than in a hot one.

Rule 808 deals with the conditions under which alcohol is most rapidly absorbed into the bloodstream:

The wise person will avoid drinking wine when fasting or before the limbs have been refreshed in warm water, or after vigorous exercise.

Avicenna also wrote a knowledgeable dissertation on intoxication and its treatment, for which he was eminently qualified, since it is recorded that he imbibed nightly:

809: Some persons claim that it is an advantage to become intoxicated once or twice a month, for, they say, it allays the animal passions, inclines to repose, provokes the urine and sweat, and gets rid of effete matters...Frequent intoxication breaks down the constitution of the liver and brain, weakens the nerves, and tends to produce diseases of the nervous system, apoplexy, and sudden death.

His advice for over-eager imbibition was as sound then as it is today.

If called to a person who has drunk wine to excess, emesis should be produced as speedily as possible. Failing that he may drink a considerable quantity of water, with or without honey. When emesis has been procured, he should bathe in a full length bath. The he should be thoroughly rubbed with oil, and left to go to sleep.

Celsus from his book “De re medicina”, (Lucia Pages 52, 53, 54, 55 & 56).

Celsus discussed the relative medicinal values of wines from various viticultural regions of Italy, Sicily, and Greece. Concerning wines of different ages, he stated that “vinegar [sourced wine] and that wine which is a few years old, whether dry or rich, are intermediate in quality; and therefore neither of the two ought to be given to weak patients.” He classified sweet or salted wine and *mulsum* (must or wine to which honey or various aromatic substances were added) as having laxative effects. He attributed constipating effects to undiluted wine, harsh or resinated, to *mulsum* which had been heated, to *mustum defrutum* (new or unfermented wine which had been boiled down), and to *vinum passum* (raisin wine). Of various wines he wrote: *Vinum passum* was much in demand for invalids; *Mustum defrutum*, when boiled in leaden vessels, was used as an astringent; *Vinum siliatum*, a wine flavored with saxifrage, was usually drunk in the middle of the day; *Vinum posca*, an acidulous drink of sour wine and water, was the ordinary drink of the common people.

Celsus recounted in precise detail the effects of different wines on the digestive tract. Among those that “readily decompose inside” were sweet wine, *mulsum*, *mustum*

defrutum, and *vinum passum*. Harsh or resinated wine was listed among foods which “decompose the least within.” For stomach ailments he prescribed as follows:

But if anyone suffers from his stomach, he should read out loud, and after the reading take a walk, then exercise himself at handball and at drill or at anything else which brings the upper part of the body into play; on an empty stomach he should not drink water but hot wine; if he digests readily he should take two meals a day; drink light and dry wine, and after a meal drinks should preferably be cold.

Some precautions, however, were noted:

Nor must one absolutely trust those of our patients who when very unwell have conceived a longing for wine or cold water, and in backing up their desires, lay the blame on their perfectly innocent stomach. But those who digest slowly, and whose parts below the ribs on that account become inflated, or who on account of heat of some kind become thirsty at night, may drink before going to bed three or four cupfuls of wine through a fine reed. Also, to counter slow digestion, it is well to read aloud, next to take a walk, then to be either anointed or laved, taking care to drink wine cold, a large drink after dinner, but as I have said through a tube, ending all by drinking cold water.

For its tranquilizing effect in nervous indigestion, Celsus prescribed either full-bodied dry wine or *mulsum*:

It is never expedient to drink wine treated with sea-water, nor indeed thin or sweet wine, but that which is dry and fuller-bodied, and not too old. If one desires to use honeyed wine, it should be made from boiled honey...

In discussion of jaundice, he recorded that Asclepiades importuned his patients to drink salted water in order that they might be purged. As part of a dietetic regimen in this disease, Celsus prescribed salted Greek wine:

After purgation, for the first three days a moderate amount of food of the middle-class should be taken with salted Greek wine to drink in order to keep the bowels loose; then on the ensuing three days, food of the stronger class with some meat, keeping to water for drink; next there is a return to the middle class of food, but in such a way that he may be more satisfied therewith, and for drink an undiluted dry wine in place of the Greek; and this diet is varied so that sometimes acrid foods are put in, sometimes the salted wine is again given...

Celsus employed different types of wines in prescriptions for disorders of the eye. In the therapeutic regimen for ophthalmia, he stated:

There should be smeared over the eyeball, of saffron as much as can be taken up in three fingers, of myrrh in amount the size of a bean, of poppy-tears the size of a lentil: these are pounded up in raisin wine, and applied on a probe to the eyeball.

For proptosis he prescribed a salve of Indian nard, poppy-tears, saffron, and fresh rose leaves, mixed up in mild wine. For carbuncles on the outer surface of the eyelid:

...the most suitable poultice is one of linseed boiled in honeyed wine, or if that is not at hand, flour boiled in the same.

His prescription for what is currently referred to as a “black eye” reads:

...a blow from without at times so injures the eye that it is suffused with blood...In order to relieve inflammation, it is not unfitting to apply a poultice over the injured eye. The best salt from Ammon, or some other salt, is pounded, and oil gradually added until it is of the consistency of strigil scrapings. Then this is mixed with barley-meal which has been boiled in honey wine.

In treatment of the ear, *mulsum* and raisin wine were employed as antiseptics and as menstrua. A typical prescription as follows:

...for whereas lesions of the eyes keep the mischief to themselves, inflammations and pains in the ears sometimes even serve to drive the patient to madness and death. This makes it more desirable to apply treatment at the very beginning, that there may be no opening for the greater danger. ...Hot poultices...frequently changed, whether composed of fenugreek or linseed or other meal boiled in honey wine, and sponges also wrung out of hot water, applied at intervals, are appropriate...If severe inflammation entirely prevents sleep, there should be added to the poultice half its quantity of toasted and pounded poppy-head rind, and this should be boiled down with the rest in diluted raisin wine.

Maggots in the ear [!] were extracted by an ear scoop, and to prevent their breeding again, a concoction of hellebore and vinegar was used. The dead maggots were flushed out of the ear with a decoction of horehound and wine. Nasal and genital ulcerations were treated likewise.

For swollen but not ulcerated tonsils, Celsus prescribed “that root which they call sweet, crushed and boiled in raisin wine or honey wine,” adding directions to anoint the tonsils gently with boiled-down juice of sweet pomegranates, saffron, myrrh, shredded alum, mild wine, and honey. The mixture was to be boiled gently before application. A popular gargle consisted of warm fig and honey wine.

For toothache, he advised that “wine must be entirely cut off,” but he permitted an application of the bark of white poplar roots, boiled in diluted wine, to be used for the pain.

Although Celsus listed the recipes for mithridatium and other theriacs, he wrote of them:

Antidotes are seldom needed, but are at times important because they bring aid to the gravest cases. They are appropriately administered for bodily contusions, either from blows or in cases of a fall from a height, or for pain in the viscera, sides, fauces, or internal parts. But they are chiefly necessary against poisons introduced into our bodies through bites or food or drink.

Dioscorides from his book “De universa medicina” of 78 AD, (Lucia Pages 62, 63, 64, 65 & 66).

Those wines which are old, are hurters of ye nerves and of the rest of ye senses, yet are they pleasant to ye taste. Wherefore it is to be avoided by those who have any part weake within. Yet for the use of it in health, both a little is taken without hurt, & that diluted in water. But new wine is inflative, hard of digestion, breeding grievous dreams, ureticall. But that which is of a middle age doth avoid either of these evils, wherefore it is to be chosen in ye uses both of health & sickness...the sweet wine doth consist of gross parts & is hard to evaporate, very much puffing up of ye stomach & disturbing of ye belly & ye entrailes, like as the bladder & ye kidnies; but ye shart wine is more ureticall, & a causer both of headache and drunkenness. But ye unripe wine is most fitting for ye digesting of meats, & it is a stopper of ye belly & of other fluxes, but that which is mild doth less touch the sinewy parts, & it is less ureticall. But that made with sea-water is bad for ye stomach, causing thirst, hurting the sinnewes yet good for ye belly, unfitting for such as are late recovered of a sickness.

To a Lesbian wine called *omphakites oinos*, prepared from unripe, dried grapes, Dioscorides attributed the following qualities:

...it hath a faculty of binding, is good for ye stomach, & good for lustful women & ye squeamish-stomached. And it is thought also being supped up to help plagueie affections. But such wines as these are used after many years, for otherwise they are not potable.

For convalescents, he recommended pomace wine, the thin, weak wine made by adding water to the leftover pulp of grapes after the last-pressed wine is drawn off. Dioscorides and Pliny called it *dueterias oinos*, *lora*, *vinum operarium*, or *potimon*. Dioscorides specified its use “for such to whom we doubt to give wine, & yet are compelled to satisfy ye desire of ye sick, & for such as are recovered from sickness that held long.” Pliny also mentioned *faecatium*, a wine pressed from grape lees, and added quite correctly that none of these beverages keeps for more than a year.

Dioscorides praised *vinum passum* (raisin wine) and boiled-down wines as nourishing, beneficial in kidney and bladder ailments, and valuable as antidotes for poisons:

Passum which is made of ye sun-dried grape, or dried on the branches, & prest called Creticum, or Protopum, or Pramnum, and that of Must sodden, called Siron or Hepsama, that which is black called Melampsithion is thick, & much nourishing, but ye white is thinner, and that in ye midst hath also a midling faculty. But all are Binding, recalling ye pulse. Being good against all poisons, which kill with exulcerating, when drank with oil, & vomited up again: & against Meconium & Pharicum, & Toxicum & Hemlock & milk curdled in ye stomach, & against ye griefs of ye bladder and kidnies, being corroded & exulcerated: but they are windy, & bad for ye stomach. But that called Melampsithium is properly good for such as have a fluxing belly. But ye white is more mollifying of ye belly than ye other.

Like Celsus and Pliny, Dioscorides attributed special effects to *mulsum* (honeyed wine):

That mulsum is preferred which is made of old & hard wine, & good honey...the old is nutritive & that of a middle age, good for ye belly & ureticall. Being taken after meat it hurts, but being drank at ye beginning it fills, but after that it moves ye appetite.

To a *mulsum* called *melikraton*, he ascribed great value as a heart stimulant and as a fine remedy for the relief of bronchial irritation and cough:

Melicrat doth possess ye same force that Mulsum doth. But we use it sodden, for such as we wish to mollify ye belly, or procure vomiting, as for those that have drunk poison, giving it with oil. But we use that which is boiled for such as have feeble pulses, & for ye weak, and coughers, & ye Peripneumonicall & such as faint with sweating.

A salted honeyed wine, made of an old vintage and with less honey than in *mulsum*, was called *oinos melitites* and was advised in the treatment of long-continued fevers in those with weak stomachs. Dioscorides described it as gently laxative, diuretic and a purge for the stomach, and said it was administered to the “Arthriticall,” and the “Nephriticall,” and such as had “a weak head.”

Dioscorides listed numerous uses for *omphacium*, the juice of unripe grapes allowed to thicken in the sun. It was:

...good also for ye Tonsillae, ye uvula, for mouth ulcers, moist flaggy gums, mattery ears, with honey or Passum, but for Fistulas, and old ulcers, and ye Nomas, with Acetum. And it is given for a glister to ye dysentericall, & fluxing women. It is also a sight-quickener. It is good also for ye roughness & ye gnawings of ye corners of ye eyes. It is drank also for ye spitting of blood but lately come, & for that which came by a rupture. But you must use it very well diluted, & but a little of it neither, for it burns mightily.

The dried flowers of the wild grapevine (*Vitis sylvestris*), called *oenanthe*, made into a wine called *oinos oinanthinos* or into an ointment called *oinanthinon*, were prized by Dioscorides:

The virtue of it is binding, whence, being drank it is good for ye stomach & ureticall, stopping ye belly & spitting of blood. Being dried, & smeared on it is effectual for a queazie & sour stomach. Both ye green and ye dry with Acetum [vinegar] & Rosaceum [oil of roses] are a perfusion for ye headache, & it is a Cataplasme of bleeding wounds, keeping them from inflaming, & of beginning Aegilopae [a disease of the eyes], & of ye jaws in ye mouth & of ye Nomae [corroding sores] which are in ye Priuties [Middle English for “Privities”, genitals]...

He also attributed medicinal values to the leaves, tendrils, and stalks of grapevines:

The leaves & the tendrils of ye wine-bearing Vine, beaten small and laid on with Polenta [pearl barley], do assuage headaches & ye inflammation & burning of ye

stomach & ye leaves (do ye same) being laid on by themselves, they being cooling & binding; & further, ye juice of them being drank, doth help ye dysentericall & ye blood spitters, & ye stomachicall, & women that lust; & the tendrils being macerated in water, and drank, perform ye same things. But the teare of it being like to gum, thickening about the stumps, being drank with wine drives out ye stones (calculi). It heals also ye Lichenas, & Psoras, & Leprosies being anointed on, but you must first rub ye place with nitre. And being often smeared on with oil, it bares the hair, and especially ye moisture that sweats out from a green branch burning, which also being anointed on takes off ye Myrmeciae.

Dried grapes were also recommended by Dioscorides: Every grape, which is but new-gathered, disturbeth ye belly and puffeth up ye stomach, but that which hath hanged for some time doth partake but little of these qualities (because that much of ye moisture is dried up), it is good for ye stomach & a recaller of ye appetite & fit for such as are weak. ...But of ye Uva passa [grapes spread in the sun], ye white is ye more binding, and ye flesh of them being eaten is good for ye arteries [*arteria*: windpipe], and coughs, & ye kidnies, & ye bladder, & for ye dysentery being eaten by itself with the stones, as also being mixed with meal of Milium & of barley & an egg and fried with honey, and so taken...

Historians of medicine frequently quote Dioscorides as the first to mention the employment of madragora wine for surgical anesthesia and in the cauterization of wounds. Although some maintain that there was no use of anesthetics before the introduction of ether in 1846, since surgical patients in early years of the art were

merely tied down and operations done on them swiftly, Dioscorides had described mandragora and added:

And some do seeth the roots in wine to thirds, & straining it set it up. Using a Cyanthus of it for such as cannot sleep, or are grievously pained, & upon whom being cut, or cauterized they wish to make a not-feeling pain...but being too much drank it drives out ye life...

Galen, (Lucia Pages 69-71).

...it [wine] must be prohibited to those patients who are chilled considerably and are plethoric... Patients suffering from fever due to insomnia or due to an affection of the heart should be put on a humid and succulent regimen, after a bath. Particularly patients subject to insomnia should be given wine freely, unless there are headaches or pulsing in the temples... Also, prescribe wine for the choleric, the sad, or the dreamer; do not give to the irascible until after his passion has subsided.

And he specified light wines in intermittent fevers:

Before the coction of the disease prohibit wine completely; when coction has started give a light wine, diluted and in small quantity; increase the amount as the resolution of the disease approaches. The aliments which humidify and chill are all very useful in legitimate tertian fevers; the quantity of wine given must be that which the patient can digest conveniently...very old or naturally warm wines should be prohibited.

For continued fevers, he said:

The wine should be warm and light, as is the wine of Lesbos, in the “flux” of the abdomen; it should be thick, black, and acid in hemorrhages.

In cases of debility and swooning:

If lipothymia [fainting] occurs due to weakness of the stomach orifice, one should apply fortifying cataplasms over this region, those for instance containing dates, wine, *alphiton*, saffron...they should be dampened with medicines containing absinthe, olive oil...flowers of wild vines, and wine. If the stomach orifice is inflamed...and when this organ is weakened, one should give warm wine. If one cannot cause vomiting and relaxation of the stomach with olive oil... one should give to drink an infusion of the heads of absinthia in melikraton, then wine. In cases of fainting resulting from heat...you will revive the patient by sprinkling over him immediately cold water, fanning him, turning him from side to side and massaging the region of the stomach orifice...then you shall give him wine and food. In order to avert syncope it is wise to give food and drink...If you foresee serious troubles you can prevent them by giving wine, particularly wine in which one has put boiled *alica*....Those who become dangerously ill suddenly, to them you should give warm wine with a very small quantity of bread or warm *alica*.

In the discussion of fistulous abscesses, Galen states that:

...before applying the agglutinant I am in the habit of cleaning the sinus with wine alone, sometimes with honeyed wine...This wine should be neither sweet nor astringent.

Dr Franz Hübotter's collection of ancient Chinese remedies, (Lucia Pages 32 & 33).

Effective in heart attack with swelling of extremities, unpleasant coldness of the heart, mental confusion: A solution consisting of 12 herbs (plants) including such as *Angelica polymorpha*, zingiber, cinnamon, as well as ground oyster shells; all of the components are to be dissolved in warm wine; the patient is to drink this three times a day for 20 days.

To a pregnant woman who has bursting pains in the region of her waistline, the following should be given on an empty stomach: *Glycine soja*, previously roasted and boiled, steamed in a large cup of white wine.

In case of post-partum disturbances of the blood causing fainting and mental confusion so that persons cannot be recognized: The patient is to be pulled up into a sitting position by her hair. Put *Zizy phus vulgaris* on hot coals and when it glows throw it into strong vinegar, so that the steam will be inhaled by the patient and revive her. In addition, the following should be given: *Angelica polymorpha*,

Conioselinum inivittatum, heated *Nepeta japonica*, all to be boiled in water, mixed with a good wine and boy's urine. Excellent effect.

In order to promote lactation, take *Saponaria vaccaria*, *Liriope spicata*, and dragon's bones, in a cup of bouillon of pig's feet and a glass of wine. To be taken hot.

Maimorides from his treatise "De Regimine Sanitatis", (Lucia Pages 84 & 85).

Wine is nutritious: It is well known among physicians that the best of the nourishing foods is one that the Moslem religion forbids, i.e., wine. It contains much good and light nourishment. It is rapidly digested and helps to digest other foods. It also removes the superfluities from the pores of the flesh and excretes urine and perspiration. It has other virtues besides these and is very useful, as the physicians tell us. But this concerns something that we are not allowed to make (from the religious viewpoint), which makes talking of it superfluous and unnecessary, and therefore we will not mention the various kinds and how they could be used in the upkeep of health...

The benefits of wine are many if it is taken in the proper amount, as it keeps the body in a healthy condition and cures many illnesses. But the knowledge of its consumption is hidden from the masses. What they want is to get drunk and inebriety causes harm. The one who taught that intemperance is useful once a month is in error, because it causes only injury and abrogates the strength of the entire body, particularly of the brain. The small amount that is useful must be taken after the food leaves the stomach. Young children should not come close to it because it hurts them

and causes harm to their body and soul. Galen has already said: A child should abstain from it till the age of twenty-one. The older a man is, the more beneficial the wine is for him. Old people need it most.

PHARMACOPOEIAS

Pharmacopoeias first appeared in London in 1618, Amsterdam in 1636, Paris in 1693, Spain 1651, Brussels in 1671, Russia in 1778 and the United States of America in 1820. Many formulas for wine-based medicines were included in the Pharmacopoeias including 170 wines in the 1835 edition of the Pharmacopoeia Universalis of Heidelberg.

Some examples:

From Pharmacopoeia Officinalis and Extemporanea or a Compleat English Dispensatory of 1741 – Vinum Millepedum, (Lucia Page 144).

Vinum Millepedum (Hog-Lice Wine). – Take hog-lice, half a pound, put them alive into two pounds of white port wine, and after some days' infusion strain and press out very hard; then put in saffron two drachms, salt of steel one drachm, and salt of amber two scruples, and after three or four days strain and filter for use. This is an admirable medicine against the jaundice, dropsy or any cachectic habit. It greatly deterges all the viscera, and throws off a great deal of superfluous humours by urine. It may be given twice a day, two ounces at a time.

From Pharmacopoeia of the United States of 1820, (Lucia Pages 145-146).

Vinum Ferri (Wine of Iron). Take of Iron Wire cut in pieces, four ounces. wine, four pints, Sprinkle the wire with two pints of the wine, and expose it to the air until it be

covered with rust; then add the rest of the wine; macerate for ten days, with occasional agitation, and filter.

Vinum Ipecacuanhae (Wine of Ipecac). Take of Ipecacuahna bruised, two ounces. Wine, two pints. Macerate for ten days, and strain.

Vinum Opii (Wine of Opium, called Sydenham's Laudanum). Take of opium, two ounces; Cinnamon, bruised; Cloves, bruised, each one drachm. Wine, one pint. Macerate for ten days, and strain.

Vinum Tabaci (Wine of Tobacco). Take of tobacco, one ounce, Wine, one pint. Macerate for ten days, and filter.

Pliny the Elder from his book "Natural History", (Lucia Pages 58-61).

Like Celsus, whom he occasionally quoted, Pliny ascribed special virtues to *mulsum* (honeyed wine). He said the best was that made with old wine, since honey became incorporated with it more readily than with new or sweet wines, "the mixture of two sweet liquids being in general not attended with good results." When made with astringent wine, or when the honey was boiled, the mulsum did "not clog the stomach." The kind made with boiled honey produced less flatulency, an "inconvenience generally incidental to this beverage." It acted also "as a stimulant upon a failing appetite," and when "taken cold it relaxes the bowels, but used warm it acts astringently." Pliny quoted Varro as saying that jaundice has the name *Regius morbus*, because its cure is effected with honeyed wine. Pliny climaxed his discussion on the virtues of *mulsum* by relating the story of Pollio Romilius, who had

lived beyond his hundredth birthday. When asked by his host, Emperor Augustus, how he had retained such vigor of mind and body, Pollio replied: "Honeyed wine within, oil without."

Detailed descriptions occur in Pliny concerning the dilution of wine with water. As to the quantity of water, he said:

...that depends entirely upon the strength of the wine; it is generally thought, however, that the best proportions are one cyathus of wine and two of water. If, however, there is a derangement of the stomach, and if the food does not pass downward, the wine must be given in a larger proportion.

He advised water to counteract inebriation:

When drinking wine, it is a very good plan to take a draught of water every now and then; and to take one long draught of it at the last, cold water taken internally having the effect of instantaneously dispelling inebriation.

The fine wines of the ancients, and especially those recommended for medicinal purposes, were concentrated and often required dilution to be palatable. Pliny records that black Maronean wine from the coast of Thrace was sometimes diluted in proportions of one part of wine to eighty of water.

Pliny ascribed curative virtues to salt taken in wine:

Mixed with wine, it [salt] is a gentle aperient to the bowels, and, taken in a similar manner, it acts as an expellant of all kinds of intestinal worms.

He praised a salted medicinal wine named *bion*, which was “administered for its curative qualities in several maladies.” It was made from grapes picked before they were quite ripe, then spread out to dry in the hot sun, turned three times daily for three days, and pressed on the fourth day. The juice was placed in casks and left to age in the sun.

Both Pliny and Celsus referred to salt beaten up in wine and honey with meal as a remedy for gout, but their references to gout were not limited to the condition so named today; rather it connoted any pain in the joints of the feet or hands.

Pliny differentiated among many kinds of salt recommended for medicinal uses, and praised especially the salt of Tarentum and that collected from sea foam. He also wrote of a “sea-seasoned” wine made “by placing vessels full of must in the sea, a method which quickly imparts to the wine all the qualities of old age.”

As a wash, he advocated rinsing the mouth with wine flavored with anise and bitter almonds:

...it has the effect...of sweetening the breath, and removing all bad odours from the mouth, if chewed in the morning with smyrnion and a little honey, the mouth then being rinsed with wine.

Pliny had great faith in a wide assortment of herbs and spices administered in various wines. To catmint, which he called “nep,” he attributed the power to promote menstrual discharge and to frighten away serpents. Furthermore, he recommended the juice of catmint or a decoction of its root, mixed with myrtle seed and warm raisin wine, as a gargle for quinsy.

He wrote that oil of the berries of black myrtle (*Myrtus communis L.*) make wine

...possess the property of never inebriating...This wine, used when old, acts astringently upon the stomach and bowels, cures griping pains in those regions, and dispels nausea.

Saffron in wine, he said, was used to relieve itching sensations and also as a diuretic. When applied with egg, it dispersed all sorts of inflammation, particularly of the eye. “Chaplets, too, [were] made of saffron, and worn on the head,” because they were supposed to dispel the effects of wine. One kind of wild marjoram (*O. onites L.*), when taken in white wine, was described as good for stings of spiders and scorpions; and when “applied with vinegar and oil, in wool,” it was a “cure for sprains and bruises.” Garden thyme boiled in wine was efficacious for the bites of venomous serpents and certain marine animals, and when mixed with wine and applied externally was a sovereign remedy for sciatica.

Bruised leaves of garden rue and wild rue in wine were recommended by Pliny for bites of scorpions, spiders, bees, hornets, wasps, and even of rabid dogs; and, with hyssop, for “gripings of the stomach,” arresting internal hemorrhage, nose-bleed and earache, and also as a mouth wash.

Trotula, (Lucia Pages 95-96).

We help a disease of children which is a very severe cough by taking hyssop a wild thyme cooked in wine and giving it to them to drink, or we mix grains of juniper with wine for a drink.

The recipe for an ointment to be used for burned or chapped areas makes artful use of the anesthetic principles of aromatic ethers:

Take an apply, Armenian *clod*, mastic, *olibanum*, hot wine, wax and *sepum*...mix these together...then we strain through a cloth. It should be directed that after one has been anointed with this ointment, the burned area should be covered with a leaf of ivy cooked in vinegar or wine...This is a good remedy!

For foulness of breath during pregnancy:

...owing to a fault of the stomach, let tops of myrtle be grated and cooked in wine until reduced to one half. Let this wine be drunk on an empty stomach.

7.3 PHARMACOPOEIA WINE PRESCRIPTIONS

PHARMACOPŒIA

COMPILED FOR USE IN

The Melbourne Hospital.

FIFTH EDITION.

1887.

MELBOURNE :
STILLWELL AND CO., PRINTERS,
COLLINS STREET EAST.

VINA.

<i>Vinum Aloes.</i>	Dose, 1 to 2 drs.
— <i>Antimoniale.</i>	„ 5 to 60 mns.
— <i>Colchici.</i>	„ 10 to 30 „
— <i>Ferri.</i>	„ 1 to 4 drs.
— <i>Uitratis.</i>	„ 1 to 4 „
— <i>Ipecacuanhæ.</i>	„ 5 to 40 mns.
— <i>Opii (without spices.)</i>	Dose, 10 to 40 mns.
— <i>Quinince.</i>	Dose, $\frac{1}{2}$ to 1 oz.

FORMULÆ PRO LIBERIS.

MISTURÆ.

MISTURA ACIDI HYDROCHLORICI cum
OPIO.

R	Acidi Hydrochlorici Diluti,	<i>m</i> ij.
	Tincturæ Opii,	<i>m</i> $\frac{1}{6}$.
	Syrupi Aurantii,	<i>m</i> x.
	Aquæ,	ad 3 j.
	Misce.	

MISTURA CARMINATIVA.

R	Magnesii Carbonatis,	gr. ij.
	Olei Cajaputi,	<i>m</i> $\frac{1}{4}$.
	Sp. Ammoniac Fœtidus,	<i>m</i> ij.
	Mucilaginis Tragacanthæ,	<i>m</i> xv.
	Aquæ Carui,	ad 3 j.
	Misce.	

MISTURA CINCIONÆ.

R	Extracti Cinchonæ Liquidi,	<i>m</i> ij.
	Tincturæ Cinchonæ Compositæ,	<i>m</i> x.
	Glycerini,	<i>m</i> v.
	Aquæ Carui,	ad 3 j.
	Misce.	

VACCINA.

BACILLARY EMULSION.

HUMAN B.E.

BOVINE P.B.E.

Dosage.

In terms of a Milligramme of dried tubercle bacilli
(5 Mg. being contained in 1 Ml of fluid)

Dosage and usage same as T.R. and P.T.R.

VINA.

		Metric.	Imperial.
<i>Vin: Antimon:</i>	}	0.6-1.8 Ml	℥ x-xxx.
		emetic 8-16 Ml	℥ ij-iv.
- <i>Aurant:</i>	}	0.6-1.8 Ml	℥ x-xxx.
- <i>Colch:</i>		4-16 Ml	℥ j-iv.
- <i>Ferri</i>	}	4-16 Ml	℥ j-iv.
- <i>Cil:</i>		0.6-1.8 Ml	℥ x-xxx.
- <i>Ipecac:</i>	}	(expectorant)	℥ iv-vi.
		16-20 Ml	(emetic)
- <i>Quin:</i>	}	16-30 Ml	℥ ss-℥ j.
- <i>Xeric:</i>			

PHARMACOPŒIA

Compiled for Use in

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Latrobe Street

MATERIA MEDICA
PHARMACY, PHARMACOLOGY
AND
THERAPEUTICS

BY

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SEVENTEENTH EDITION



LONDON
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1920

either with a fruit basis, a rose basis, a simple basis, or a tolu basis.

Fruit basis.—Take 500 times the quantity of the drug ordered for one lozenge. Mix it with 20 grms. of refined sugar and 6.5 grms. of tragacanth. Make the mixture into a paste with sufficient of the black currant paste of commerce to produce 650 grms. Divide into 500 lozenges and dry in hot air chamber; *e.g.* Troch. Acidi Benzoici, Troch. Catechu.

Rose basis.—These lozenges are made in the same way, using the simple basis, except that they are flavoured with oil of rose instead of black currant; *e.g.* Troch. Potassii Chloratis.

Simple basis.—These lozenges are made in the same way except that neither rose water nor black currant is used; the basis is gum acacia; *e.g.* Troch. Ferri Redacti, Troch. Santonini.

Tolu basis.—These lozenges are made in the same way as the simple except that Tincture of Tolu is added; *e.g.* Troch. Morphinae, Troch. Acidi Tannici.

Troch. Sulphuris has a special mode of preparation.

Unguenta.—Ointments are semi-solid preparations consisting of a fatty substance mixed with an active drug. They are spread over the skin, or may be rubbed into it. They are only intended for external use. The basis is either lard, olive oil, wax, spermaceti, paraffin, or hydrous wool fat. Benzoated lard is often used to prevent decomposition. When it is required that the active ingredient should be absorbed, lard, which melts at about the temperature of the body, or hydrous wool fat, is the best basis; when the ointment is required for sores paraffin is a good basis, as it only softens a little at the temperature of the body.

In hot countries if the ointment would otherwise be too soft, the basis may be replaced by benzoated lard, prepared suet, yellow beeswax or white beeswax.

Vina.—Wines are weak tinctures, the drug being extracted with sherry in all except Vinum Ferri Citratis and Vinum Quinine, in which orange wine is used,

and Vinum Aurantii, which is merely a fermented saccharine solution to which orange peel is added.

The dose of Vin. Colchici is 10 to 30m (6 to 18 decimils), of Vin. Quinine $\frac{1}{4}$ to 1 fl. oz. (15 to 30 mils).

With V. Antimonialis and V. Ipecacuanha the dose depends upon the purpose for which the drug is used.

The dose of the others is 1 to 4 fl. dr. (4 to 16 mils).

V. Ipecacuanha is standardized (see p. 8).

The following NON-PHARMACOPŒIAL PREPARATIONS are used:

Abstracta.—Powdered extracts double the strength of the crude drug. They are official in the United States Pharmacopœia.

Bougies.—Solid cylinders impregnated with various drugs, and used for introduction into the ear (called aurinaria), nose (called boginaria), or urethra. They are made either of gelatin (to be dipped in warm water before use) or oil of theobroma (to be dipped in oil before use). Those for the urethra are made in six sizes, varying from $\frac{1}{4}$ to $\frac{1}{16}$ inch in diameter.

Cachets, made of wafer paper, consist of two watch-glass-shaped halves. The drugs are enclosed between them, and they adhere when moistened. The cachet is slightly moistened, put in the back of the mouth, and quickly washed down with a little water. This is an excellent way of giving drugs which are either nauseous or difficult of solution or suspension. Cachets are commonly used for antipyrin; bismuth salts; compound ipecacuanha powder; guaiacol carbonate; phenacetin; quinine salts; aspirin, salol, and other salicylates; sulphonal, trional, and veronal.

Capules of gelatin are used in the same way as cachets. They are very useful for nauseous oils.

Cataplasmata.—Soft, pasty external applications made with boiling water having linseed meal as a basis and applied warm (see Linseed). An ice poultice consists of crushed ice.

Cerata are ointments containing wax. They are official in the United States Pharmacopœia.

Cigarettes.—The drug replaces the tobacco of an ordinary cigarette.

Collunaria.—Fluids used as nasal douches.

Collyria.—Fluids used as eye washes.

Cremona.—Creams are preparations having glycerin, vaseline, or some similar substance as a basis, and used for external application.

2. Spiritus Rectificatus.—Rectified Spirit. Ethyl Hydroxide, 90 per cent. by volume; Water, 10 per cent.

SOURCE.—Obtained by distillation of fermented saccharine liquids.

CHARACTERS AND TESTS.—Colourless, transparent, inflammable liquid with a burning taste. Sp. gr. 0.8337. No residue when evaporated. Clear when mixed with water (absence of oils and resins). No unpleasant smell when evaporated from filter paper (absence of fusel oil and allied bodies); and it must respond to other tests given in the Pharmacopœia.

Alcohol (90 per cent.) is only slightly stronger than rectified spirit, B. P. 1885, containing 1.35 per cent. more alcohol. On mixing alcohol and water, contraction of volume and rise of temperature occur. When such a mixture is prescribed, the cooled liquid should be employed.

The four official liquids obtained by diluting alcohol (90 per cent.) with distilled water are:—

3. Alcohol (70 per cent. by volume) = 1000 millilitres alcohol (90 per cent.) + 310.5 millilitres distilled water. Sp. gr. 0.8899.

4. Alcohol (60 per cent. by volume) = 1000 millilitres alcohol (90 per cent.) + 536.5 millilitres distilled water. Sp. gr. 0.9134.

5. Alcohol (45 per cent. by volume) = 1000 millilitres alcohol (90 per cent.) + 1053.4 millilitres distilled water. Sp. gr. 0.9435.

6. Alcohol (20 per cent. by volume) = 1000 millilitres alcohol (90 per cent.) + 3558.0 millilitres distilled water. Sp. gr. 0.9760.

7. Vinum Xericum.—Sherry.

CHARACTERS.—A Spanish wine. Pale yellowish-brown colour. Contains not less than 16 per cent. by volume of ethylic alcohol, with oils, colouring matters, &c., and water. Used to make all Vina except the two made with orange wine.

8. Vinum Aurantii.—Orange Wine.

SOURCE.—Made by fermentation of a saccharine solution to which the fresh peel of bitter orange is added.

CHARACTERS.—Contains from 15 to 17 per cent. by volume of ethylic alcohol. Used to make Vinum Ferri Citratis and Vinum Quinina.

Amount of Ethylic Alcohol by Volume in various important Substances.

	contains	per cent.
Alcohol Absolutum . . .	99	"
Alcohol (U.S.P.) . . .	94	"
Spiritus Rectificatus . . .	90	"
Alcohol Dilutum (U.S.P.) . . .	64.5	"
Whisky . . .	51 to 59	"
Rum, Gin, Strong Liqueurs . . .	51 to 59	"
Spiritus Tenuior (Proof Spirit) * . . .	57.09	"
Spiritus Vini Gallici . . .	43 to 57	"
Port . . .	20 to 30	"
Vinum Album Fortius (U.S.P.) . . .	23 to 29	"
Sherry and Madeira . . .	16 to 22	"
Vinum Album (U.S.P.) . . .	12 to 14	"
Champagne . . .	10 to 13	"
Vinum Aurantii . . .	10 to 12	"
Burgundy . . .	9 to 12	"
Hoek . . .	9 to 12	"
Claret . . .	8 to 12	"
Cider . . .	5 to 9	"
Strong Ale or Stout . . .	5 to 9	"
Beer and Porter . . .	2 to 5	"
Koumiss . . .	1 to 3	"

ACTION.

External.—Alcohol is an antiseptic, preventing the formation of and killing putrefactive bacteria. If applied to the skin, alcohol quickly evaporates. It therefore cools the skin, which consequently becomes pale from the contraction of the small vessels; owing to this less sweat is secreted. Alcohol is thus refrigerant, astringent, and anhidrotic. But if

* Proof Spirit is defined by Act of Parliament as "being such as shall, at a temperature of 51° F., weigh exactly $\frac{13}{15}$ part of an equal measure of distilled water." Weaker spirits are termed "under proof," and stronger spirits "over proof." Thus 25 degrees over proof means a mixture of alcohol and water in such proportion that 100 volumes of this mixture, when diluted with water to make the mixture proof spirit, yields 125 volumes of proof spirit; and 25 degrees under proof means a mixture of proof spirit and water containing in 100 volumes 75 of proof spirit and 25 of water.

PRICE—THREE GUINEAS
(For the Two Volumes).

THE ILLUSTRATED
AUSTRALIAN MEDICAL
GUIDE

(With 130 Drawings, Several Coloured Plates, and a Mannequin—*together with a Profusely Pictured, Private and Separate, Section for Women*).

BY

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Illustrated by D. H. SOUTER.

Late President of the Society of Artists of New South Wales.

IN TWO VOLUMES—VOL. II.

"Every forward step made by honest work, be it great, or be it small, be it the assertion and establishment of an important principle or but an improvement upon any of our accustomed methods, may possibly be the means of bringing welfare and happiness to an individual, a community, a country, or an era."
—*Sir William Stokes.*

1903.

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CHOICE AND SPECIALLY SELECTED
RECIPES,
TOGETHER WITH ACCESSORY INFORMATION,
FOR THE SICK-ROOM,
AND, ALSO, FOR CONVALESCENTS AND INVALIDS—AS
WELL AS FOR THE FEEDING OF INFANTS,
AND FOR THE TREATMENT OF THEIR
DIFFERENT MALADIES.

The great prominence, which is now accorded to all matters connected with diet and food, is one of the most striking features of modern medicine. Judging from the course and progress of events, also, there is every reason for believing that these subjects will receive even more attention in the future.

In all forms of acute disease, the administration of suitable nourishment is of the utmost importance. A patient, after coming through an exhausting illness, is, likewise, in need of the most restorative articles, in order to regain strength and vitality. During the course of a chronic malady, again, a knowledge of what is appropriate in the way of alimentation is indispensable to successful treatment. For these reasons, therefore, all that pertains to diet and food for the sick-room, and, also, for convalescents and invalids—as well as for the feeding of infants, and for the treatment of their different maladies—is made the subject of special consideration in this work.

A SPECIALLY IMPORTANT NOTIFICATION.

For the sake of accuracy, graduated measures must always be employed. Teaspoons, dessertspoons, and tablespoons vary to such an extent that no two—considered to be of the same size—correspond. The information on Measures and Weights—including Measuring and Weighing—which will be found in connection with the section on The Australian Family Medicine Chest, should also be consulted, as it contains full instructions in the matter.

shaking energetically continued—till everything is thoroughly blended together.

Now, there are about 60 drops in a teaspoonful—of any liquid—when apportioned by means of a measuring glass. In the foregoing recipe, there is 1 part of brandy to 5 of water—that is, *one-sixth* of the whole is brandy. So that in one teaspoonful of this albumen water (containing 60 drops), there will be 10 drops of brandy. Similarly, also, half a teaspoonful will contain 5 drops. This saves the trouble of counting out the drops of brandy—always a very difficult, tedious, and uncertain proceeding. For, instead of having to count out 5 drops of brandy, or 10 drops of brandy, all that is necessary is to give half a teaspoonful, or a teaspoonful, of this albumen water.

Albumen water is often of the greatest possible service in cases such as these:—In *acute diarrhoea*, it is usually most valuable, not only in stopping the purging, but also in sustaining the infant as well. In some forms of *indigestion*, albumen water succeeds, when other treatment fails, particularly if the baby has become exhausted or prostrated. Also in *vomiting*, when the symptoms are increasing, and do not readily yield to other remedies, it is most satisfactory. Again, in the more dreaded *vomiting—associated with purging*, albumen water is generally one of the first things to be employed. In all these maladies, the doses used should vary in accordance with the severity of the disease. Half a teaspoonful of the albumen water, every hour, is, comparatively speaking, a small dose. But it is frequently necessary to give one teaspoonful, every hour—or even, in desperate cases, every half hour.

ALCOHOLIC STIMULANTS.

There is no occasion here to make an explanation with regard to alcohol, as it is dealt with in the article on Alcohol. The effects of the abuse of alcoholic stimulants are also described under the headings of Alcoholism, Acute, and Alcoholism, Chronic. In the section on Uric Acid, there will, likewise, be found an exposition of my views as to the suitability of Australian wine as an alcoholic beverage for everyday use in Australia. It is necessary to draw attention to these matters, as a distinction must be made between:—

1. The Administration of Alcoholic Stimulants in Acute or Chronic Maladies.
2. The Abuse of Alcoholic Stimulants—whether in the form of a "Drinking Bout" (Alcoholism, Acute) or as "Chronic Tippling" (Alcoholism, Chronic).
3. The Use of Alcoholic Stimulants as a Daily Beverage.

In what follows, I shall consider the subject entirely from the first standpoint—namely, The Administration of Alcohol in Acute or Chronic Maladies—*although I shall add a word or two, by way of warning.*

ALCOHOL IN ACUTE DISEASES.

Although opinion may be divided as to the use of alcohol in health, there is not the same difference with regard to its utility in acute diseases. Its opponents, however, do not admit the advantages of stimulants, even when employed for this purpose. But it may be pointed out that medical practitioners, who have the greatest opportunity of observing and testing the value of alcohol in cases of severe illness, almost without exception, acknowledge its necessity in such conditions. It is true that a small minority in the medical profession are opposed to the administration of alcohol, even in desperate cases. But, speaking generally, it may safely be affirmed that overwhelming numbers are convinced of its efficacy. Any one who has watched the effect of alcohol upon acute disease, when the vital powers are fast diminishing, or when the sufferer is in danger of sinking from exhaustion, cannot but admit its power. It stands alone in this respect; and no substitute is ever likely to take its place in acting upon the circulation and the nervous system. When the heart's action threatens to fail, as so often occurs during the course of any acute or debilitating disease, then alcohol is simply salvation.

In no case is it more strikingly potent than in such an instance as the following:—The patient is stricken with fever or other critical illness, his tongue is dry and almost black; his lips, teeth, and gums are covered with incrustations; there is low muttering delirium; he has sunk down in the bed, lying helplessly on his back; the pulse can hardly be felt; the first sound of the heart has almost vanished; the breathing is shallow and fitful; and there is nervous tremulousness of the whole body. The flame of existence is flickering, indeed. In such a case, stimulants must be administered with a free hand, perhaps as much as a teaspoonful every hour, or even oftener. As a rule, improvement begins, a little slowly at first, probably, then more and more rapidly, till convalescence is reached—and a life is saved. Recovery is here unmistakably dependent upon the alcohol alone, and upon nothing else.

RULES FOR GIVING ALCOHOL IN ACUTE DISEASES.

In the old days, disease in general was looked upon as an acute inflammatory process, and, as such, to be treated by lowering measures. Hence the practice of blood-letting, which, being used indiscriminately, led, in many instances, to unfortunate results. It

was, perhaps, chiefly owing to the teaching of Dr. Robert James Graves, of Dublin, that there has been such a recognition of the power of alcohol, and the value of nourishment, in the treatment of diseases—which tend to terminate life by exhaustion. It is said of him, that when asked what epitaph would please him best, he replied that he would prefer the words:—"He fed Fevers." It was Dr. Graves who did so much to show that many feverish conditions were those of debility, and required supporting treatment, not depressing remedies. But, as is usually the case with reaction, the pendulum swung violently to the other extreme, and each and every patient, even with simple feverishness, was plied with stimulants and overfed. Physicians, however, now use alcohol in all diseases with much more scientific accuracy and circumspection than they did at first. Briefly, it may be said that the employment of stimulants depends upon the state of the circulation, the range of temperature, and the condition of the nervous system.

The following is a summary of the symptoms, which show when alcohol is doing good—and when it is doing harm—in the treatment of acute diseases. The rules (and contraindications) were endorsed by Dr. Graves himself; and, as Professor Sydney Ringer observes, they will receive the support of all practical men:—

1. If the tongue become more dry and baked, alcoholic stimulants generally do harm; if it become moist, they do good.
2. If the pulse become quicker, they do harm; if it become slower, they do good.
3. If the skin become hot and parched, they do harm; if it become more comfortably moist, they do good.
4. If the breathing become more hurried, they do harm; if it become more and more tranquil, they do good.
5. These excellent rules, says Professor Ringer, might be supplemented as follows:—Alcohol does good, when it produces sleep and quells delirium.

ALCOHOL IN CHRONIC DISEASES.

The symptoms, together with the condition of the patient, which guide us in the use of alcohol in acute diseases, are more or less self-evident. But it is when we come to deal with chronic disorders that a little difficulty may be experienced. Yet, even in such maladies, if we will only be guided by the necessities of the case, we shall not go very far wrong. For it may be said that, almost without exception, all diseases of a wasting nature will require alcohol. The name

of consumption, at once, naturally suggests itself to the mind when wasting disease is mentioned. In all the other chronic ailments—which are considered to be debilitating, exhausting, or weakening—stimulants will also be necessary. In true diabetes, one of the most formidable of all maladies, they will almost certainly be needed. In many cases of heart disease, likewise, alcohol is simply indispensable, particularly in those distressing attacks when the heart's action is embarrassed or threatens to fail. In chronic bronchitis and other affections of the chest, especially in aged people, stimulants are absolutely essential. Many other maladies might be mentioned, in which stimulants are required; for example, in chronic disorders of the stomach or bowels. Those I have cited, however, will be amply sufficient for the purposes of illustration.

AN EARNEST WARNING.

Having said so much about the value of alcohol, when it is properly and scientifically used, let me now refer to those occasions on which it must be avoided, if possible. As it is mentioned, when dealing with Brandy, in some forms of infantile diseases, alcohol is simply priceless. But it is during the period of childhood, that more careful judgment must be exercised. Of course, in acute diseases, at this time of life, stimulants are just as necessary to pull a little patient through as they are in similar cases in adults. But it is when we come to children, who are, perhaps, debilitated, and require building up, that so much discretion is required with regard to alcohol. Those who come of a nervous stock—neurotic children, in fact—should never be allowed a stimulant, as a matter of routine, unless it be absolutely necessary. To order it for such children, or, indeed, for any child (except, of course, during an acute illness), is a proceeding which requires great caution, and even greater judgment.

Again, every medical man engaged in the active exercise of his professional duties, is undoubtedly conscious of a practice, which must be utterly condemned. This is the pernicious habit of giving young girls a little schnapps, or gin, or other stimulant, on particular occasions. Those who are acquainted with the great changes in the organism, which accompany the entrance into womanhood, are only too well aware of the demoralizing danger which attends the custom of administering alcohol for the purpose of assisting nature. That many a woman has learnt to fly to stimulants in this way, must be the experience of the greater number of physicians. There should be no dabbling with dangerous weapons in such cases. The medical practitioner is the one whose opinion should be sought. For mothers to neglect their duty in this respect, and continue the administration of alcohol, is worse than a blunder—it is a crime.

ON SWEARING OFF.

Quite a large amount of interesting information might be brought together in connection with the action of alcohol upon different individuals. But, as it is, I shall have the opportunity of referring only to a few particulars. As the old saying has it, what is one man's meat is another man's poison. There are certain individuals upon whom the smallest amount of alcohol has a distinctly pernicious effect. It is said of such a person that liquor gets into his head very quickly; or that it acts upon him injuriously, in some other way. This is well shown in the passage of Swift to Pope:—"The least transgression of yours, if it be only two bits and a sup more than your stint, is a great debauch, for which you will certainly pay more than those sots who are carried dead drunk to bed." Those who have this idiosyncrasy with regard to alcohol will require to be doubly careful in using it. It will be well for them to recollect that they must take much less than those who are not so easily affected by it. What I wish to make especially prominent is the fact, that if alcohol has a markedly deleterious effect upon any particular individual, he will have to be extremely circumspect with regard to it. It is no use attempting to fight against such a decided "thou shalt not." Let those who will accept the salutary warning—and benefit by its intended lesson.

No one has a better opportunity than a physician of gaining a knowledge of the reason which led a person to voluntarily give up alcohol. For my own part, I have always taken a great interest in this very matter, and times out of number, when the information has been forthcoming, I have invariably asked what were the circumstances under which stimulants were abandoned? Almost without exception, I have been told that the determination to do so was suddenly made—and suddenly acted upon. It is true that, in many instances, the resolve to give up alcohol had been pondered over for some time previously. But once action was decided upon, there was no hesitation. This was the case in nearly every instance, whether it occurred in the humbler walks of life, or in a somewhat higher station. But, whether those who did so were poor, or whether they were better off, they left off alcohol suddenly. The discontinuation may have been precipitated by some conscious act of folly, by some discovery of threatened, dread disease, or by some other deterrent, but it was sharp, short, and sudden. It was a break with alcohol, as we say in medicine, by a crisis, not by a lysis—by an abrupt departure, not by a lingering farewell.

This result of practical experience, curiously enough, is sustained by the recommendation which Dr. T. King Chambers makes in his work on Diet. In advising neurotic subjects to give up stimulants

altogether, he says:—"The really easiest way of breaking off the habit of yielding to the perverted sensation, which so insidiously cries for alcohol, is immediately and altogether to relinquish it. Terrible, sometimes, is the struggle, yet it is a bracing and ennobling conflict; whereas, the long-continued daily annoyance of giving it up; little by little, is, on the whole, quite as painful, and is often enfeebling to the mind. Moreover, courage is likelier to fail in a month, than in a day."

It must never be forgotten that, with some people, total abstinence is altogether more easy to carry out than moderation. As Macaulay has remarked of Johnson, they can "practise abstinence, but not temperance." It is related of the great lexicographer, in question, that his knowledge of physiology and medicine kept him from quackery. After middle life, his observations upon his health led him to abstain entirely from wine. The air of dignified patience with which he passed the bottle, which was often pressed upon him, has afforded us a picture of his honest determination to keep to his resolution. Coleridge is another instance of one possessed of a powerful intellect, who triumphed in a similar respect. Many others—of the *Dii majores*—might be adduced, as examples of those who repressed their inclinations and conquered their desires. But I think it will be found that both with them, and with all lesser lights, the controlling resolution was somewhat suddenly taken, and rigidly adhered to.

ALMOND DRINK.

A very useful and agreeable drink, which will be found soothing in *colds on the chest, bronchitis, and inflammation of the lungs*, may be quickly made by rubbing up one ounce of "compound powder of almonds" with half a pint of warm water. This compound almond powder can easily be obtained from any Chemist.

B

BAKED FLOUR.

Entire wheaten flour, such as Chapman's or other well-known brands is, in many respects superior, for nursery use, to ordinary flour. This entire flour contains, in addition, the pollard, or outer part of the grain of wheat, in a finely-ground condition. It is particularly rich, therefore, in phosphates, and especially in "cerealium"—a peculiar body, which changes starchy matter into sugar, or, rather, dextrine. The ordinary, finely-dressed white or baker's flour, on the other hand, has less nitrogen and more starch in its composition.

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tions may lead to the individual becoming self-centred and neurotic.

In the other groups, however, treatment may be urgently needed, for it must be remembered that albuminuria is only a sign of a disease and not a disease in itself.

Tests for Albumin in Urine. The urine should be clear and transparent, and must be filtered if necessary.

Test 1.—Into a test tube put about a tablespoonful of the urine. Tilt the tube and allow some strong nitric acid to run slowly down the side of the tube. Two layers will be formed, of heavy acid below and lighter urine above. If after standing for five minutes a definite white cloud is present at the junction of the liquids, then albuminuria is present.

Test 2.—Nearly fill a test tube with

urine. Then, holding the test tube at the bottom, tilt it, and hold the upper inch of the tube over a spirit lamp and allow to boil. If a white cloud appears in the heated part, which does not disappear when a drop or two of dilute acetic acid is added, then albuminuria is present. Phosphates and carbonates also produce a cloud which disappears if acid be added.

Test 3. A saturated solution in distilled water of salicylsulphonic acid is the reagent now most generally used, and is extremely delicate. A few drops of this solution are added to a small quantity of the urine in a test tube. A normal urine remains clear, but the presence of albuminuria is shown by a white precipitate, or by a faint haze only if the amount of albumin is small.

See Bright's Disease; Kidney; Urine.

ALCOHOL

ALCOHOL: ITS USE IN MEDICINE

LATEST SCIENTIFIC LIGHT ON AN OLD PROBLEM

We are here concerned primarily with the characteristics of alcohol in its different forms, its physiological effects and the conditions of both health and disease in which its use may be helpful or prejudicial. Supplementary information is given under the headings Alcoholism; Beer; Spirits; Wine, etc.

The only alcohol we are concerned with is ethylic or vinous alcohol. Absolute alcohol contains 95.5 per cent.; rectified spirit, 90 per cent.; genuine brandy, 40 to 70 per cent.; rum, 40 to 54 per cent.; gin or hollands, 25 to 50 per cent.; whisky, 40 to 54 per cent.; liqueurs, 40 to 52 per cent.; port, 15 to 25 per cent.; sherry, 15 to 20 per cent.; Madeira, 10 to 14 per cent.; claret, champagne, Burgundy, hock and chianti, 9 to 12 per cent.; stout and heavy beer, 5 to 9 per cent.; light beer, 2 to 5 per cent.

Wines are obtained by the spontaneous fermentation of the juice of the grape; spirits are obtained by distillation; brandy from wine, rum from molasses; gin or hollands is spirit flavoured with juniper and sweetened with sugar; whisky is spirit which requires mellowing to get rid of fusel oil and other impurities.

Beer differs from wines or spirits in being definitely nutritive, since it contains a large percentage of albumin, carbohydrate and, fermentation not being completed, a proportion of yeast cells.

By virtue of its tendency to evaporate, that is, change into gas or vapour, alcohol

is used extensively in medicine as a means of producing local coldness which will relieve pain, as in the well-known application of eau-de-Cologne for headache. On the same principle, evaporating lotions are used to relieve painful swellings, such as sprains; but it must be borne in mind that when evaporating lotions are used, the fluid must be put on gauze or material of open meshwork in order that the alcohol may escape; otherwise a blister will be produced. If alcohol is rubbed into the skin it hardens the skin, as the spirit extracts the water of the skin.

When a person is kept in bed for any length of time, those parts of the body most subject to pressure, viz. the shoulders, the buttocks and the heels, are regularly rubbed with spirit, and then the area is dusted with an antiseptic powder, as one containing equal parts of oxide of zinc, boric acid and starch; this proceeding tends to prevent the formation of bed-sores.

Alcohol vigorously rubbed into the skin has a rubefacient effect, i.e. it reddens the skin by causing the small blood vessels of the skin to dilate so that more blood is brought to the part, and sometimes

ALCOHOL

drugs are dissolved in the spirit either to increase rubefacient or counter-irritant effects or to apply anodynes for the relief of pain; thus we have liniment of belladonna, chloroform, etc.

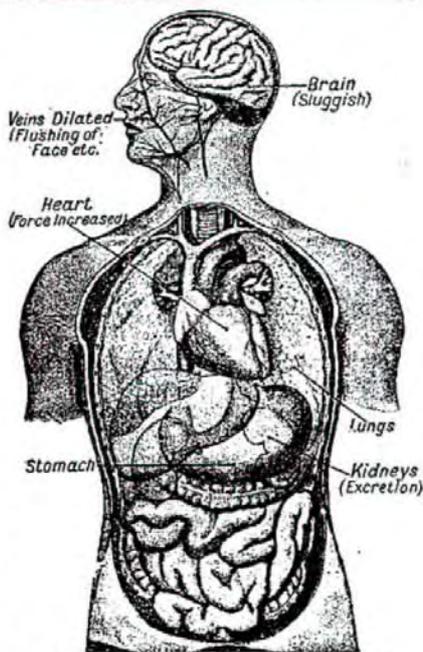
Water containing 10 per cent. and upwards of alcohol acts as an antiseptic, i.e. it will kill and prevent the growth of poisonous germs. Thus the surgeon will place his knife or the needles of his hypodermic syringe in alcohol, which renders the instruments surgically pure, and has the further advantage of not blunting them or causing rust to be deposited, as may happen when they are boiled.

With regard to the use of alcohol as an internal medicament, it must be remembered that alcohol is a drug, and in prescribing it the physician so views it.

The considered view may be given in the words of Sir Lauder Brunton: If alcohol tends to bring the patient nearer his normal condition, it is doing good; if it takes him farther away from his healthy condition, it is doing him harm. For instance, if the drug renders the tongue moist, slows the quickened pulse or the hurried breathing; if it renders the skin moist and cooler when hot and dry, and if it lessens delirium and brings sleep, then use it. The truth is that, as in medicine generally, no general rule applies; every case must be taken on its merits; one man may be used to alcohol and stand a lot, while to another a small dose acts as a poison.

Effects of Alcohol on the Digestion

When given in small doses alcohol increases the flow of the saliva and the juices of the stomach, thus increasing appetite and aiding digestion. It increases the force of the heart beat and stimulates the mental activity. When thus taken there is a sensation of warmth; but alcohol should never be used with the idea of resisting cold, because by its action on the blood vessels of the body, which it dilates, it causes an increased flow of blood to the skin, and the blood thus brought into contact with the cold air quickly loses its heat, and the body temperature falls and reaches a lower temperature than it had



EFFECTS OF ALCOHOL ON THE BODY

The effects of drinking alcohol are generally shown in the following order: 1. Vessels of the stomach dilated and flow of gastric juice augmented. 2. Force and frequency of heart action increased. 3. Partial paralysis of vaso-motor nerves causing flushing of skin. 4. Power of concentrated thought diminished. 5. Temperature of body depressed. 6. Acidity and water of urine increased

If a person be a stranger to the drug, a full dose at bedtime will act as a narcotic and produce sleep; but, as in the use of all soporific drugs, the danger to be apprehended is the formation of a habit. During convalescence a glass of light sherry is a valuable aid to digestion, with occasionally a glass of port wine or a good Burgundy.

Champagne is a most valuable stimulant in serious illnesses and after surgical operations. It may be given in two or three ounce doses two or three times a day.

Natural wines contain certain organic acids such as tartaric, malic, sulphuric etc.

or whooping-cough, and in acute diseases as gastro-enteritis, a temporary measure suppurations diseases, such as sometimes beneficial.

In pneumonia it is a restorative and useful in typhoid fever, but if care may increase the disease incidental to the disease.

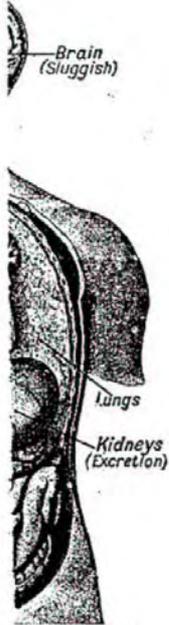
Where an increased action is desired, gin or brandy or whisky is often used for a gouty attack.

For a common cold, brandy is often used as a water. For the rheumatism, influenza, unnecessary, if not

A question often asked is whether alcohol is a food. Sir Lauder Brunton says it is a food in despondent cases, provided it requires careful moderation. The maximum amount that can be used as a food is one and a half or two hours, provided diluted and in divided portions. The amount expressed in the following table is: One

Brandy	.....
Whisky	.....
Rum	.....
Liqueurs	.....
Gin	.....
Port	.....
Sherry	.....
Madeira	.....
Claret	.....
Champagne	.....
Burgundy	.....
Hock	.....
Chianti	.....
Stout	.....
Heavy Beer	.....
Light Beer	.....

ALCOHOL



ON THE BODY

hol are generally : 1. Vessels of the gastric juice aug- cy of heart action is of vaso-motor in. 4. Power of shed. 5. Temper- Acidity and water ed

r to the drug, a ct as a narcotic in the use of all r to be appre- a habit. Dur- light sherry is a ith occasionally od Burgundy, aluable stimu- d after surgical in two or three nes a day. certain organic , sulphuric, etc., ombined with l other salts. patients in the cho-pneumonia

or whooping-cough, alcohol may be essen- tial, and in acute digestive conditions, such as gastro-enteritis, it may be necessary as a temporary measure; in anaemia, pro- fuse suppurations and in chronic wasting diseases, such as phthisis, red wine is sometimes beneficial.

In pneumonia it may have some use as a restorative and food. Brandy is very useful in typhoid fever and in acute bron- chitis, but if care be not used alcohol may increase the tendency to asphyxia incidental to the disease.

Where an increased output of urine is desired, gin or hollands may be selected, and these or whisky are the best stimu- lants for a gouty patient.

For a common chill a glass of hot lemon- ade is often as useful as hot spirit and water. For the routine treatment of rheumatism, influenza, etc., alcohol is quite unnecessary, if not harmful.

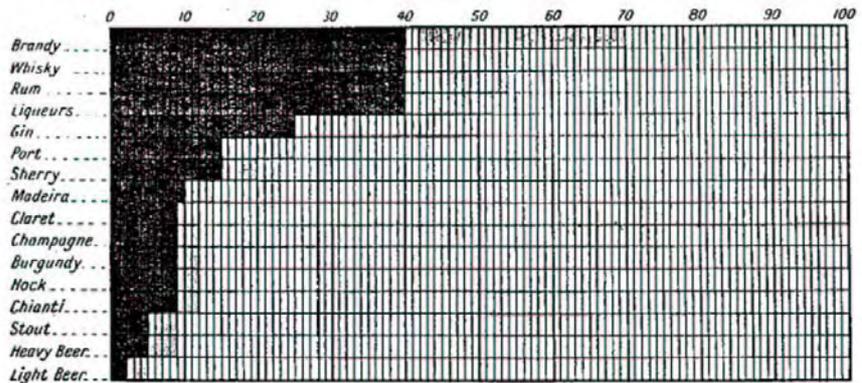
A question often asked is whether alco- hol is a food. Sir Thomas Fraser says that it is a food in desperate cases, but one that requires careful medical supervision. The maximum amount of ethylic alcohol which can be used as a food by the normal body is one and a half ounces in any twenty-four hours, provided that it be taken well diluted and in divided doses. The equiva- lent of this amount of pure alcohol, expressed in the commonly used alcoholic beverages, is : One to two pints of ordinary

beer or stout, one-half to one pint of light wine, a quarter to half a pint of heavy wine, one-tenth to one-fifth of spirits. Beyond these amounts the alcohol is not burnt up in the body, but is passed off in the urine and in the expired air.

The alcohol taken up by the body is carried by the blood to all the tissues. After a large dose some alcohol remains in the blood, and should a second dose be taken before all the first dose has left the blood, intoxication may occur. The slow disappearance of the alcohol from the body when the full amount has been exceeded accounts for the miserable feeling charac- teristic of " the morning after."

Alcohol supplies energy in the form of heat or work necessary to the continuance of the vital processes—beat of the heart, breathing, and all other muscular move- ments. Experiments have been made as to the effect of alcohol on men taking exer- cise, when it was found that a trained man without alcohol performed work which, expressed in terms of horse-power, was 0.275; the same man immediately after taking a dose of alcohol and performing the same task produced only 0.222 horse- power. In a walking experiment it was shown that alcohol caused lessening of the distance covered and diminished efficiency.

Alcohol does not ward off either infec- tion or fatigue. Its action tends to promote repose and thus to allow of



THE AMOUNT OF ALCOHOL IN SPIRITS, WINES AND BEER

Pure or absolute alcohol being represented here by 100 squares (100 per cent.), the black squares show the minimum percentage that should be found in the liquors named, and the shaded squares show the excess over this that may be present. Thus, brandy, whisky, rum and liqueurs should contain a minimum of 40 per cent. of pure alcohol, but as much as 70 per cent. may be found in a good liqueur brandy

ALCOHOLISM

recovery from fatigue. Any increased work it enables us to do is in the nature of a draft upon capital, which must be repaid later by a more prolonged period of rest; in short, alcohol acts as a spur. Chronic alcoholism lowers the body resistance.

Because large doses poison the system it is quite erroneous to assume that repeated small doses have a like effect. It is estimated that 90 per cent. of the population take alcohol in small doses. A tolerance for alcohol can be established similar to that obtained for nicotine.

As a dietetic, alcohol in moderation leads to sociability and is "a lessener of worries in the stress and troubles of the life of to-day, especially amongst the toilers."

The selection of either wine or spirit as a beverage may be a mere matter of convenience, or even fashion. In the wine-growing districts such as France, Italy, etc., wine is always at hand, whereas in Great Britain spirit is the more accessible. Moreover, there is the question of cost, wine in France being within the reach of all—whereas in Great Britain the cost of wine is often prohibitive compared with that of whisky, as the latter beverage is taken in smaller quantities, and is more economical from that point of view. If

taken in large doses the beneficial effects of alcohol are replaced by untoward results; digestion is either delayed or entirely stopped, and if excessive doses be persisted in, gastric catarrh and congestion of the liver result. Taken in still larger doses a condition of profound unconsciousness supervenes, which may go on until death occurs from paralysis of the breathing apparatus.

In considering the poisonous nature of alcohol, it must be remembered that, for commercial purposes, it is derived from starches and sugars by fermentation, distillation and rectification. Many by-products occur during this process, and are very difficult to get rid of. Fusel oil always occurs in the distillate of starches; fatty acids and ethereal salts may also be present, and in addition a small quantity of furfural, which is a poison causing convulsions. Whisky has to be kept to remove excess of fusel oil and traces of furfural. It is these by-products which are often the cause of poisonous symptoms seen in alcoholism.

Speaking quite generally, alcoholic habits are more likely to be engendered by the consumption of spirits than of wines.

See Beer; Spirit; Wine.

ALCOHOLISM: PREVENTION & CURE

METHODS OF COMBATING A DANGEROUS EVIL

Here are described the morbid conditions that may be established by excessive use of alcohol. Medical treatment likely to prove beneficial is indicated and stress is laid upon the moral influences that alone are likely to be entirely curative.

See also such headings as Drug Habits; Insanity, etc.

A person may get drunk and still not be, or become, an alcoholic in the sense of an habitual drunkard; it may be merely an episode in his life. No description of drunkenness will cover all its possible manifestations, for the simple reason that different individuals react in various ways to the effect of the drug. The dose necessary to cause drunkenness is not the same either for all persons or even for the same person at different times and in different circumstances.

Alcohol, it has been well said, exaggerates the normal temperament. The weak man under its influence becomes foolish, the morose man weeps, and the excitable man becomes merry and exalted. Some vomit,

others do not. Generally speaking, the immediate effect of alcohol is to produce a feeling of well-being; the individual becomes more emotional, his tongue is loosened, caution is forgotten, self-control is diminished or lost. From this first stage we pass on to the second, when the drug is continued or the dose has been very large; this is the paralytic stage. All sensations are blunted; speech becomes thick and difficult; the body movements become unsteady and purposeless. The third stage is that of deep sleep, stupor, or coma. Unconscious, the victim lies inert, breathing noisily or stertorously; the skin may be wet from sweat, and he may die from paralysis of his breathing

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What to Do

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The ill-effects alcohol take on degree of sever symptoms, but most commonly alcoholism, due ness but to a is a condition v medical practiti amongst women ages when the c the drug is urge period between the change of l dangerous. A system is ups nervous system afford relief, it the insidious n and larger dos frequent doses, the result or moderate amo consciously, the pa

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SHELL SHOCK—SHIGA BACILLUS

it is true that the explosive force of large shells may, through the concussion and the letting loose of noxious gases, produce physical injury, the vast majority of cases called shell shock were mainly some form of hysteria, either showing some bodily disability (conversion hysteria) or anxiety state with morbid fears (anxiety hysteria). The term has been so abused that the laity put down any service mental disability, even insanity, as due to this factor.

Insanity had no real relationship with any such factor. Subsequent to being blown over by a shell explosion the soldier might or might not show any symptoms according to an individual predisposition. One might find his legs paralysed (hysterical paraplegia), another had lost the power of speech, others had a memory loss, while some might run away in a confused panic. A variable time of unconsciousness was usually noted.

The more typical picture of a shell shock case is that of a man who tends to be tremulous, is easily startled, is sleepless with war dreams, somewhat depressed, with more or less constant anxiety and a feeling that some disaster will happen. Special morbid fears of the dark, heights or closed spaces may also be present. Such symptoms, however, might be found without any history of being exposed to a shell explosion, but noted as a result of some other terrifying experience.

As in all neuroses, there is some secondary gain. The outbreak of shell shock symptoms entailed the removal of the soldier from the line. Those who were wounded seldom had any such symptoms, as the wound, if incapacitating, served the same object. Shell shock symptoms are, therefore, symptoms of defence, and in the main do not differ in their psychological mechanism from those we find in civil life under the heading traumatic neurasthenia. A War Office committee of inquiry decided that shell shock was purely a mental condition. Its treatment is thus that of some form of psychotherapy. See Day Terrors; Neurasthenia.

SHERBET. This was originally an oriental drink, consisting of the juice of various fruits, such as the lemon or citron, dropped on sugar and frozen. As we know it in England it consists of a cheap, sweetened powder which effervesces on

the addition of water. The powder consists of tartaric acid and sodium bicarbonate, with a little sugar and flavouring agent added. When water is added to this powder the tartaric acid interacts with the sodium bicarbonate, forming sodium tartrate and carbon dioxide. The latter is a gas and causes the effervescence.

Children have discovered that by placing their tongues in the sherbet powder a pleasant sensation and sweet taste are obtained, the moisture of the tongue acting instead of the water. It is unfortunately a practice among poor children to buy a bag of sherbet powder and pass it round among their friends for each member to place his tongue in the bag in turn, thus possibly spreading infectious disease from one to another.

SHERRY WINE. Under the name *vinum xericum*, sherry is included in the British Pharmacopoeia, because it is used for making some of the medicinal wines, viz., the antimonial, colchicum, ipecacuanha and iron wines.

As a beverage the chief facts of medical interest about sherry are that it has been fortified, more or less, by the addition of spirit, which may possibly be potato spirit, and that it is the wine that is most frequently "plastered." This means that gypsum has been used to produce a clear and sparkling effect; but this involves a change in the chemical constituents of the wine and a corresponding depreciation of its wholesomeness. Even good sherry is unsuitable for gouty people. The alcoholic strength of sherry, about 20 per cent., should be kept in view when it is taken as an aperitif, as a considerable quantity of alcohol taken on an empty stomach is harmful.

Sherry whey is sometimes given to the sick. It may be made by putting half a pint of milk into a small, clean saucepan and bringing it to the boil. Two ounces of good sherry are then added, and the mixture heated till the milk curdles, when it is strained through muslin. A heaped teaspoonful of sugar may be added if desired. Half of this quantity of whey can be given to an adult patient on milk diet as one of his meals. See Wine.

SHIGA BACILLUS. This micro-organism is the representative of one of the two chief types of dysentery bacilli.

It is a short, rod-shaped bacillus, with rounded ends, and the mucus of the dysentery bacillus is not green. The body is not green. In the absence of direct sunlight it resists drying for

Infection by directly through utensils, dishes contaminated by a and also through water. It is conveyed by house-polluted water. dysentery bacillus water, maintain for over three weeks.

It is on account of its elaborated by bacteria of this type is produced by other toxins exists with that even a small quantity of shiga can produce a fatal result. produced by the perature (60° C. sufficient to kill upon its toxin.

See Bacteria;

SHIN BONE. The medical name of the larger of the two bones of the lower limb below the knee, the tibia. The shaft is sectioned, and the lying just beneath the length. See Leg.

SHINGLES. A name which is a form of herpes. Although it is so called, the herpes facialis is referred to as "a frequent association conditions.

The actual shingles is somewhat different from the herpes facialis. It is caused by the same organism as the herpes facialis, but is caused by a different association of conditions.

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WINDPIPE — WINKING

allowed egress if the window is open at the top. This double action is seen best in the ordinary sash window, particularly if it is carried well up to near the top of the room. French windows, though delightful in certain climates, are not so capable of regulation. The dormer or cottage window is also likely to be indifferent as a scientific ventilating appliance.

For lighting, windows need special care. They should always be kept as clean as possible, which is difficult in towns. The beneficial effect of sunlight, particularly the ultra-violet ray effect, is greatly lessened by passing through glass. Windows should be carried well up to the ceiling to increase illumination, and where school work is done they should be placed so that the light comes from the left. In factories special lighting may be needed.

Further information is given under the headings Lighting and Ventilating.

WINDPIPE. The air way to the lungs is known as the trachea or windpipe. It lies in the middle line of the lower part of the neck and upper part of the chest, and is thus one of the important structures that pass through the thoracic inlet.

It is made up of a series of incomplete rings of cartilage or gristle, the back part of the rings being deficient and the interval filled in by membrane. It is continuous with the larynx above and with its two branches or bronchi below. In thin individuals the cartilaginous rings can be felt in the middle line at the root of the neck just above where it disappears behind the breast bone.

The windpipe is more correctly known as the trachea, under which heading full details are given.

WINE. The beverage produced from the pure juice of the grape by fermentation is known as wine. Its quality, therefore, is dependent upon the variety of fruit, soil, climatic conditions, mode of cultivation, etc. In constitution it is exceedingly complex, for there are present water, 0 to 6 per cent. of grape-sugar and fruit-sugar, 5 to 22 per cent. of ethyl alcohol, many other higher alcohols, glycerin, aldehydes, oils, ethers, extractives, mineral salts, 0.15 to 0.6 per cent., albuminous matter and 0.3 to 0.8 per cent. of such acids as tartaric, malic, acetic, succinic, etc. One authority says: "It

is so complex and homogeneous that we cannot modify any element without producing changes in the composition of the wine itself."

The yeasts on the grape skins vary in type and are different from the ordinary organism which produces fermentation of malt liquors. The colour is extracted from the skins, while a little sugar and more albuminous matter give rise to a dry wine. Natural wine cannot contain more than 16 per cent. of alcohol, as this concentration kills the yeast; to "fortified" wines spirit is therefore added artificially. The questions of casking, bottling, maturity and wine disease do not concern us here, but they are, nevertheless, of great importance. The accompanying table expresses the percentage composition of some varieties.

Wine	Alcohol	Residue	Acids	Sugars
Bordeaux Claret	10.7	2.72	0.35	0.00
Sweet Sauterne	11.7	3.61	0.39	1.40
Dry Sauterne	12.8	2.99	0.40	0.30
Moselle	9.9	2.00	0.42	0.00
Hock	10.9	5.98	0.63	3.0
Champagne	13.7	3.57	0.40	1.9
Australian	14.2	2.96	0.29	0.2
Spanish	13.6	3.36	0.36	0.8
Italian	10.8	2.29	0.36	0.1
Cider	6.0	1.20	0.66	0.3

Medicated wines are merely concoctions having a basis of port or sherry to which has been added extract of malt, extract of beef, cinchona, iron, etc. It is impossible to consider here the full uses of wine in disease, but it can be mentioned that during health the prudent daily consumption should not exceed one bottle of a 10 per cent. wine for an active man. The Pharmacopoeia also contains a certain number of medicines dissolved in wine, e.g. vinum antimoniale, or antimonial wine. See Alcohol; Cordial; Sherry.

WINKING. The movement of the eyelids known as winking is for the most part reflex and unconscious, and is the method by which the surface of the eyeball, which is otherwise exposed to the air, is kept moist.

Every flicker of the eyelids sweeps the tears across the eye, and the mechanism by which this comes about is of interest.

The muscle covering the lids and surrounding the front of the eye socket is a thin sheet known as the orbicularis oculi.

Its inner part covers the tear duct which conveys into the nose. Contrarily closes the eye duct; when the muscle opens and the duct alternate compression the duct pumps the into the nose. Thus stress of emotion or the tears well up we get rid of them, and usually free we thus overflowing the lids.

A speck of dust in wink for the same flow of tears induced requires to be passed fact, the foreign body the corner of the eye wiped away at leisure. method of getting rid the eye by blowing the physiology, for the empties the tear duct take up more tears for

Habit spasms of the are frequently manifest, convulsive facial form of unconscious winking.

See Eyelid; Habit Action; Tears.

WINSLOW'S name is applied to ment of the knee-joint all diarthrodial (free surrounded by a cavity ends of the bones with the formation of the

The ligament of Winslow thickened back part knee and closes in tension of the knee relaxes it. See Knee

WINTER. In discomforts and disease season in Great Britain a few simple rules established facts of towards the preservation the trying months necessity of making shine and warmth up a resistance to the days of cold

**"Clinical
Experiences"**

OF
**NERVOUS and ...
CHRONIC DISEASES**

BEING A
**REVISED AND ENLARGED EDITION
OF THE
ORIGINAL VOLUME**



BY THE . .
CONSULTING STAFF OF SPECIALISTS
OF THE
Electro-Medical and Surgical Institute,
Cor. of BATHURST & ELIZABETH STREETS, SYDNEY.
AND
Cor. of Bourke and Elizabeth Streets (opp. G.P.O.),
MELBOURNE.

barley, sugar, and flavoured with orange or lemon peel, boiled for half-an-hour.

TOAST-AND-WATER.—Toast *thoroughly*, but do not singe, two slices of bread, cover them with a pint of *boiling* water, and set aside with a cover over it to cool.

LEMONADE.—Peel thin one large, or two small lemons, put the peel with two oz. of sugar into a jug, squeeze the juice in, pour on a pint of boiling water, and set it aside covered to cool.

MILK AND SHERRY MIXTURE.—Milk and lime water of each an equal quantity, $\frac{1}{4}$ oz. to 1oz. of sherry wine. A very useful and pleasant drink when there is a tendency to acidity of the stomach.

ACIDULATED RICE DRINK.—Ground rice, 1oz; water, 8 pints; boil to two pints, and sweeten with barley sugar, 1oz; lemon juice, 1oz.

WHITE DECOCTION.—Bread crumbs, 1oz., hartshorn, shavings, $\frac{1}{2}$ oz.; 8 pints of water—boil to two pints; flavour and sweeten with lemon and sugar.

TAMARIND DRINK.—Mash up some tamarinds in boiling water, strain and set aside to cool.

DUSTING POWDER.

Oxide of zinc, one part; starch powder, two parts.

EAR, REMOVAL OF OBSTRUCTION FROM.

If a foreign body has slipped into the ear, do not attempt poke it out: such a proceeding is more likely to fix it firmer, and it will certainly do injury to the delicate structure of the ear. Syringe the ear with warm water, keep the nozzle of the syringe against the upper wall of the passage; keep the head lying with the ear downwards;

moisten with a little oil; if the substance can be seen, make a loop of thin silver wire, and try gently to pass it behind the body and so draw it out. If such simple means fail, give it up, and call in the assistance of a surgeon. Syringing with warm water, and moistening the passage with oil, is the best plan for removing an excess of wax.

EAR-ACHE.

Laudanum placed in the ear on cotton wool; a roasted fig split in half and laid on; a hot bran poultice, or hot fomentations; steaming the head over a decoction of poppy heads and camomile flowers (two poppy heads, two ounces of flowers to a quart of water, boil). A soothing fomentation may be made by sprinkling fifteen drops of laudanum on spongio-piline wrung out of boiling water; a mustard plaster behind the ear.

ERYSIPELAS (SLIGHT).

Keep out the air, if the part affected can be covered, either with the dusting powder or with cotton wool. A cooling, soothing lotion may be made by adding-half oz. of laudanum to half pint of Goulard water. If the skin is indolent in healing, the black wash of the pharmacopœia, made by dissolving two grains of calomel in one ounce of lime water, is very useful in cleansing and healing up erysipelatous sores. The general health requires attention.

EYE LOTION.

Sulphate of zinc, half a drachm, dissolved in a pint of water; wash with, or bathe. Alternate with alum, one and a half drachms; water, one pint; useful in weak, or inflamed eyes. The secretion must be most carefully washed away, as often as it collects. A blister or

7.4 SCIENTIFIC PAPERS

7.4.1 PROFESSOR S RENAUD

7.4.1

EPIDEMIOLOGY

Wine, alcohol, platelets, and the French paradox for coronary heart disease

S. RENAUD M. DE LORGERIL

In most countries, high intake of saturated fat is positively related to high mortality from coronary heart disease (CHD). However, the situation in France is paradoxical in that there is high intake of saturated fat but low mortality from CHD. This paradox may be attributable in part to high wine consumption. Epidemiological studies indicate that consumption of alcohol at the level of intake in France (20–30 g per day) can reduce risk of CHD by at least 40%. Alcohol is believed to protect from CHD by preventing atherosclerosis through the action of high-density-lipoprotein cholesterol, but serum concentrations of this factor are no higher in France than in other countries. Re-examination of previous results suggests that, in the main, moderate alcohol intake does not prevent CHD through an effect on atherosclerosis, but rather through a haemostatic mechanism. Data from Caerphilly, Wales, show that platelet aggregation, which is related to CHD, is inhibited significantly by alcohol at levels of intake associated with reduced risk of CHD. Inhibition of platelet reactivity by wine (alcohol) may be one explanation for protection from CHD in France, since pilot studies have shown that platelet reactivity is lower in France than in Scotland.

Lancet 1992; 339: 1523–26.

Description of the French paradox

The findings of the MONICA project,¹ a worldwide monitoring system for cardiovascular diseases organised by the World Health Organisation (WHO), confirm that the mortality rate from coronary heart disease (CHD) is much lower in France than in other industrialised countries such as the USA and UK. The MONICA results (table 1) show that the mortality rate from ischaemic (coronary) heart disease in France is closer to rates in Japan or China than to rates in the USA or UK, particularly for women, despite intakes of saturated fat (14–15% of energy²) and concentrations of serum cholesterol that are similar to those of the USA and UK. This finding constitutes the French paradox for CHD. Other risk factors for CHD, such as blood pressure, body-mass index, and cigarette smoking (at least in men), are no lower in France than in other industrialised countries (table 1).¹ We know of no adequate explanation for these paradoxes.

Dietary habits consistent with protection from CHD have been considered too restrictive (high in polyunsaturated fats and/or vegetarian); however, the diet in Toulouse, France, is varied and characterised by low consumption of butter and high consumption of bread, vegetables, fruit, cheese, vegetable fat, and wine (table 1)—ie, a Mediterranean-type diet. In addition, foie gras and other foods associated with a gourmet diet are eaten. The high wine intake and low mortality from CHD in Toulouse may be considered surprising. Nevertheless, this observation accords with previous reports^{4,5} of an inverse association between consumption of alcohol and cardiac mortality in developed countries, the potentially beneficial effect of alcohol being reported as essentially due to consumption of wine.⁴

TABLE 1—AGE-STANDARDISED ANNUAL MORTALITY FROM CHD, AND RELATED RISK FACTORS IN MONICA POPULATIONS (35–64 YEARS)

MONICA centre	Annual CHD mortality/100 000 population		Mean serum cholesterol (mg/dl)*		Mean systolic blood pressure (mm Hg)		Proportion of regular cigarette smokers (%)	
	Men	Women	Men	Women	Men	Women	Men	Women
Japan	33	9	..	..	..	..	..	..
Beijing, China	49	27	163	166	130	129	50	16
Toulouse, France	78	11	230	224	133	128	37	17
Strasbourg, France	102	21	218	216	145	137	34	15
Lille, France	105	20	252	248	139	135	39	11
Switzerland	103	17	248	232	132	126	32	21
Stanford, USA	182	48	209	205	128	124	40	37
Belfast, UK	348	88	232	236	135	132	34	33
Glasgow, UK	380	132	244	246	138	134	52	50

Data from ref 1. *mmol/l serum cholesterol = mg/dl ÷ 38.7.

We have used data from the WHO and the Organisation for Economic Cooperation and Development (OECD) to show that of many different foodstuffs only dairy fat is significantly positively associated with the mortality rate from CHD.⁶ Statistics from 17 countries that report consumption of wine show that the correlation between mortality from CHD (in 1987)¹ and intake of dairy fat

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TABLE II—CHD MORTALITY, HIGH-DENSITY-LIPOPROTEIN (HDL) CHOLESTEROL, AND DIET IN MEN IN THREE FRENCH MONICA CENTRES

	Strasbourg	Toulouse	Lille
CHD mortality/100 000 men	102	78	105
Mean serum HDL cholesterol (mg/dl)	45	52	60
Diet (g/day)			
Bread	164	225	152
Vegetables	217	306	212
Fruit	149	238	160
Butter	22	13	20
Cheese	34	51	42
Vegetable fat	16	20	15
Wine	286	383	267

Data from refs 1-3. About 600 subjects aged 35-64 measured for HDL cholesterol.

(OECD, 1980-85) is highly significant ($r=0.73$, $p<0.001$) for pooled data from men and women (fig 1) and for men and women separately (data not shown). It can be seen in fig 1 that the data point for France lies some distance from the regression line—i.e., despite an intake of dairy fat in France similar to that in the UK, Australia, and Germany, mortality from CHD is low. This is a clear demonstration of the French paradox, and the Swiss present a similar paradox. The UK offers the opposite paradox in that the mortality rate from CHD is higher than that in countries with a similar intake of dairy fat. Stepwise multivariate analysis (STAT-80 statistical software, Salt Lake City, Utah, USA) shows that in the 17 countries that report wine consumption, wine is the only foodstuff in addition to dairy fat that correlates significantly with mortality (fig 2). By this type of analysis wine intake has a negative sign indicating a protective effect that accords with previous reports.⁴ The data point for France is now located close to the regression line and no longer offers a paradox compared with other countries. This finding suggests that in France the untoward effects of saturated fats are counteracted by intake of wine. In addition, the greater significance found in fig 2 than in fig 1 indicates that the protection afforded by wine also applies to Switzerland and other industrialised countries. The opposite paradox of the UK, no longer seen in fig 2, can be explained by the low consumption of wine in that country.

The French paradox for CHD may be due to high consumption of wine. Support for this hypothesis comes

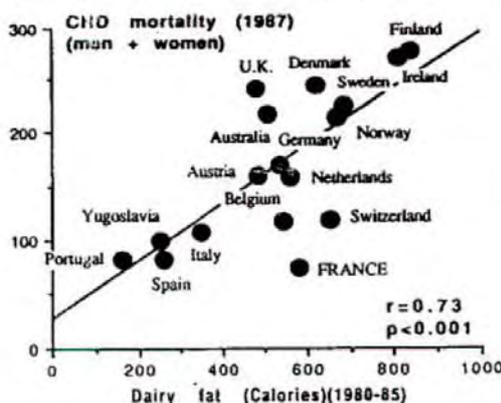


Fig 1—Relation between age-standardised death rate from CHD (mean for men and women) and consumption of dairy fat in countries reporting wine consumption.

Regression equation: $y = 26.3 + 0.27$ dairy fat.

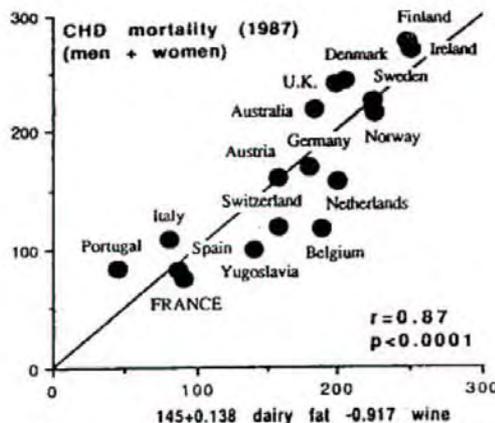


Fig 2—Relation between age-standardised death rate from CHD (mean for men and women) and consumption of dairy fat and of wine in countries reporting wine consumption.

Regression equation: $y = 145 + 0.138$ dairy fat $- 0.917$ wine.

from the two populations in the world with the greatest life expectancy—the Cretans⁷ and the Japanese⁸—both of whom consume moderate amounts of alcohol: the Cretans 20 g per day mostly in the form of wine,⁸ and the Japanese 28 g per day, primarily in the form of beer.⁹

Wine or alcohol in the prevention of CHD

An inverse association between moderate alcohol consumption and CHD has been demonstrated in several epidemiological studies. A study of more than 51 000 men¹⁰ supported the view that moderate alcohol consumption (30-50 g per day) reduces the risk of CHD (95% CI for relative risk 0.35-0.79). This protective effect of alcohol is seen in men and women,¹¹ in the elderly,¹² in smokers and non-smokers,^{10,13} and also applies to total mortality.¹¹ However, the risk increases at high levels of alcohol consumption,¹² especially when in the form of binge or heavy weekend drinking.¹⁴ It must be emphasised that alcohol is a drug that, studies suggest, should be used regularly but only at moderate doses of about 20-30 g per day. At this level of consumption the risk of CHD can be decreased by as much as 40%.¹⁰⁻¹² Thus, alcohol taken in moderation may be one of the most efficient drugs for protection from CHD.

As to whether wine is more protective than beer or spirits, most studies done in USA indicate that beer, wine, and spirits are equally inversely related to CHD.¹⁰ However, in one study,¹⁵ beer and wine were associated with a greater reduction in CHD than spirits in non-smokers. When CHD mortality in Toulouse, France, is compared with that in Stanford, USA (table 1), there is a 57% reduction in men (78 vs 182/100 000). The average consumption of alcohol in Toulouse is about 38 g per day, 34 g in the form of wine, whereas that in Stanford is not known but can be expected to be much lower. Compared with Belfast and Glasgow, the reduction in CHD mortality in Toulouse is even more striking at 78-79%. If this degree of prevention is due, largely to alcohol drinking, it can be speculated that wine should have a greater protective effect than other kinds of alcoholic beverages because the consumption of wine but not of other alcoholic drinks, although not yet reported, is expected to be small in Belfast and Glasgow compared with

Toulouse. An alternative explanation is that because wine is mostly consumed during meals it is absorbed slowly, and thus has a prolonged protective effect on, for example, blood platelets at a time when they are under the influence of alimentary lipids that are known to increase their reactivity.¹⁵ This explanation of the protective effect of wine and its superiority over other alcoholic beverages awaits confirmation by experimental studies.

Mechanism of the protective effect of alcohol

Because studies have shown that alcohol consumption is positively associated with high-density-lipoprotein (HDL) cholesterol and that HDL cholesterol is predictive of CHD in men and women,¹⁶ the mechanism responsible for the protective effect of alcohol was thought to act through HDL cholesterol. The main role of HDL may be the transport of cholesterol from arteries to liver for subsequent excretion, thus preventing accumulation of cholesterol and hence atherosclerosis. However, it is now known that the effect of alcohol on HDL can explain only half the protection against CHD afforded by alcohol.¹⁷ In addition, it does not seem that alcohol protects exclusively, or, perhaps, even primarily, through its action on atherosclerosis. When cirrhosis is used as a marker of excessive alcohol consumption, patients with this condition usually show less atherosclerosis than controls,¹⁸ but this is not necessarily the case when possible bias is eliminated. Moore and Pearson¹⁶ reviewed seven necropsy studies in which, instead of relying on cirrhosis as a marker, alcohol consumption was estimated; five studies found no association between alcohol consumption and severity of atherosclerosis. These observations are consistent with animal studies that showed that inhibition of arterial lesions could be obtained at high (36% of energy),¹⁹ but not low (10% of energy),²⁰ alcohol intake.

It has been shown in prospective²¹ and case-control studies²² that moderate intake of alcohol can prevent myocardial infarction, and by inference coronary thrombosis, but not stable angina pectoris,²¹ which is primarily the result of atherosclerotic lesions. In addition, the rapid loss of protection from CHD experienced by ex-drinkers²¹ is unlikely to be due to increased atherosclerosis because such lesions do not progress quickly. Finally, alcohol drinking seems to increase the risk of subarachnoid haemorrhage,²³ an observation consistent with a possible effect of alcohol on haemostasis. Among the haemostatic factors, platelets play a crucial part in coronary thrombosis. Drugs such as aspirin that inhibit platelet aggregability protect against myocardial infarction. An increase in platelet aggregation has been significantly associated with increased prevalence²⁴ and incidence²⁵ of CHD. Alcohol ingestion or infusion inhibits platelet aggregability in man, and it has been shown in rats that addition of 4-6% ethanol to drinking fluid reduces platelet aggregation, an effect that occurs rapidly but is also lost rapidly with rebound effects.²⁶ A study in Wales of 1600 subjects²⁷ found that aggregation of platelets to ADP was inhibited to the same degree, and by the same level of alcohol consumption, as reported previously¹⁰ to protect from CHD (table III). Of course, the dose-related effect of alcohol on platelets does not exclude additional beneficial effects on other haemostatic factors such as fibrinogen and fibrinolytic activity.

In conclusion, it seems that consumption of alcohol is associated with inhibitory effects on atherosclerotic lesions

TABLE III—EFFECT OF ALCOHOL ON RESPONSE OF PLATELETS TO ADP AND ON RISK OF CHD

	Alcohol intake (g/day)			p for trend*	
	0	0.1-5.0	5.1-30.0		> 30.0
95% CI for odds ratio for high ADP-S†	1.0	0.40-1.13	0.19-0.80	0.08-0.54	<0.001
95% CI for relative risk of CHD†	1.0	0.74-1.33	0.56-0.97	0.35-0.79	<0.0001

ADP-S = secondary aggregation to ADP.

*Mantel test; †data from ref 27; ‡data from ref 10.

in man and animals, but only at levels of alcohol consumption incompatible with a healthy life. At the moderate intake associated with the prevention of CHD, the mechanism of protection seems to be, at least partly, a haemostatic effect, possibly a decrease in platelet reactivity. The rebound effect on platelets after alcohol withdrawal²⁸ could explain the increased risk, especially for sudden death,¹⁴ associated with binge and excessive drinking.

Platelets and the French paradox

Compared with Belfast, protection from CHD in Toulouse is not associated with a low serum cholesterol¹ or a high HDL cholesterol. Research on HDL subfractions and subclasses may shed further light on their role in the French paradox; however, it appears that the concentration of the antiatherogenic fraction apoA1 is decreased rather than increased by alcohol drinking.²⁸ Although platelet reactivity has not yet been evaluated in the MONICA centres, we have compared farmers from Var, southern France (low in CHD mortality), with farmers from south-west Scotland for this variable in pilot studies.^{29,30} Platelet aggregation was strikingly lower in Var. Secondary aggregation to ADP, the test that undergoes the greatest decrease with alcohol,²⁷ was 55% lower in Var than in Scotland, whereas mean HDL cholesterol was 69 mg/dl in Girvan, Scotland, 66 mg/dl in Stranraer, Scotland, and 63 mg/dl in Var. Consumption of alcohol was greatest in Var (45 g per day vs 20 g per day in Scotland), mostly in the form of wine.

Ulbricht and Southgate³¹ have stated that there are seven dietary factors, not including alcohol, implicated in CHD. We believe that alcohol is an important dietary factor in the regulation of the CHD process.

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BOOKSHELF

Atrial Natriuretic Hormones

David L. Vesely. New Jersey: Prentice Hall. 1992. Pp 240. \$64. ISBN 0-130505846.

The discovery that the heart synthesises a peptide (atrial natriuretic peptide or ANP) with natriuretic-diuretic properties had an effect akin to passing a catheter in a patient with urinary retention; it relieved a block (to salt and water research), produced a tremendous flow (of papers), and gave a general feeling of relief (amongst those who had predicted its existence). As the paper diuresis diminishes to a comparative trickle, a steady stream of books have begun to appear with the aim of summarising the literature and placing the observations in context. Or, in this case, highlighting the authors' own papers.

Unravelling the physiology of ANP has been a multidisciplinary effort and the task of presenting a comprehensive and unbiased account is quite a challenge for a single author. One disappointment with this book is the lack of space given to brain natriuretic peptide, C-natriuretic peptide, and urodilatin. These peptides are structurally related to ANP, creating a "family of natriuretic peptides", but their synthesis and secretion may be differentially regulated. The author gives preference to his own experiments with the N-terminal fragment of the prohormone of ANP, which he believes subdivides into three biologically active peptides. This idea has not been widely studied by other groups, which may explain the high percentage of self-citation in some chapters. Another disappointment is the limited reference to endopeptidase-24.11. This cell-surface enzyme has an important role in metabolising and clearing ANP and presents the most promising target for pharmacological enhancement of endogenous ANP as a treatment for disorders of sodium and water balance, such as heart failure.

The book is well laid out and may appeal to those interested in the measurement of the plasma concentration of ANP (and its prohormone) in health and disease. However, it cannot be said to serve as an adequate testimony to the current state of our knowledge of ANP (and related peptides) or to the efforts of the many who have contributed to it.

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MARTIN R. WILKINS

Infections of the Central Nervous System

Edited by Harold P. Lambert. London: Edward Arnold. 1991. Pp 402. £60. ISBN 0-34054922X.

Infections of the Nervous System

Edited by David Schlossberg. Berlin: Springer-Verlag. 1990. Pp 396. DM 328. ISBN 0-38797332X.

To the neurologist, infections of the nervous system pose the greatest challenge because they require quick, accurate diagnoses and correct therapy. Two books on infections of the nervous system have been on my desk for almost a year and both now have been read, re-read, searched for specific information, and compared and contrasted with perhaps the best standard textbook of neurology—*Principles of Neurology* by Raymond Adams and Maurice Victor.

Both books are multi-authored, of a similar size, and are written for the same audience; but there the similarity ends. In my view, they illustrate a phenomenon that is hard to define—namely, why one text should be so successful and attractive whilst the other, though adequate, is so much less appealing. A successful text usually has a single author or a dedicated editor, who is often an enthusiastic teacher eager to impart knowledge. These people commonly stamp the

7.4.2 DR P NORRIE

The French Paradox explained by the time lag theory

Commentary by Dr Philip Norrie

An article titled "Why Heart Disease Mortality is low in France - the time lag explanation" by Malcolm Law and Professor Nicholas Wald at the *Wolfson Institute of Preventative Medicine* appeared in the *British Medical Journal* 1999;318:1471-1480 in May. It criticised the French Paradox theory and proposed a new explanation for the phenomenon.

The French Paradox is the observation that the French, who have a high cholesterol diet with full cream sauces and pates for example, and smoke, have much lower mortality from ischaemic heart disease than other western countries with a similar diet and smoking habits. The French Paradox was explained by Professor Serge Reynaud in 1991 as due largely to the higher consumption of wine (particularly red wine) by the French when compared to other consumers.

Law and Wald argue that all alcohol has a cardio-protective effect and that, furthermore, the French Paradox is due to three other factors: Firstly, that the French medical profession do not document all manifestations of ischaemic heart disease, such as heart failure as due to coronary heart disease, but list them as "poorly specified cardiac causes". Thus there is an under reporting of the incidence of ischaemic heart disease in France, which the authors argue explains about 12% of the difference between the cardiac mortality rate between France and Great Britain.

Secondly, French women smoke at a third of the rate of British women which significantly reduces the rate of ischaemic heart disease in French women compared to British women because smoking contributes greatly to the pathogenesis of ischaemic heart disease.



The third and last reason forms the crux of their argument; Law and Wald argue that the basis for the bulk of the French Paradox is that the differences in levels of heart disease reflects the lower cholesterol diet that the French enjoyed thirty years ago and not their current high fat diet. A lower cholesterol diet is associated with much lower rates of ischaemic heart disease and, according to Law and Wald, it is this time lag in cholesterol consumption that explains why the French have lower incidence of ischaemic heart disease. Eventually, when their current high cholesterol diet takes effect, their incidence of heart disease will rise and match rates in other Western countries.

The tables below illustrate that 35 years ago the French consumed more meat than the British and had similar fat intakes. What is important, which has been propounded by Serge Reynaud and Curtis Ellison, is that French consumption of fruit, vegetables and vegetable oils, as well as red wine of course (rather than the British consumption of animal and dairy fats) is higher, which has led to the incorporation of the Mediterranean diet as part of the French Paradox.

To me the vascular disease

protection afforded by wine is multifactorial;

First of all there is the "alcohol effect". Alcohol is the medically active component of wine, and alcohol in any form favourably alters the balance of fats in the blood, stimulating the liver to produce 'good' high density lipoproteins (HDL), which leaches out cholesterol from the blood vessel walls, carrying it to the liver for excretion via the bile.

Alcohol also helps inhibit clotting as it decreases platelet aggregation or 'stickiness'. This effect lasts for 24-48 hours; hence for alcohol to have a protective effect it must be drunk regularly and moderately. Beer and spirits are usually consumed on an empty stomach, whereas wine is consumed slowly by sipping over a meal. Hence the wine is absorbed slowly, because it is consumed slowly and the stomach emptying time is much slower when it is full of food.

There is the anti-oxidant benefit of reducing 'bad' low density lipoproteins incorporation into blood vessel walls due to wine's potent anti-oxidants such as resveratrol, quercetin and epicatechin and it doesn't matter if the wine is red or white. There have been many studies by Troup(1), Vinson and Hontz(2) and Jung(3) for example which have shown that white wine is just as effective as red wine as a cardio-protective agent. Dark ales, stouts and aged whiskies also possess this anti-oxidant effect. Polyphenols also protect, together with alcohol, against blood clotting, and may relax blood vessel walls to allow better blood flow.

If Law and Wald's argument is that it is mainly the different levels of cholesterol in diets that accounts for

Continued on page 15

Continued from page 14

the paradox and not the alcohol consumption, then it follows by their logic, that the rate of coronary heart disease (CHD) in countries with a similar British genetic stock and diet as Great Britain should have a similarly high rate of CHD independent of alcohol consumption.

This we can prove is not so. Let us follow the CHD track record of British descendents overseas, who have a similar genetic pool and diet, as related to their drinking habits. Dr. Rodney Jackson from the Department of Epidemiology at the University of Auckland, New Zealand (4) has shown that alcohol consumption significantly reduces CHD when comparing abstainers, moderate drinkers and heavy drinkers in Auckland. Dr. Kevin Cullen's Busselton study (5) has also shown that alcohol consumption significantly reduces rates of CHD, particularly in British genetic pool and diet, and it was the first research in the world to show this effect in women. It is, however, Professor

Leon Simon's Dubbo study (6) which really shows the benefits of moderate alcohol consumption on a British based population. In his study moderate drinkers, both men and women, lowered their mortality rate by 51% (compared to Dr. Cullen's one third improvement) when compared to non-drinkers. This shows that the marked health benefit of moderate consumption of alcohol is still valid on a British population.

To conclude, Dr. Law and Professor Wald concentrate heavily on consumption of animal fats, and fail to mention the importance of the Mediterranean diet as part of the French paradox. The Mediterranean diet encourages the consumption of less meat and more fish, grains and cereals, vegetables, fruit, olive oil and of course wine in the every day diet if CHD is to be reduced. Secondly, the tables illustrate that the French have enjoyed a high fat diet since 1965, i.e. for more than thirty years. If the researchers' theory were correct, France would be showing an increase in rates of CHD

whereas in fact rates continue to fall. Perhaps Curtis Ellison's comments sum up the debate:

"All in all, this paper presents some interesting topics for discussion over a nice bottle of wine, but adds little to a serious scientific inquiry into what factors are protecting the French from coronary heart disease."

Dr. Philip Norrie is a general practitioner, vineyard owner and a historian of wine and health. He is a member of the AIM editorial board.

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Consumption of selected foods in France and the United Kingdom (UK) in 1965 and 1975 (kg per person per year)*

	Oils & Fats			Meats					
	Vegetable Oils	Animal Fats	Total Oils & Fats	Beef	Lamb	Pork	Poultry Meats	Organ Meats	Total
	1965								
France	10.0	12.4	22.4	27.3	2.5	28.1	17.4	7.8	83.1
U.K.	8.1	16.4	24.5	22.8	10.9	27.4	7.4	4.8	73.3
	1975								
France	10.5	16.6	27.1	28.7	3.4	33.1	22.3	9.0	96.5
U.K.	9.1	16.2	25.3	23.7	7.8	24.3	11.8	4.5	72.1

* Based on FAO food balance sheets

Consumption of selected foods in France and the UK in 1965 and 1975 (kg per person per year)*

	Fish	Milk	Fruits	Vegetables
		1965		
France	20.4	226.3	88.0	131.0
United Kingdom	21.2	232.5	60.0	63.0
	1975			
France	21.5	264.8	73.0	106.1
United Kingdom	17.2	230.4	58.4	69.5

* Based on FAO food balance sheets

7.4.3 DR M GRONBAEK

1.4.3

Mortality associated with moderate intakes of wine, beer, or spirits

Morten Grønbaek, Allan Deis, Thorkild I A Sørensen, Ulrik Becker, Peter Schnohr, Gorm Jensen

Abstract

Objective—To examine the association between intake of different types of alcoholic drinks and mortality.

Design—Prospective population study with baseline assessment of alcohol intake, smoking habit, income, education, and body mass index, and 10-12 years' follow up of mortality.

Setting—Copenhagen city heart study, Denmark.

Subjects—6051 men and 7234 women aged 30-70 years.

Main outcome measure—Number and time of cause-specific deaths from 1976 to 1988.

Results—The risk of dying steadily decreased with an increasing intake of wine—from a relative risk of 1.00 for the subjects who never drank wine to 0.51 (95% confidence interval 0.32 to 0.81) for those who drank three to five glasses a day. Intake of neither beer nor spirits, however, was associated with reduced risk. For spirits intake the relative risk of dying increased from 1.00 for those who never drank to 1.34 (1.05 to 1.71) for those with an intake of three to five drinks a day. The effects of the three types of alcoholic drinks seemed to be independent of each other, and no significant interactions existed with sex, age, education, income, smoking, or body mass index. Wine drinking showed the same relation to risk of death from cardiovascular and cerebrovascular disease as to risk of death from all causes.

Conclusion—Low to moderate intake of wine is associated with lower mortality from cardiovascular and cerebrovascular disease and other causes. Similar intake of spirits implied an increased risk, while beer drinking did not affect mortality.

Introduction

During the past decade several large population studies have shown a U shaped relation between alcohol intake and mortality for both men and women throughout adulthood.¹⁻⁴ In a recent study we found that the U shape persisted when the effects of other risk factors, such as smoking and obesity, were controlled for.⁵ Furthermore, neither a higher prevalence of disease at baseline nor an increased number of former drinkers among non-drinkers can explain the U shape.⁶ The risk function for all cause mortality may be the result of combined effects of a decreasing risk of coronary heart disease and an increasing risk of cirrhosis, cancers, and violent deaths, due to an increasing intake.⁴ St Leger and colleagues⁷ and more recently Renaud and colleagues⁸ found an inverse relation between incidence of coronary heart disease and wine consumption in different countries but no such relation for beer consumption. This suggests that the type of alcoholic drink, in addition to alcohol itself, influences the risk of heart disease. Some studies have addressed the issue of type of drink and death from heart disease but did so rather superficially and gave conflicting results.⁹⁻¹¹ In a recent paper specifically addressing this question Klatsky and Armstrong suggested that people who drink wine may be better protected against death from coronary heart disease than those who drink other alcoholic beverages, but proper risk functions were not estimated.¹²

We assessed the effects of different types of alcoholic drinks on the risk of death from all causes and from cardiovascular and cerebrovascular disease, while taking into account sex, age, socioeconomic conditions, smoking habits, and body mass index.

Subjects and methods

POPULATION

The study population comprised a random, age stratified sample of 19 698 out of 87 172 individuals aged 20 or more living in the Østerbro area of Copenhagen in 1976. During 1976-8 the Copenhagen city heart study examined by questionnaire 14 223 subjects (6511 men, 7712 women; response rate 72.2%). A detailed description of the study procedure has been published previously.¹³ The present analysis concerns a sample of 13 285 subjects (6051 men, 7234 women) aged 30-79.

EXAMINATION PROCEDURES

The subjects filled in a self administered questionnaire about various issues related to health, including alcohol intake, smoking habits, school education, and household income. Weight in light clothes and height without shoes were measured, and from these the body mass index (weight(kg)/(height(m)²)) was calculated.

Alcohol intake—The subjects were asked in multiple choice form whether they drank beer (bottles), wine (glasses), or spirits (units) "hardly ever/never," "monthly," "weekly," or "daily." If a subject drank alcohol daily then he or she had to report the average number of drinks of each type taken each day. One bottle of beer contains 12 g of alcohol, and this may be considered the average for the other types of drinks. If a subject abstained from drinking alcohol because he or she was receiving treatment (for example, disulfiram) or because of dipsomania (n=17) then this was noted, and the subject was excluded from the analysis.

Smoking habits—The subjects reported if they had never smoked, were former smokers, or current smokers. Former smokers were divided into groups according to duration (in years) of non-smoking, and current smokers according to amount of tobacco (in grams smoked each day). For the analysis five groups were defined: subjects who had never smoked; former smokers who had not smoked for more than five years; former smokers who had not smoked for five years or less; smokers of 1-19 g tobacco daily; smokers of more than 19 g daily.

FOLLOW UP

We followed the survival of the population sample until 1 January 1988, using the unique person identification number in the national central person register. We obtained causes of death, as recorded on death certificates, from the National Board of Health. Death from cardiovascular and cerebrovascular disease was defined according to the *International Classification of Diseases*, eighth revision, as codes 410.0 to 445.9. Each subject was observed from their initial examination (1976-8) until 1 January 1988, or until death (2229), disappearance (one), or emigration (30) if these occurred earlier.

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STATISTICAL ANALYSIS

Data were analysed with multiple Poisson regression models.²⁰ The mortality was assumed to be constant within each 10 year age interval. A subject who was observed in more than one age group contributed with corresponding observation time in both groups. Further details of the model analysis have been described previously.⁷

The model included subjects' age, sex, and intakes of beer, wine, and spirits and the first order interactions between these variables. Each type of alcoholic drink was classified as never drunk; drunk monthly; drunk weekly; one to two drinks a day; or three to five drinks a day. Subjects having more than five drinks a day of beer, wine, or spirits were excluded from this analysis because there were too few cases in some of the groups (see table I). Exclusion of subjects who had more than five drinks a day of one type of alcoholic drink meant that some subjects who had less than five drinks daily of the other types were excluded. In this model first order interactions were tested. The criterion for inclusion was significance at the 5% level. We added the following covariates to this reduced model: smoking, body mass index, school education, and income. These were added one by one for separate testing.

In another model, the risk of dying as a function of reported intake at baseline was estimated separately for the first six years and the second six years. For detailed description of the statistical methods, we refer to the recently published statistical appendix.⁷

Results

Table I shows the distribution of subjects according to the different types of alcoholic drink. Some subjects who never drank alcohol of one type drank one or two of the others. Thus 1116 subjects never drank beer but did drink wine or spirits, 1245 never drank wine but did drink beer or spirits, and 860 never drank spirits but did drink beer or wine. In all, 5858 subjects drank both wine and beer, 5408 drank both spirits and wine, and 4629 drank both spirits and beer. Only 77 subjects drank wine, beer, and spirits every day. A total of 2120 women and 625 men never drank any alcohol.

During follow up 831 women and 1398 men died; 354 of the women and 765 of the men died from

cardiovascular or cerebrovascular disease. The number of deaths analysed was reduced by 275 owing to exclusion of subjects who had more than five drinks of one type of alcohol. In the models for all cause mortality and mortality from cardiovascular or cerebrovascular disease including age, sex, smoking, and intake of beer, wine, or spirits all first order interactions—except interaction between age and sex—were not significant. Thus intake of beer, wine, or spirits appeared independently associated with mortality in this population. Estimates are reported from the models including all three types of alcoholic drinks.

Smoking was a confounder as the subjects who drank any type of alcoholic drink were more likely to smoke than those who did not drink at all, and smoking influenced mortality. The reported results are therefore controlled for smoking. We found no significant effect, however, of education, income, or body mass index on the relation between any of the types of drink and mortality.

WINE INTAKE AND MORTALITY

The wine drinkers experienced a significantly lower all cause mortality than the subjects who drank no wine. When relative risk was set at 1.00 for subjects who never drank wine the risk steadily decreased to 0.51 (95% confidence interval 0.32 to 0.81) for subjects who drank three to five glasses of wine a day (figure). The risk of death from cardiovascular and cerebrovascular disease declined from 1.00 for non-drinkers to 0.4 (0.24 to 0.80) for drinkers of three to five glasses of wine a day (table II). With regard to causes of death other than cardiovascular and cerebrovascular disease, drinking wine implied a decreased risk compared with not drinking wine (table II).

BEER INTAKE AND MORTALITY

We found no trend in all cause mortality in relation to the subjects who drank beer daily compared with the subjects who never drank beer, but we found a slight, significant decrease in risk among those who drank beer monthly. The relative risk was 0.96 (0.86 to 1.07) for subjects who drank beer weekly and 0.95 (0.83 to 1.09) for those who drank three to five beers a day (figure). With respect to death from cardiovascular and cerebrovascular disease, intake of three to five

TABLE I—Distribution of alcohol intake and number of deaths from all causes and from cardiovascular and cerebrovascular disease in 13 285 subjects aged 30-79 years, by sex and type of alcoholic drink

Alcoholic drink	Men			Women		
	Total No of persons	Total No of deaths	Deaths from cardiovascular and cerebrovascular disease	Total No of persons	Total No of deaths	Deaths from cardiovascular and cerebrovascular disease
Beer:						
Never	987	286	164	3738	499	228
Monthly	1123	221	136	1931	161	61
Weekly	1521	293	165	1123	114	41
Daily:						
One to two drinks	1126	288	161	378	50	21
Three to five drinks	881	200	90	54	6	3
More than six drinks	413	110	47	10	1	0
Wine:						
Never	2553	780	421	3037	473	234
Monthly	2304	433	241	2820	251	91
Weekly	930	134	72	1046	84	21
Daily:						
One to two drinks	195	42	24	256	19	7
Three to five drinks	62	2	0	65	4	1
More than six drinks	7	1	1	0	0	0
Spirits:						
Never	2305	617	336	4062	523	226
Monthly	2241	385	216	2193	108	76
Weekly	992	219	120	688	66	23
Daily:						
One to two drinks	361	118	65	254	40	25
Three to five drinks	152	56	28	37	4	1
More than six drinks	0	0	0	0	0	0
Total	6051	1398	765	7234	831	354

TABLE II—Relative risk (95% confidence interval) of death from coronary heart disease and from other causes, as function of reported intake of alcoholic drinks by 13 285 subjects aged 30-79 years

Frequency of drinking	Beer intake	Wine intake	Spirits intake
<i>Death from cardiovascular and cerebrovascular disease:</i>			
Never	1.00 (reference)	1.00 (reference)	1.00 (reference)
Monthly	0.79 (0.69 to 0.91)	0.69 (0.62 to 0.77)	0.95 (0.85 to 1.06)
Weekly	0.87 (0.75 to 0.99)	0.53 (0.45 to 0.63)	1.08 (0.93 to 1.26)
Daily:			
One to two drinks	0.79 (0.68 to 0.91)	0.47 (0.35 to 0.62)	1.16 (0.98 to 1.39)
Three to five drinks	0.72 (0.61 to 0.88)	0.44 (0.24 to 0.80)	1.35 (1.00 to 1.83)
<i>Other causes of death:</i>			
Never	1.00 (reference)	1.00 (reference)	1.00 (reference)
Monthly	0.82 (0.71 to 0.95)	0.86 (0.77 to 0.97)	0.80 (0.71 to 0.91)
Weekly	1.02 (0.89 to 1.18)	0.75 (0.64 to 0.88)	0.92 (0.79 to 1.08)
Daily:			
One to two drinks	0.96 (0.84 to 1.15)	0.80 (0.62 to 1.03)	0.81 (0.65 to 0.99)
Three to five drinks	1.22 (1.02 to 1.45)	0.50 (0.27 to 0.91)	1.36 (1.01 to 1.84)

beers a day implied a reduction in risk of 0.72 (0.61 to 0.88) compared with not drinking beer (Table II).

SPIRITS INTAKE AND MORTALITY

As with wine and beer, monthly intake of spirits was associated with a slight, significant decrease in risk, but drinking spirits weekly or once or twice a day did not influence all cause mortality compared with not drinking spirits at all. An intake of three to five drinks a day, however, was associated with a significantly increased risk of 1.34 (1.05 to 1.71) compared with not drinking spirits (figure). The risk function between intake of spirits and mortality from cardiovascular and cerebrovascular disease showed the same pattern as the one for all cause mortality (table II).

STABILITY OF RISK FUNCTIONS

The analysis was repeated with the observation time divided into the first and second six year periods. The increased mortality among subjects who did not drink wine compared with those who drank wine daily persisted in the second period.

Discussion

We clearly distinguished the different types of alcoholic drinks with respect to their relation to all cause mortality and mortality from cardiovascular and cerebrovascular disease. We found that the descending part of the U shaped curve describing the relation between alcohol and mortality could be explained almost exclusively by the effect of drinking wine. Furthermore, our study showed that the first part of the ascending curve—the increasing mortality among heavy drinkers—may be explained primarily by the effect of drinking spirits.

VALIDITY OF REPORTED INTAKE

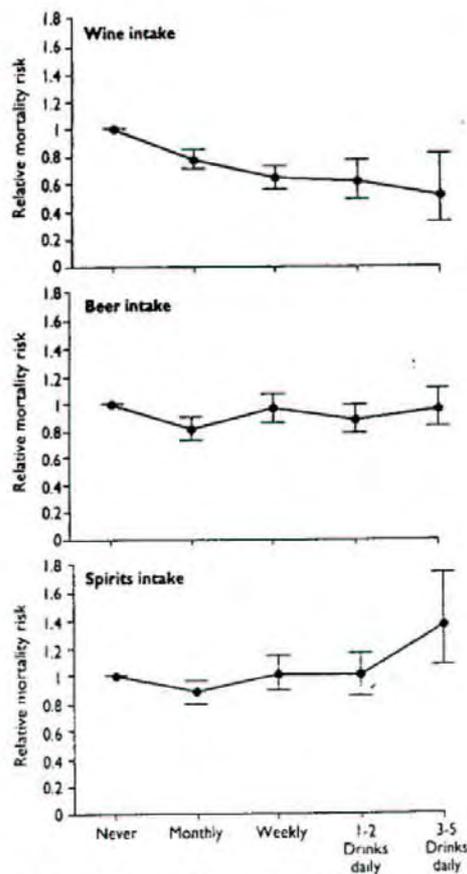
The validity of self reported alcohol intake may be questioned, but no other available methods (such as sales reports, collateral information) have proved to be more valid.²¹ We have no reason to believe that drinkers of one type of alcoholic drink report their intake differently from drinkers of other types. If underreporting takes place, as is commonly assumed, then this would lower the estimated health damaging effect of spirits, moving the "true" threshold of hazardous drinking to the right. On the other hand, the estimated beneficial effect of wine, if it were related to an even greater intake, would appear even more striking. Thus if underreporting takes place the estimated beneficial effect of, say, three to five glasses of wine a day, would relate to a greater intake. The results may therefore be considered conservative estimates of the true differences in the effects of the different drinks.

We found no excess mortality among subjects who did not drink beer or spirits. Of course, the presence of sick non-drinkers could mask a possible beneficial

effect of not drinking beer or spirits. For wine drinking, the presence of sick non-drinkers would contribute to the inverse risk function. We also analysed, however, the mortality risk function in the first and second six years of follow up and found no changes between the two periods. Furthermore, only a fraction of non-drinkers of one of the three types of drink were also non-drinkers of the other two types. Sick non-drinkers are probably not, therefore, imposing an important bias on the results.

ANALYSES OF EFFECTS OF TYPE OF ALCOHOLIC DRINKS

The descending part of the U shaped curve describing the relation between alcohol and mortality has been attributed to a protective effect of ethanol, but the question of type of alcoholic drink has been addressed rather superficially. Some studies have mentioned having controlled for, or by other means included, the type of drink in the analysis—with no or little difference in effect on mortality.¹¹⁻¹⁴ Others have addressed the question specifically, but may have had too small a material or too little variance in intake of the different drinks to detect differences.^{11,12} An ecological study reported that it is apparently an advantage, with respect to coronary heart disease, to live in a country of wine drinkers rather than in a country of drinkers of beer or spirits.¹⁰ This finding was supported by Klatsky and Armstrong, who indicated that people who preferred wine may have a lower risk of dying from coronary heart disease.¹⁴ Klatsky and Armstrong grouped subjects according to preference of a given type of drink. This might have led to loss of information as well as misclassification because



Relative risk, with confidence interval, of mortality in relation to intake of wine, beer, and spirits. The risk is set at 1.00 for subjects who never drink.

many subjects presumably drank two or all three types of drink. Klatsky and Armstrong's method of classification might also have hindered comparison between drinkers of different types of drinks and the group of non-drinkers of each type of drink.

An important difference between the studies mentioned above and our study is that we specifically addressed not only the question of separate effects of the different types of alcoholic drinks on mortality but also the question of possible interactions between the types of alcoholic drinks on mortality. A remarkable methodological advantage in conducting the study in Denmark is that the Danes, in contrast with people in countries with a more uniform pattern of drinking or a culture of non-drinking, drink some of all types of alcoholic drink, which enabled us to create the five intake groups for wine, beer, and spirits. Drinking one type of alcohol will affect the pattern of drinking another. The statistical model should therefore include all three types of alcohol. We found no significant interaction between the three types of alcoholic drinks and could therefore provide estimates of independent effect of each type (ranging from never drinking to having three to five drinks daily of that type) on mortality.

The left limb of the U shaped curve has been the subject of much debate. A prevailing belief is that the non-drinkers constitute a mixture of former heavy drinkers, drinkers who underreport, sick people who have stopped drinking, and people with a particularly unhealthy lifestyle apart from not drinking. As seen in table 1, for each of the three types of drink, quite a large group of subjects were non-drinkers. Patients taking disulfiram and patients with dipsomania were excluded from the analysis. The influence of type of drink on mortality seemed to show that the drinks were statistically independent of each other, and the difference persisted throughout the 12 years of follow up. Smoking is known to confound the estimates of the effect of alcohol intake on mortality,¹ and we therefore controlled for this factor. We found that wine intake was positively correlated with social class variables (data not shown), but the protective effect of wine, with regard to mortality, was not significantly weakened when we controlled for this factor. Sex, age, and body mass index did not confound our results either. Residual confounding by some of the included variables or by other, unknown confounders may none the less have occurred. To explain the effect, however, such confounders would have to exhibit a peculiar distribution across the range of intakes of the three types of drinks. If a variable, such as physical activity, were a confounder (assuming that physical activity reduces mortality) then there should be an increase in physical activity by increased wine intake, decreased activity by increased spirits intake, and no change in relation to beer. Moreover, the effect of any such potential confounder should be very strong to explain our findings.

POSSIBLE PROTECTIVE FACTORS IN WINE APART FROM ETHANOL

The results strongly suggest that, in addition to the common effect of ethanol, there are—within the studied range of drinking—different factors influencing health in the three types of drink. Specifically, the results raise the question of what might be the protective agent in wine or the damaging factors in beer and spirits apart from ethanol. The decreased mortality in cardiovascular and cerebrovascular disease among beer drinkers may reflect a common effect of ethanol on high density lipoprotein or fibrinolytic factors.² Furthermore, an inverse relation has been found between alcohol intake and platelet aggregability,³ and, in agreement with our results, this

Key messages

- The U shaped relation between alcohol intake and all cause mortality has been ascribed to the beneficial and harmful effects of ethanol
- Alcohol in small doses is assumed to protect against ischaemic heart disease
- In this study drinkers of three to five glasses of wine a day had half the risk of dying as those who never drank wine
- Beer and spirit drinkers experienced no such advantages, and three to five drinks of spirits a day was associated with increased mortality
- The U shaped risk function may be a result of a combination of the risk functions of wine, beer, and spirits

relation has been shown to be even stronger for wine.⁴ Our finding, that only wine drinking clearly reduces both the risk of dying from cardiovascular and cerebrovascular disease and the risk of dying from other causes, suggests that other more broadly acting factors in wine may be present. Antioxidants and flavonoids, which are presumed to prevent both coronary heart disease and some cancers,^{5,6} may be present in red wine. It has also been suggested that tannin and other phenolic compounds in red wine may have a protective effect.^{7,8}

The number of drinks indicating the lowest risk on the alcohol-mortality risk function, as well as the thresholds of safe drinking, differs from study to study, and this variation may be due to differences between countries with regard to type of drinks consumed.

During the past 15 years mortality from coronary heart disease has declined by about 30% in Denmark.⁹ This decrease cannot be ascribed to a rise in alcohol intake, which has been more or less stable during that period. On the other hand, with the opening of the European market, drinking patterns have changed quite dramatically in favour of wine drinking. In 1975 wine contributed to 17.3% of the total alcohol intake, rising to 30.2% in 1992,¹⁰ which, in accordance with our findings, may have contributed to the decline in death from coronary heart disease.

In conclusion, our study shows that light and moderate wine drinking, in contrast with beer and spirits drinking, is associated with a strong dose dependent decrease in all cause mortality, attributable to a decrease in mortality from cardiovascular and cerebrovascular disease as well as from other causes. The biological mechanism behind the different effects of the three types of drinks needs further research.

This study was financially supported by the Danish National Board of Health. We thank V Munk, B Bredeesen, M Appleyard, and the staff of the Copenhagen city heart study and the Institute of Preventive Medicine for their help.

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5 Klatsky AL, Armstrong MA, Friedman GD. Alcohol and mortality. *Ann Intern Med* 1977;86:64-54.

7.4.4 SIR RICHARD DOLL



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Clinical review

One for the heart

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Introduction

"An ounce of whisky, please Sister," or was it half an ounce or two ounces? I cannot remember now, but I know that I prescribed some tentatively after having sought the ward sister's opinion when I was called to my first patient with lobar pneumonia as a newly qualified house physician in 1937.

There was nothing else to prescribe unless oxygen was needed. In the 19th century alcohol had been prescribed for many debilitating conditions, but its medicinal use was dying out except for people who were terminally ill, and there was certainly no idea that it might be of any use in preventing disease. Some people must have seen Pearl's report in 1926 of a U shaped relation between mortality and the consumption of alcoholic beverages, but it was totally ignored by the medical profession.¹

The situation began to change soon after the second world war, with reports of an unusually low prevalence of coronary artery disease in patients found to have cirrhotic livers at necropsy.^{2,3} Necropsy series were, however, subject to many biases, and these reports excited little interest. Even in the 1970s, when case-control studies of people with and without myocardial infarcts⁴ and cohort studies of people with different personal characteristics⁵ began to report a reduced relative risk of myocardial infarction in people who drank small or moderate amounts of alcohol in comparison with non-drinkers, scant attention was paid to them. The belief that alcohol was bad for health was so ingrained that the idea that small amounts might be good for you was hard to envisage, and it is only in the past 10 years that cardiologists and specialists in preventive medicine have begun to take it seriously.

Prophylactic value of alcoholic beverages

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The evidence for a beneficial effect is now massive.^{3 6 7} It includes not only a reduction of about a third in the risk of vascular disease but also, because vascular disease is such an important cause of death in middle and old age, a reduction in total mortality. That the reduction observed reflects a true causal relation was resisted by some specialists for many years. In many studies lifelong non-drinkers and ex-drinkers had been classed together, and Shaper et al argued that the higher mortality in non-drinkers than in light drinkers was chiefly because some who were ill, and hence at greater risk of death, had given up drinking specifically because of their illness.⁸

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Summary points

The consumption of small and moderate amounts of alcohol reduces mortality from vascular disease by about a third

The effect on a person's risk of death depends on the relative risks of vascular disease and of the causes of death that are aggravated by alcohol

In middle aged and elderly men in Britain the beneficial effects on total mortality outweigh the harmful effects up to at least four units a day, in women up to somewhat less

The beneficial effect is due to the content of ethanol, not to the characteristics of any particular type of drink

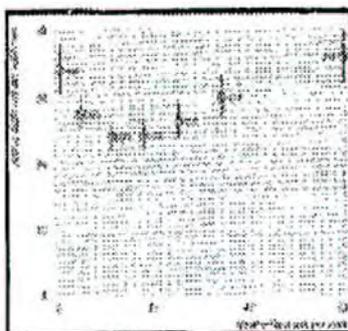
This explanation was not tenable, however, because studies that distinguished between lifelong non-drinkers and ex-drinkers also showed J shaped or U shaped mortality curves for vascular disease and for total mortality. An example is provided by the observations by Klatsky et al on 20 000 men and women who were examined in a prepaid health plan in California and were subsequently followed up for eight years.⁹ The results are summarised in table 1. Similar relations have also been found in men and women without any major disease—in the American Cancer Society's study of 490 000 Americans aged 30 years and over^{10, 11} and in our study of 12 000 middle aged and elderly British doctors, 5000 of whom had specifically stated that they were free from any form of vascular disease before follow up began.¹²

View this table: [\[in this window\]](#) [\[in a new window\]](#) **Table 1** Relative risks of death in drinkers compared with risk in lifelong abstainers after adjustment for age, sex, smoking, and nine other "risk factors" (after Klatsky et al⁹)

The suggestion by Shaper that the reduced mortality from ischaemic heart disease was due to confounding was also unsatisfactory,¹³ as most factors that are known to increase the risk of the disease are either independent of alcohol consumption or positively associated with it and so make the observed effect seem less than it really is—for example, smoking, a high fat diet with little fruit and green vegetables, raised blood pressure, and a high body mass index.¹⁴ Socioeconomic factors, which could have confounded the results of some studies, cannot have done so to any material extent in the comparatively homogeneous sample of British doctors and, although physical activity might have done so to some extent, it could account for only a small part of the observed relation.¹²

Some direct beneficial effect is, moreover, physiologically plausible, as is shown later, and the observed relation with vascular disease is most economically explained as one of cause and effect—a conclusion that has been accepted by the independent group of scientists that was commissioned by the European Office of the World Health Organisation to prepare a report on alcohol and public policy.¹⁵

The relation with total mortality in middle and old age is illustrated by the observations in the British doctors' study in the figure.¹² The increasing mortality with the amount drunk in the ascending limb of the curve after standardisation for smoking is contributed to by many causes that have long been known to be attributable to alcohol or augmented by it—that is, a few deaths from alcoholic psychosis and dependence and many more from hepatic cirrhosis, cancers of the oral cavity, pharynx, oesophagus, larynx, and liver, some cardiomyopathies, haemorrhagic stroke, and accidents and suicide.



Mortality standardised for age and smoking according to number of units of alcohol usually drunk per week in British doctors responding to questionnaire in 1978 and followed up to 1991.¹² One unit of alcohol is half a pint of beer, glass of wine, or single measure of spirits. Values are numbers of deaths, vertical lines with 95% confidence intervals of mortality.

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The decreasing limb, in contrast, results chiefly from the relation with two diseases that are so common in the latter half of life that any reduction in them has a major effect on total mortality—that is, ischaemic heart disease and cerebral thrombosis. There may, however, be some contribution from other diseases that have not been adequately studied. These include several other vascular diseases, cholelithiasis,^{16 17} and non-insulin dependent diabetes mellitus,¹⁸ which Kiechl et al suggest may be reduced in incidence

because alcohol improves insulin sensitivity.¹⁹

Many other questions also remain to be answered, some of which are socially important. One is the level of consumption at which the minimum mortality is obtained; another is the variation in the balance of overall risk with sex and age; and a third is the difference, if any, between the effects of the different types of alcoholic beverage—beer, spirits, and wine.

Optimal consumption

Estimates of the effect of different quantities of alcohol are particularly difficult to make, principally because habits vary and people find it difficult to describe accurately their pattern of drinking and how much they drink over any prolonged period. Heavy drinkers are likely to underestimate the amount, but so are moderate and light drinkers in societies in which the consumption of alcohol may be

disapproved of, as in parts of the United States. In some surveys consumption has underestimated sales figures by as much as 30-80%.^{20 21} Furthermore, the official definition of a unit of consumption varies from one country to another: from as little as 6.3 g of ethanol in spirits in Austria to as much as 19.75 g in Japan. British units are uniformly defined as 8 g, which corresponds to the amount of ethanol in half a pint of beer (3.5% of alcohol by volume), but this is certainly less than most people would expect to get in a glass of wine and much less than in the tot of spirits that they would pour for themselves at home. The US unit, in contrast, is variously defined as 12 g or 14 g.

It is not surprising, therefore, that the minimum mortality has been found to occur at different levels of consumption in different studies. When Poikolainen reviewed 29 studies he found that the consumption associated with minimum mortality varied from less than one drink a day to five, with one being the most frequently reported.⁷ Over half of the studies, however, were American and consequently the amounts drunk were probably underestimated. As, moreover, the American units are some 50% larger than the British, it may be that in terms of British drinks the finding in the study of elderly British doctors that the minimum mortality was associated with two or three drinks a day provides a more accurate picture

Variation with age and sex

Some of the variation reported could, however, result from differences in the age distribution of the populations studied, for the ratio of the mortality from conditions that are prevented by alcohol and that from conditions that are made more common by it varies greatly with age. This is illustrated by the death rates from ischaemic heart disease and external injury and poisoning recorded in the

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developed countries with market economies in 1990. The ratios of these rates are shown for four age groups in table 2.²² Alcohol, it would seem, is unlikely to produce any reduction in total mortality under about 45 years of age. The contrast is illustrated by the results of two studies, one of a cohort of young conscripts in the Swedish army, which showed a steadily increasing mortality with amount drunk at all levels of consumption²³ and one of Massachusetts men aged 65 years and over,²⁴ which showed a progressive reduction in mortality up to about three American or four British units a day.

Table 2 Ratios of deaths from ischaemic heart disease to deaths from violence in developed countries with market economies by sex and age in 1990 (after Murray and Lopez²²)
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Plato, it seems, knew something that was subsequently forgotten for 2000 years. According to Montaigne,²⁵ he forbade the use of wine in people under 18 years of age and intoxication under 40 years. "But," I quote, "after they have passed that age he orders them to take a pleasure in it ... intoxication being, he says ... calculated to put heart into the elderly."

Sex, too, affects the pattern, but quantitatively and not qualitatively as age does. For women in middle and old age, the optimum level of consumption may be less than that for men, not only because of their smaller size but also because of their lesser risk of heart disease, greater susceptibility to liver damage, and high risk of breast cancer, which is increased by about 10% for each additional unit drunk on average per day.²⁶ In compensation, however, women are less prone to death from external causes, so that they continue to have overall benefit with moderate consumption.

► Variation with type of drink

There remains the question of the type of drink that produces benefit. The idea that it might differ with different types arose from an attempt by Cochrane and his colleagues of the Medical Research Council's epidemiology unit to dissect out the social and environmental factors that determined mortality in 18 developed countries.^{27 28} Their findings for ischaemic heart disease at ages 55 to 64 are shown in table 3. The strong negative correlation with the consumption of alcohol was independent of, and almost as strong as, the positive correlation with the predictive index for the effect of different combinations of dietary fat given by Keys's equation.²⁹ The correlation with alcohol was not surprising, but it was surprising that it should have been entirely explained by the correlation with the consumption of wine ($r=-0.70$ for men and -0.61 for women).

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Table 3 Correlations between certain variables and mortality from ischaemic heart disease in men and women aged 55-64 years (after St Leger et al²⁸)

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Cochrane and his colleagues were well aware of the potential pitfalls of ecological studies and were restrained in their conclusions. If, however, **wine** had a specific protective effect it might, they thought, be due to constituents other than alcohol, and they suggested that the next step would be "to examine the effect of alcohol and, in particular, **wine** on blood lipids, platelet aggregation, and such other blood constituents as may plausibly be involved in the pathogenesis of atheroma"²⁸ Then, if the results were sufficiently promising they would hope to see the conduct of randomised controlled trials of the preventive or therapeutic effects of moderate **wine** consumption. Even such a staunch advocate of randomisation as Cochrane recognised, however, that the conduct of such trials would (I quote) "have severe ethical and practical difficulties" and they have never been carried out.²⁸ If research led to the conclusion that **wine** contained a specific constituent protective against ischaemic heart disease Cochrane thought that it would be "almost a sacrilege" to isolate the effective constituent, for the medicine was already in a highly palatable form.²⁸

In the event, many subsequent studies produced similar results. A few, however, showed the greatest effect with beer or spirits, while others showed similar effects with all three types.³⁰⁻³¹ Experiments have shown that ethanol increases the blood concentration of both high density lipoprotein cholesterol and apolipoproteins A1 and A2 and slightly reduces the level of low density lipoprotein cholesterol,^{7, 32} reduces the aggregability of blood platelets,³³ decreases the concentration of fibrinogen,³⁴ and increases the activity of the fibrinolytic system,³⁵ all of which would tend to reduce the risk of myocardial infarction and vascular disease in general. In contrast with these benefits, large amounts of ethanol increase blood pressure, but there seems to be a threshold for this harmful effect at about three British units a day.¹⁴ There is no experimental evidence to show that any particular alcoholic beverage has a more beneficial effect on blood constituents or blood pressure than the equivalent amount of ethanol. And the idea that antioxidants or flavonoids or any other specific constituent of **wine** provides an additional benefit is entirely speculative.

That **wine** should have been associated with greater benefit than beer or spirits in ecological studies and in many case control and cohort studies can be explained by differences in the pattern of drinking. The effects of ethanol on blood constituents that affect the risk of thrombosis last less than 24 hours, and Jackson et al have found that this is reflected clinically in an association between the risk of myocardial infarction and the consumption of alcohol within 24 hours, irrespective of the number of drinks a week.³⁷ A similar finding was obtained in New South Wales by McElduff and Dobson, who also observed that greater benefit was obtained when comparatively small amounts were taken regularly, which is the way **wine** is drunk in many countries, than when the same total amount was taken one or two days a week, in the way that beer and spirits often tend to be drunk.³⁸

There is no specific benefit associated with one type of beverage, but the benefit derives from the content of ethanol and the extra benefit associated with **wine** in some studies can be accounted for by differences in the pattern of drinking.

Implications for public health

The formulation of public policy is complicated by the conclusion that a certain amount of alcohol can have a beneficial effect on personal health, decreasing mortality from some major conditions to such an extent that in middle and old age it more than compensates for an increased mortality from others. Previously, policy could, and generally did, aim to discourage drinking altogether. Policies aimed solely at reducing heavy drinking had little success, and the most effective means of reducing the social and medical effects of alcohol misuse was to reduce the average amount consumed by the population as a whole, something that could be readily achieved by increasing taxation.

Precisely what public health policy should now be will not be the same everywhere, for the importance of vascular thrombosis, which may be alleviated by alcohol, and of trauma, which may be increased by it, varies enormously not only with age and sex but also from one country to another. This is shown in table 4, which gives for different parts of the world and for each sex the variation in the ratio of the number of deaths attributed to ischaemic heart disease and the number attributed to violence, omitting only deaths attributed to the operation of war. The ratio varies eightfold from the market economies of the developed world and the Middle East to China and the countries of Africa south of the Sahara, from 4.1:1 to 0.5:1 in men and from 11.5:1 to 1.7:1 in women. The balance of benefit and harm from the consumption of alcohol must therefore be different in different countries, and policies that might be good in one country could be disastrous in another. The harm that may be done by the relaxation of controls in unstable social circumstances is illustrated by the increase in total mortality in Russia between 1987 and 1994, which is most plausibly explained by the increase in the consumption of alcohol, aggravated, perhaps, by the more toxic effects associated with alcohol that is produced illicitly³².

Table 4 Ratios of deaths from ischaemic heart disease to deaths from violence (excluding war) in different populations by sex in 1990 (after Murray and Lopez²²)
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In Britain, where the effects on overall mortality for a person who drinks alcohol is in later life strongly in favour of benefit, other factors also have to be taken into account, such as the social effects of

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intoxication and chronic alcoholism and the effect of drinking even quite small amounts on the handling of vehicles and machinery. In our study of British doctors we examined the effect of the consumption of alcohol only on their own mortality and not on that of their patients. I have not attempted to quantify such other effects and it would not, therefore, be appropriate to suggest how national policy in this country should now be formulated in its entirety.



According to Montaigne, intoxication is "calculated to put heart into the elderly"

ZOF: FIGG

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People should be treated as adults and should be told the facts. These still need to be refined in detail, but in broad outline they are quite clear: in middle and old age some small amount of alcohol within the range of one to four drinks each day reduces the risk of premature death, irrespective of the medium in which it is taken.

✦ Acknowledgements

I thank Groen College for having stimulated me to prepare a lecture in memory of Archie Cochrane, on which this article is largely based; a version of the lecture was also included in one chapter of *Non-Random Reflections on Health Services Research*,³¹ and I also thank Professor Richard Peto for comments on the first draft.

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Table 1 Relative risks of death in drinkers compared with risk in lifelong abstainers after adjustment for age, sex, smoking, and nine other "risk factors"(after Klatsky et al⁹)

Drinking category	Coronary artery disease	Cerebrovascular disease	All causes (2430 deaths)
Lifelong abstainers	1.0	1.0	1.0
Ex-drinkers	1.0	1.0	1.1
Drinkers (No of drinks):			
>1 per month (occasional)	0.8	0.8	0.9
1-2 per day	0.6	0.8	0.9
3-5 per day	0.6	0.7	1.0
≥6 per day	0.8	1.4	1.4

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Table 2 Ratios of deaths from ischaemic heart disease to deaths from violence in developed countries with market economies by sex and age in 1990 (after Murray and Lopez²²)

Age (years)	Men	Women
30-44	0.24	0.16
45-59	1.8	1.3
60-69	5.7	5.2
≥70	9.0	9.9

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Table 3 Correlations between certain variables and mortality from ischaemic heart disease in men and women aged 55-64 years (after St Leger et al²⁸)

Variable	Men	Women
Gross national product	-0.17	-0.26
Cigarettes	0.28	0.44
Saturated fat	0.64	0.62
Keys's predictive fat index ²⁹	0.70	0.69
Alcohol	-0.70	-0.58
Wine	-0.70	-0.61
Beer	0.23	0.31
Spirits	-0.26	-0.32

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Table 4 Ratios of deaths from ischaemic heart disease to deaths from violence (excluding war) in different populations by sex in 1990 (after Murray and Lopez²²)

Population	Men	Women
Developed countries		
Market economies	4.0	7.1
Former socialist economies	2.4	7.9
India	3.0	4.1
China	1.2	1.7
Other Asia and islands	1.5	4.1
Middle East	4.1	11.5
Latin America	1.3	4.4
Sub-Saharan Africa	0.5	2.6
World	2.1	4.4

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Mortality in relation to consumption of alcohol: 13 years' observations on male British doctors

Richard Doll, Richard Peto, Emma Hall, Keith Wheatley, Richard Gray

Abstract

Objective—To assess the risk of death associated with various patterns of alcohol consumption.

Design—Prospective study of mortality in relation to alcohol drinking habits in 1978, with causes of death sought over the next 13 years (to 1991).

Subjects—12 321 British male doctors born between 1900 and 1930 (mean 1916) who replied to a postal questionnaire in 1978. Those written to in 1978 were the survivors of a long running prospective study of the effects of smoking that had begun in 1951 and was still continuing.

Results—Men were divided on the basis of their response to the 1978 questionnaire into two groups according to whether or not they had ever had any type of vascular disease, diabetes, or "life threatening disease" and into seven groups according to the amount of alcohol they drank. By 1991 almost a third had died. All statistical analyses of mortality were standardised for age, calendar year, and smoking habit. There was a U shaped relation between all cause mortality and the average amount of alcohol reportedly drunk; those who reported drinking 8-14 units of alcohol a week (corresponding to an average of one to two units a day) had the lowest risks. The causes of death were grouped into three main categories: "alcohol augmented" causes (6% of all deaths: cirrhosis, liver cancer, upper aerodigestive (mouth, oesophagus, larynx, and pharynx) cancer, alcoholism, poisoning, or injury), ischaemic heart disease (33% of all deaths), and other causes. The few deaths from alcohol augmented causes showed, at least among regular drinkers, a progressive trend, with the risk increasing with dose. In contrast, the many deaths from ischaemic heart disease showed no significant trend among regular drinkers, but there were significantly lower rates in regular drinkers than in non-drinkers. The aggregate of all other causes showed a U shaped dose-response relation similar to that for all cause mortality. Similar differences persisted irrespective of a history of previous disease, age (under 75 or 75 and older), and period of follow up (first five and last eight years).

Some, but apparently not much, of the excess mortality in non-drinkers could be attributed to the inclusion among them of a small proportion of former drinkers.

Conclusion—The consumption of alcohol appeared to reduce the risk of ischaemic heart disease, largely irrespective of amount. Among regular drinkers mortality from all causes combined increased progressively with amount drunk above 21 units a week. Among British men in middle or older age the consumption of an average of one or two units of alcohol a day is associated with significantly lower all cause mortality than is the consumption of no alcohol, or the consumption of substantial amounts. Above about three units (two American units) of alcohol a day, progressively greater levels of consumption are associated with progressively higher all cause mortality.

Introduction

It has long been recognised that alcohol can cause death acutely, from poisoning, accidents, or violence, and that long term use can increase the incidence of cirrhosis and of certain types of cancer. In recent years, however, evidence has emerged that the regular consumption of small to moderate amounts of alcohol can also reduce the risk of ischaemic heart disease.¹ We now need reasonably quantitative information about both the increases and the decreases in mortality that are produced by various patterns of alcohol consumption and about the ways in which these vary with sex, age, and the existence of other predisposing or protective factors.

Reliable quantitative evidence is, however, difficult to obtain. Information about usual drinking habits has to be obtained not from direct measurement but from answers provided by individual people about themselves or their close relatives and friends. Unless the amount usually drunk is close to zero it is intrinsically difficult to describe, and the description is peculiarly liable to bias. For many people, the consumption of alcohol has emotional and moral overtones, and

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respondents may underestimate the amount drunk from feelings of guilt or, perhaps less often, exaggerate it out of bravado. Moreover, the amount that a person normally drinks may vary substantially from one period to another, affecting the relevance of answers at one time to subsequent mortality. Despite these difficulties, prospective studies of alcohol use and subsequent mortality can still yield useful results, at least among people in middle or old age with long established habits.

Information about use of alcohol and of tobacco was obtained in 1978 from a group of male British doctors born between 1900 and 1930. Their deaths during 1978-91 were then monitored and related to their replies in 1978. The chief purpose of writing to these doctors in 1978 was to ask them to volunteer for a study of the prophylactic value of aspirin against the development of ischaemic heart disease.² Alcohol use was not the central point of that study, the alcohol questions were not particularly emphasised, and in consequence the replies may have been subject to relatively little bias. The present results are of special interest in that they refer to a population that is older than in most other studies, with about half the deaths being of men in their 80s or late 70s. However, the findings may not apply quantitatively to young people or to women (in whom breast cancer is a major cause of death). Moreover, doctors differ in many ways from the general male population. Hence, although the quantitative evidence about chronic hazards may be of general relevance to other populations with high rates of ischaemic heart disease and low rates of cancers of the liver and the mouth, oesophagus, larynx, and pharynx (upper aerodigestive tract), the quantitative evidence about acute hazards may be of more limited relevance.

Subjects and methods

POPULATION STUDIED

In 1951, 34 439 male British doctors replied to a questionnaire about their smoking habits that marked the start of a prospective study of smoking and mortality that has continued for 40 years,³ with further questionnaires every few years about the smoking habits of the survivors. In 1978 a special questionnaire sought information about several other matters, including alcohol consumption. Doctors were excluded from the 1978 inquiry only if their addresses were not recorded in the 1977 *Medical Directory* as being in the United Kingdom, if they had previously been withdrawn from the study of the effects of smoking,⁴ or if they had been born before 1 January 1900. Of 18 408 questionnaires that were sent out, 13 479 (73%) were returned (after, if needed, one reminder). Of these, 89 were from doctors written to in error who did not meet our entry criteria, 45 were from doctors who died before 1 November 1978 (when follow up for the present study of alcohol began), 734 lacked replies to crucial questions about past health, and a further 290 did not contain adequate answers to the questions about alcohol. The remaining 12 321 provided the basic material for the present 13 year prospective study.

INITIAL, INTERIM, AND FINAL QUESTIONNAIRES: 1978, 1989, AND 1990-1

The 1978 questionnaire sought information about the doctors' current smoking and drinking habits and about their past health. Inquiry about drinking habits was limited to asking whether alcohol was taken "never or almost never," "less often than weekly," "in most weeks, but less often than daily," or "on most days." If the reply was at least in most weeks the respondents were further asked to say how much they drank in an

average week in terms of glasses of beer, cider, lager, etc (counting one pint as two glasses and one glass as one unit); glasses of wine, sherry, port, etc (counting a bottle of wine as seven glasses; a bottle of sherry, port, etc, as 14 glasses; and one glass as one unit); and glasses of spirits or liqueurs (counting a double measure of spirits in a public house as one glass and a full size, 0.7 litre bottle of spirits or liqueurs as 14 glasses and one such glass as two units). In the hope of avoiding misleading reports, we invited those who did not say how much they drank to say that they drank "less often than weekly." This unfortunately annoyed some doctors who did drink less often than weekly and who wrote to say so, and this means that the data for occasional drinkers cannot be used for quantitative comparisons. Of the respondents who took alcohol "never, or almost never," 43 mentioned spontaneously on their 1978 form that they had previously drunk alcohol regularly, and these men were removed from the group of non-drinkers.

Inquiry about past health in 1978 concentrated on vascular disease, as the chief object of the 1978 questionnaire was to start a study of the value of aspirin in men who had not had overt vascular disease. The doctors were therefore specifically asked at the start of the study to say if they had ever had a myocardial infarction, any other heart disease, a transient ischaemic attack, any other form of cerebral vascular disease, hypertension requiring treatment, angina, intermittent claudication, or any other vascular disease or disorder of coagulation. For non-vascular diseases the questions about medical histories were less detailed, and the participants were asked only if they had had diabetes or any other life threatening or disabling disease. Altogether, 5402 reported that they had had some previous disease (vascular or other), and 6919 reported that they had not.

In April 1989 an interim inquiry was made of the 849 doctors who were not known to have died and who had said in 1978 that they took alcohol never or almost never. They were asked whether they had ever taken alcohol "at least as often as most weeks" in the past and, if so, when they started and stopped and, when they drank most, how much they used to drink. Eight were too ill to reply, 23 were not traced, and adequate replies were received from 797 (97% of the remainder). The replies to this interim questionnaire were used not to predict individual outcome but only to characterise the average previous habits of those who had described themselves in 1978 as non-drinkers and, in particular, to determine the proportion of former drinkers.

Further inquiry about changes in drinking and smoking habits, the use of aspirin, and the occurrence of any vascular condition was made of the surviving doctors in the course of the final follow up in the early 1990s. Replies were received from 8421 (96% of those believed to have been alive at the time). These too were used not to predict outcome but to characterise the average subsequent habits of the various categories of 1978 respondents.

FOLLOW UP OF MORTALITY: 1978-91

Participants have been followed from 1 November 1978 to 31 October 1991 in several overlapping ways.⁵ On this evidence 3846 were known to have died before 1 November 1991, 8459 were believed to have been alive on that date (8220 who replied to our questionnaire after 1 November 1990 and were not found to have died before 1 November 1991 and 239 who had not replied to the questionnaire but were identified as alive after the follow up), and 16 (0.1% of the study population) were not traced and were included in the mortality analyses only until the last date that they were known to have been alive.

For nearly all deaths, including many of those that occurred abroad, information about the underlying cause was obtained from official death certificates. In a few cases, when no official information could be obtained, the cause was given in an obituary or described by a relative. In 78 the cause remained unknown, commonly because the death occurred in a country in which information about the medical cause of death was not publicly available. Causes were classified according to the *International Classification of Disease*, ninth revision (ICD-9).

STATISTICAL METHODS

Mortality was calculated separately according to the number of units of alcohol consumed a week reported in 1978: none, undefined, 1-7, 8-14, 15-21, 22-28, 29-42, or ≥ 43 . (The undefined category included those who drank sometimes but less often than weekly, those who drank but preferred not to state the weekly amount, and those who were not drinking alcohol in 1978 but spontaneously mentioned that they had previously done so.) In some analyses the last six groups were reduced to three (1-14, 15-28, and ≥ 29 units).

In each alcohol category the observed number of deaths (O) was compared with the expected number (E). These expected numbers were estimated in the usual way by multiplying the numbers of man years observed in each single year of attained age (from 50 to 91) in each of the separate 13 years of observation (from 1 November 1978 to 31 October 1991) by the mortality observed for all men irrespective of drinking habit in the same age group and period and summing over all ages and periods. To standardise for smoking, the same procedure was followed after dividing each age and period category into six smoking categories: lifelong non-smokers; current smokers of only

other current smokers; and former smokers.¹ Analyses were carried out separately for men who reported some previous relevant disease and for men who did not.

The next step in the analysis, having calculated the ratio of the observed to the expected number of deaths in a particular category of reported alcohol consumption (O/E), was to multiply it by the overall death rate per 1000 years (R). This gave a useful approximation to the standardised rate. For the sole purpose of comparing different categories of alcohol intake, the standard deviation of this quantity was about $R\sqrt{O/E}$. In our study slightly better approximations involving "floating absolute risks" have been used,⁴ and these are described in the appendix. (In principle these floating absolute risks are preferable, but in practice they gave answers that differed little from the results of the simpler approximations described above.)

Results

CORRELATION BETWEEN DRINKING AND SMOKING

Drinking and smoking habits tend to be correlated⁵ so that any estimate of the medical effects of one needs to take account of the effects of the other. Of the doctors who replied in 1978 and who therefore formed the basis of our present study, most had been lifelong non-smokers or had given up smoking before 1978. Nevertheless, a close correlation between drinking and smoking habits persisted, as shown in table I, which shows the numbers of men smoking different amounts in 1978 according to the amount drunk. Among non-drinkers the proportion of lifelong non-smokers was six times higher than among men who drank more than 42 units of alcohol a week (502/1202 (42%) v 55/825 (7%)), while the proportion smoking 25 or more cigarettes a day was three times lower (36/1202 (3%) v 79/825 (10%)).

CONSISTENCY OF SELF REPORTED DRINKING HABITS

The responses of the 8421 men who described their habits in 1978 and in 1990-1 are compared in table II. For the 81% of respondents who described their habits adequately in both questionnaires (that is, excluding all those who said they drank less than weekly, who preferred not to state the amount in either questionnaire, or who replied that they drank regularly without stating the amount in response to the 1990-1 questionnaire) the average amount drunk in 1990-1 was similar to that in 1978: about 60% reported drinking about the same, 24% reported a decreased amount, and 16% reported an increased amount. For the 707 who reported themselves in 1978 to be non-drinkers, their replies in 1990-1 indicated that only 12% were drinking alcohol weekly and only 2% had taken to drinking 15 or more units a week.

Just as a minority of the 1978 "non-drinkers" reported subsequently that they were taking some alcohol, some reported in response to the special questionnaire in 1989 that they had drunk alcohol in the past, but the proportion was again small. Of the 797 non-drinkers in 1978 who replied adequately to the 1989 questionnaire about whether they had ever drunk alcohol more than occasionally, 635 (80%) had not, 80 (10%) had drunk 1-14 units a week at some time, and only 42 (5%) said they had ever drunk more than 42 units a week. As might have been expected, those who had never drunk regularly in the past were more likely to remain non-drinkers, and only 10% of those who said in 1989 that they had never drunk regularly reported drinking in most weeks in the 1990-1 questionnaire, against 22% of the other respondents.

MORTALITY BY DRINKING HABIT AND CAUSE

In many of the analyses the deaths were grouped

TABLE I—Smoking habits of 12321 doctors in relation to alcohol consumption (responses to 1978 questionnaire). Values are numbers (percentages) of doctors

Alcohol consumption	Lifelong non-smoker	Former smoker	Current smokers				Total	
			Smoking only cigarettes (No smoked a day)			Smoking habits unspecified or unclear		
			1-14	15-24	≥ 25			
Non-drinker*	502	428	42	39	36	126	29	1202 (10)
Former drinker*	6	23	0	0	4	10	0	43 (0.3)
Less than weekly or preferred not to state	513	678	41	75	34	220	22	1584 (13)
Units consumed a week:								
1-14	1158	2223	162	183	83	846	66	4721 (38)
15-28	359	1398	110	136	97	671	23	2794 (23)
29-42	102	571	48	77	59	286	9	1152 (9)
≥ 43	55	388	27	60	79	211	5	825 (7)
Total	2695 (22)	5709 (46)	430 (3)	570 (5)	392 (3)	2370 (19)	155 (1)	12321 (100)

*Questionnaire asked only about current alcohol use, but those who reported that they used alcohol "never, or hardly ever" were divided into former drinkers and non-drinkers depending on whether or not they spontaneously mentioned past alcohol use.

TABLE II—Alcohol consumption of 8421* doctors who answered questionnaires in 1978 and 1990-1. Values are numbers (percentages) of doctors

Alcohol consumption in 1978	Alcohol consumption in 1990-1							Total
	Non-drinker	Less than weekly or preferred not to state	Weekly but no amount stated	Units consumed a week				
				1-14	15-28	29-42	≥ 43	
Non-drinker†	530	89	1	73	7	2	3	707 (8)
Former drinker†	15	1	0	4	1	1	0	22 (0.3)
Less than weekly or preferred not to state	229	419	16	349	30	9	8	1060 (13)
Units consumed a week:								
1-14	172	295	50	2292	541	82	12	3444 (41)
15-28	46	44	23	723	847	250	45	1978 (23)
29-42	21	16	4	104	261	250	76	732 (9)
≥ 43	14	10	7	31	120	154	142	478 (6)
Total	1027 (12)	874 (10)	103 (1)	3576 (42)	1807 (21)	748 (9)	286 (3)	8421 (100)

*8201 believed to be alive on 1 November 1991 and 201 who died before that date after completing the questionnaire. †See table I for definitions.

into three main categories, depending on the nature of the evidence from previous studies. The first, accounting for 6% of all deaths, comprised the "alcohol augmented" causes and included injury or poisoning (ICD-9 codes 800-999) and those diseases that have long been known to be increased by regular alcohol consumption: cancers of the oral cavity (other than the salivary glands), pharynx (other than the naso-pharynx), oesophagus, liver, and larynx (ICD-9 codes 141, 143-6, 148-9, 150, 155, and 161); alcoholic psychosis and dependence (ICD-9 codes 291 and 303); and cirrhosis of the liver (ICD-9 code 571). The second category, accounting for 33% of all deaths, comprised ischaemic heart disease (ICD-9 codes 410-414), and the final category comprised all other known causes of death.

For each of these three main categories and for all causes (including unknown), table III shows the relevance of the self reported consumption of alcohol in 1978 to the death rates over the next 13 years. In each case the analysis was subdivided according to whether or not some previous disease had been present in 1978, and, as in subsequent tables, the analyses in each line were separately standardised for age, smoking, and calendar year. Differences in these factors do not, therefore, bias comparisons within one line of men with different drinking habits, but they do bias comparisons between different populations of men. (In table III, for example, those who already had some previous disease in 1978 tended to be older than those who did not and hence had substantially higher death rates.) In each line of table III (and of all subsequent tables) tests of statistical significance are provided for the comparison of non-drinkers with those drinking 1-14 units of alcohol a week and for the trend in risk with the amounts drunk by regular drinkers.

In table III the alcohol augmented causes of death

showed a significantly positive trend with the amount of alcohol consumed a week. Ischaemic heart disease did not but showed a somewhat greater mortality among those with no alcohol use than among those drinking 1-14 units of alcohol weekly, and the proportional difference appeared to be at least as great among those without previous disease as among those with it. Finally, there was an unexpectedly strong U shaped relation between alcohol use and mortality from the aggregate of all other diseases. In general, previous disease appeared to be of little relevance to the shapes of the relations with alcohol use. In the light of this finding further analyses combined the data from the two separate analyses for men with and without previous disease so as to reduce the effects of random variation.

Table IV shows a finer subdivision of alcohol use and a finer subdivision of the other causes of death. It also excludes the men with undefined alcohol use in 1978, reducing the total number of deaths from 3846 to 3328. When the other causes of death were divided into seven specific causes or groups of causes there was evidence among those who drank regularly of a progressive increase in risk with amount drunk for cerebrovascular disease, residual vascular disease, and respiratory disease but not for cancers of the lung, large bowel, or other sites or for all residual causes. Opposite results were, however, obtained when the risk of mortality was compared between non-drinkers and light drinkers (1-14 units a week). For no cause was there a significant increase in light drinkers, but for several there was a significant reduction.

The top three lines of table IV show rates for the three main categories of death, and these, together with the results for all causes, are displayed graphically in the figure. For all causes combined (panel a), there was a U shaped curve with a minimum mortality

TABLE III—Annual mortality (per 1000 men) by alcohol consumption and history of previous disease reported in 1978 questionnaire. Values are death rates (SE) standardised for age, smoking habit, and year of death unless stated otherwise

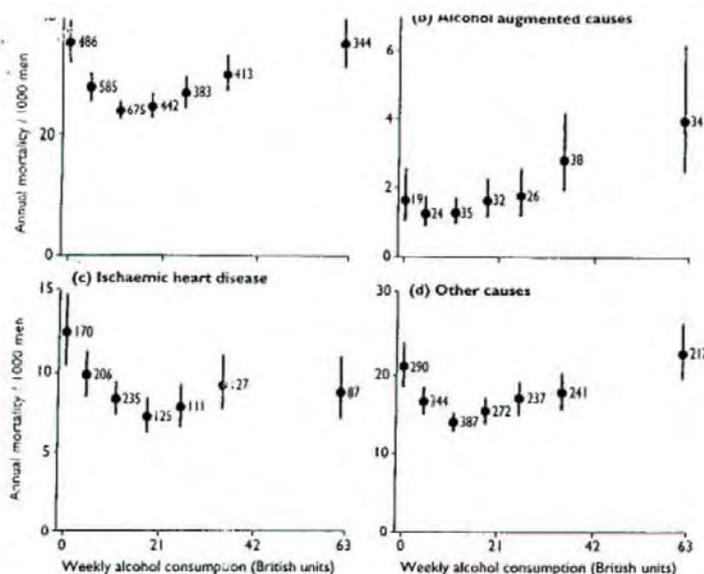
Cause of death and disease status in 1978	Total No of deaths	Units of alcohol consumed a week			χ^2 Test of alcohol effect			
		None	Undefined	1-14 (mean 8.3)	15-28 (mean 21.2)	≥ 29 (mean 46.0)	None v 1-14 units a week	Trend of 1-14 v 15-28 v ≥ 29 units a week
Alcohol augmented causes†:								
No previous disease	109	1.7 (0.6)	1.0 (0.3)	1.1 (0.2)	1.3 (0.3)	2.1 (0.5)	1.7	5.5*
Previous disease	126	1.7 (0.5)	2.7 (0.7)	1.6 (0.3)	2.1 (0.4)	5.9 (1.0)	0	16.2***
Ischaemic heart disease:								
No previous disease	378	7.6 (1.3)	5.5 (0.8)	4.3 (0.4)	3.9 (0.4)	4.0 (0.5)	5.7*	0.8
Previous disease	858	20.0 (2.1)	16.5 (1.0)	13.8 (0.9)	12.8 (0.9)	16.6 (1.4)	2.5	0.1
Other known causes:								
No previous disease	933	13.3 (1.5)	12.4 (1.1)	9.7 (0.5)	11.0 (0.8)	14.4 (1.2)	6.6**	15.1***
Previous disease	1364	29.6 (2.5)	25.8 (2.1)	21.0 (1.1)	23.3 (1.4)	28.1 (1.9)	4.4*	5.1*
All causes (including unknown):								
No previous disease	1450	22.7 (2.0)	18.9 (1.4)	13.0 (0.7)	16.6 (0.9)	20.8 (1.4)	13.7***	12.2***
Previous disease	2396	52.0 (3.3)	45.7 (2.7)	31.1 (1.4)	39.2 (1.7)	49.8 (2.5)	6.6**	6.2*

Values of χ^2 more extreme than 3.84, 6.64, and 10.83 correspond to P values of * 0.05, ** < 0.01, and *** < 0.001 respectively. † Injury, poisoning, liver disease, upper aerodigestive cancer, alcoholic psychosis.

TABLE IV—Annual mortality (per 1000 men) by alcohol consumption reported in 1978 questionnaire (excluding those with undefined consumption). Values are death rates (SE) standardised for age, smoking, year of death, and history of previous disease unless stated otherwise

Cause of death	Total No of deaths	Units of alcohol consumed a week				χ^2 Test of alcohol effect				
		None	1-7 (mean 4.6)	8-14 (mean 11.3)	15-21 (mean 18.0)	22-28 (mean 25.5)	29-42 (mean 35.0)	≥ 43 (mean 61.3)	None v 1-14 units a week	Trend of 1-14 v 15-28 v ≥ 29 units a week
Alcohol augmented causes†	208	1.6 (0.4)	1.3 (0.2)	1.3 (0.2)	1.6 (0.3)	1.8 (0.4)	2.9 (0.6)	4.0 (0.9)	0.7	20.9***
Ischaemic heart disease	1061	12.3 (1.2)	10.0 (0.8)	8.5 (0.6)	7.1 (0.5)	6.0 (0.5)	9.2 (0.9)	8.9 (1.0)	6.8**	0.5
Other known causes:										
Cerebrovascular disease	1988	19.8 (1.4)	16.4 (0.9)	14.0 (0.7)	15.4 (0.8)	16.0 (1.2)	17.9 (1.2)	23.3 (1.9)	10.4**	17.9***
Residual vascular disease	380	3.6 (0.5)	3.0 (0.4)	2.6 (0.3)	3.0 (0.4)	3.0 (0.5)	3.3 (0.5)	6.0 (1.1)	1.9	8.3**
Respiratory disease	342	2.8 (0.5)	1.9 (0.3)	1.6 (0.2)	1.9 (0.4)	1.6 (0.4)	2.6 (0.5)	3.5 (0.8)	3.7	5.8*
Lung cancer	734	2.0 (0.4)	1.5 (0.3)	1.7 (0.2)	1.3 (0.2)	1.0 (0.2)	1.0 (0.2)	2.5 (0.5)	0.6	9.9**
Cancer of large bowel	163	1.1 (0.3)	1.8 (0.4)	1.5 (0.3)	1.0 (0.2)	1.0 (0.2)	1.4 (0.3)	2.3 (0.6)	0.9	0
Other cancers	127	0.9 (0.3)	1.3 (0.3)	0.7 (0.1)	1.7 (0.4)	1.5 (0.4)	0.7 (0.2)	1.8 (0.6)	0	0.5
Residual known causes	508	5.7 (0.8)	4.2 (0.5)	3.6 (0.3)	4.5 (0.5)	4.2 (0.6)	4.9 (0.7)	3.7 (0.6)	5.5*	0.9
Residual unknown causes	334	3.9 (0.7)	2.9 (0.4)	2.4 (0.3)	2.6 (0.4)	2.7 (0.5)	3.0 (0.5)	3.2 (0.7)	2.9	0.9
All causes (including unknown):	3328	34.4 (1.8)	28.1 (1.2)	24.5 (0.9)	24.7 (1.1)	26.0 (1.4)	30.4 (1.6)	36.2 (2.3)	17.9***	16.7***

Values of χ^2 more extreme than 3.84, 6.64, and 10.83 correspond to P values of * < 0.05, ** < 0.01, and *** < 0.001 respectively. † Injury, poisoning, liver disease, upper aerodigestive cancer, alcoholic psychosis.



Annual mortality (per 1000 men) from (a) all causes (including unknown), (b) alcohol augmented causes (cancers of the liver, larynx, oesophagus, mouth, etc, cirrhosis; alcoholism; or external causes), (c) ischaemic heart disease, and (d) other known causes by alcohol consumption reported in 1978. Points and bars are floating absolute risk and 95% confidence interval standardised for exact age, smoking habit, and history of previous disease⁶ and values are numbers of deaths

around 8-14 units of alcohol a week. The mortality appeared somewhat greater ($P=0.08$) at 22-28 units a week, and there was a highly significant increase above the minimum for men drinking more than 28 units a week. For the alcohol augmented causes (panel b), the numbers of deaths were far smaller, but among those who drank alcohol regularly there was a progressive increase in risk from the lowest levels (1-7 and 8-14 units a week). For ischaemic heart disease (panel c) there was no significant trend in either direction among those using alcohol regularly, but there was some suggestion of a U shaped curve with the lowest mortality at 15-21 units a week. For all other known causes combined (panel d) those drinking 8-14 units a week had the lowest hazards, with a progressive increase in risk at progressively higher weekly consumption.

These differences in mortality, both between regular drinkers drinking different amounts and between non-drinkers and light drinkers, were not limited to one age group or to any part of the period of follow up. Table V shows that the differences occurred both in those aged under 75 and in older men but were greater in the younger age group. Table VI shows that the differences were present both in the first five years of

follow-up and in the last eight years and appeared, if anything, slightly more extreme in the later period.

Discussion

These observations on mortality in relation to self reported drinking habits a few years previously have to be interpreted with the knowledge that drinking habits might change over time and are difficult to assess reliably by questionnaire. So far as changes since 1978 were concerned, the information obtained was reasonably encouraging. Most of the surviving members of the cohort continued to drink much the same amount, so that the observed mortality could be related to the amount drunk in 1978 with some confidence. Changing habits and inaccuracies in the estimation of the amounts drunk will, however, have blurred the differences between groups. Even random errors would mean that the true differences in risk associated with the regular consumption of different amounts may well be greater than those observed,⁶ and any systematic changes or errors could systematically change the shape of the dose-response relations.

MORTALITY IN REGULAR DRINKERS

The observation that the mortality from several of the causes studied increased with the amount drunk accords with much clinical and epidemiological evidence, notably that for the causes that we have categorised as alcohol augmented. The similar relations with cerebrovascular disease and other diseases of the circulatory system (other than ischaemic heart disease) accord with previous observations on haemorrhagic stroke and hypertension¹⁹ and on cardiomyopathy or alcoholic heart muscle disease.¹⁰ Alcohol can also affect the development of pneumonia,¹¹ which was given as the underlying cause of 43% of the respiratory system deaths and is likely to have been the terminal illness in many of the additional 42% that were attributed to chronic bronchitis or other such diagnoses. The present results strengthen the conclusion that high levels of consumption of alcohol increase the risk of these diseases.

NON-DRINKERS AND LIGHT DRINKERS

For most of the causes of death studied, the mortality was higher in non-drinkers than in light drinkers irrespective of whether individual subjects had reported previous ill health (table III). These differences cannot easily be attributed to bias or to chance, although they might by chance have appeared to be greater than they really were. Possible explanations are the inclusion among the non-drinkers of some heavy drinkers who did not wish to admit to their habit or who had given up alcohol, particularly if they had

TABLE V—Annual mortality (per 1000 men) by alcohol consumption reported in 1978 questionnaire and age group. Values are death rates (SE) standardised for age, smoking, year of death, and previous history of disease unless stated otherwise

Cause of death	Total No of deaths	Units of alcohol consumed a week							χ^2 Test of alcohol effects	
		None	1-7 (mean 4.6)	8-14 (mean 11.3)	15-21 (mean 18.0)	22-28 (mean 25.5)	29-42 (mean 35.0)	≥ 43 (mean 61.3)	None 1-14 units a week	Trend of 1-14 v 15-28 units a week
Alcohol augmented causes										
Age < 75 years	140	1.8 (0.6)	1.0 (0.2)	1.0 (0.2)	1.3 (0.3)	1.7 (0.4)	2.1 (0.5)	3.9 (1.1)	2.8	17.8***
Age ≥ 75 years	68	1.8 (0.7)	2.8 (0.9)	2.5 (0.7)	2.8 (0.9)	2.1 (0.8)	7.3 (2.8)	5.0 (2.1)	0.4	3.6
Ischaemic heart disease										
Age < 75 years	567	8.6 (1.2)	6.6 (0.7)	5.8 (0.5)	4.6 (0.5)	5.0 (0.6)	6.5 (0.8)	6.2 (0.9)	4.5*	0.1
Age ≥ 75 years	494	28.0 (3.5)	23.0 (2.6)	20.0 (1.9)	17.6 (2.2)	19.6 (2.7)	20.4 (2.9)	20.2 (3.5)	2.5	0.5
Other known causes										
Age < 75 years	935	13.4 (1.5)	9.1 (0.7)	8.9 (0.6)	8.2 (0.7)	9.6 (0.9)	9.6 (0.9)	14.7 (1.6)	5.0*	5.5*
Age ≥ 75 years	1053	49.2 (4.2)	46.7 (3.6)	35.3 (2.3)	46.1 (4.1)	47.3 (4.6)	52.9 (5.2)	58.4 (7.0)	5.2*	12.8***
All causes (including unknown)										
Age < 75 years	1684	24.0 (2.0)	17.0 (1.0)	16.2 (0.8)	14.7 (0.9)	16.6 (1.2)	18.4 (1.3)	24.3 (2.0)	10.1**	8.3**
Age ≥ 75 years	1644	80.5 (5.6)	73.9 (4.5)	59.0 (3.1)	66.7 (4.6)	69.9 (5.4)	80.2 (6.3)	84.5 (8.0)	7.9**	8.1**

Values of χ^2 more extreme than 3.84, 6.64, and 10.83 correspond to P values of * < 0.05, ** < 0.01, and *** < 0.001 respectively. † Injury, poisoning, liver disease, upper aerodigestive cancer, alcoholic psychosis.

TABLE VI—Annual mortality (per 1000 men) by alcohol consumption reported in 1978 questionnaire and period of follow up. Values are death rates (SE) standardised for age, smoking habit, and history of previous disease unless stated otherwise

Cause of death	Total No of deaths	Units of alcohol consumed a week							χ^2 Test of alcohol effect	
		None	1-7 (mean 4.6)	8-14 (mean 11.3)	15-21 (mean 18.0)	22-28 (mean 25.5)	29-42 (mean 35.0)	≥ 43 (mean 61.3)	None v 1-14 units a week	Trend of 1-14 v 15-28 v ≥ 29 units a week
Alcohol augmented causes†										
Years 1-5 of follow up	76	0.9 (0.4)	1.6 (0.5)	1.5 (0.4)	1.1 (0.3)	1.6 (0.5)	1.5 (0.5)	3.2 (1.2)	1.0	1.1
Years 6-13 of follow up	132	2.2 (0.7)	1.2 (0.3)	1.3 (0.2)	1.9 (0.4)	1.9 (0.5)	4.4 (1.2)	4.7 (1.4)	4.0*	24.0***
Ischaemic heart disease:										
Years 1-5 of follow up	387	9.5 (1.4)	7.5 (0.9)	8.0 (0.9)	6.8 (0.9)	6.6 (1.0)	7.7 (1.2)	7.3 (1.3)	1.6	0.3
Years 6-13 of follow up	674	14.6 (1.7)	11.9 (1.1)	9.0 (0.7)	7.4 (0.8)	8.6 (1.0)	10.3 (1.2)	10.2 (1.5)	5.3*	0.2
Other known causes:										
Years 1-5 of follow up	608	13.9 (1.7)	12.4 (1.2)	11.0 (1.0)	10.7 (1.2)	9.7 (1.2)	11.6 (1.4)	18.7 (2.8)	0.6	1.9
Years 6-13 of follow up	1380	24.3 (2.0)	19.4 (1.3)	16.3 (0.9)	18.9 (1.4)	22.6 (1.9)	22.7 (1.9)	26.9 (2.6)	11.7***	17.3***
All causes (including unknown):										
Years 1-5 of follow up	1084	24.2 (2.2)	21.9 (1.7)	20.6 (1.3)	18.8 (1.6)	18.1 (1.7)	21.0 (1.9)	28.8 (3.1)	1.0	1.1
Years 6-13 of follow up	2244	42.2 (2.8)	32.7 (1.7)	27.5 (1.2)	29.1 (1.6)	33.6 (2.1)	37.6 (2.5)	41.7 (3.2)	20.4***	18.2***

Values of χ^2 more extreme than 3.84, 6.64, and 10.83 correspond to P values of * < 0.05, ** < 0.01, and *** < 0.001 respectively. † Injury, poisoning, liver disease, upper aerodigestive cancer, alcoholic psychosis.

given up because of incipient disease; confounding between drinking habits and behaviour that was conducive to good health or to disease; and an effect of small amounts of alcohol in protecting against the development or fatality of disease.

In case some doctors had preferred not to say what their real drinking habits were we had suggested that they might like to reply that they drank occasionally (less than weekly), thus, we hoped, avoiding the classification of some heavy drinkers with non-drinkers. The non-drinkers certainly included some former drinkers, but the evidence of our 1989 inquiry suggested that only about 5% had ever been heavy drinkers (more than 42 units a week) and that nearly all of the non-drinkers in 1978 had always abstained. Indeed, some in replying added personal notes indicating that they had tried alcoholic drinks on various occasions and had found that they did not like them. Moreover, we were able to remove from the non-drinkers 43 former drinkers who had spontaneously reported that they had previously been regular users of alcohol, but their mortality proved to be only 17% higher than that of the non-drinkers—a non-significant difference. It seems unlikely, therefore, that the inclusion of a few more former drinkers among non-drinkers could have increased the mortality by more than a few per cent, except, perhaps, in the category of alcohol augmented disease (in which there were in our non-drinkers five deaths from cancers of the upper aerodigestive tract, three from cancer of the liver, and two from cirrhosis of the liver).

Some doctors might have specifically given up alcohol because of symptoms of incipient disease without declaring that they had developed a "life threatening or disabling disease or condition." No such explanation could, however, have accounted for the excess mortality for ischaemic heart disease in non-drinkers, as the participants in the study had been asked in detail whether they had ever suffered from any form of vascular disease or had been treated for diabetes. All who replied "yes, definitely" or "not sure" were classed as having had previous disease, and the negative trend in mortality from non-drinkers to light drinkers was, in proportionate terms, somewhat weaker in those who reported previous disease than in those who did not (table III). Neither could this explanation have accounted for much of the excess mortality from other conditions in non-drinkers because, had it done so, the excess would have been expected to disappear after a few years. This did not happen. On the contrary, the excess tended to become more extreme with the passage of time (that is, after the first five years' observations) rather than the reverse (table VI).

Confounding is difficult to exclude but is an unsatisfactory explanation unless a plausible factor can be suggested. Smoking could be one, but it was allowed

for by standardisation. In so far as this was inadequate, the residual deficiency would be expected to reduce the risk in non-drinkers (who smoked relatively little) compared with light drinkers (who in the past had smoked more, table I). Dietary differences would also, if anything, be expected to reduce the risk in non-drinkers, as relatively more reported changing to a healthier diet (for example, by reducing saturated fats), and non-drinkers in other studies have been reported to have had a relatively healthy diet rather than the reverse.¹²

There remains the possibility that the consumption of small amounts of alcohol may protect against the development of certain diseases. In the case of ischaemic heart disease extensive reviews of the epidemiological and physiological evidence have supported the idea,¹³ as have subsequent publications.^{14,15} Case-control and cohort studies in which lifelong non-drinkers and former drinkers have been separated have eliminated the possibility that the relatively high mortality in non-drinkers could be explained by the inclusion among them of former heavy drinkers, and small amounts of ethanol have been shown to have some haematological effects that would be expected to reduce the risk of arterial thrombosis: notably an increased concentration of high density lipoproteins and of plasminogen activator inhibitor, a reduced tendency for platelets to aggregate, and a decreased concentration of fibrinogen.^{17,20}

It therefore seems probable that some of the reduction in mortality in light drinkers compared with non-drinkers might have been an artefact due to the inclusion with non-drinkers of a few heavy drinkers who had stopped drinking before 1978 but that this artefact accounted for only a small part of the reduction. Part might have been due to chance, and part was probably due to the antithrombotic effect of alcohol on the risk of ischaemic heart disease. In addition low levels of alcohol consumption could have reduced the risk of cerebrovascular diseases and "residual" vascular diseases because the former include cerebral thrombosis and the latter include aortic aneurysm, arteriosclerosis, and myocardial degeneration, which may share some aetiological factors with ischaemic heart disease.¹

EFFECT ON TOTAL MORTALITY

What impact the various protective and adverse effects of moderate alcohol consumption will have on total mortality is unclear. Ischaemic heart disease is such a major cause of death in late middle and early old age (31% of deaths in men aged 50-89 in England and Wales and 33% in our study population) that if mortality was really reduced by a third this would compensate for a substantial increase in risk from alcohol related causes. The evidence available before

1992 has been reviewed by Beaglehole and Jackson, who found that total mortality was consistently greater in middle aged men with heavy alcohol consumption than in those with light or moderate consumption but not consistently greater than in those who abstained.²¹ They concluded, however, that it was premature to form conclusions about the overall impact of light and moderate drinking because there was too little evidence about the differential effects at different ages. For elderly men, they could cite only the results of one small study in Massachusetts, which showed a significant reduction in mortality with levels of consumption up to 34 g ethanol a day (corresponding to about 28 British units a week).²² Before middle age, however, the situation might be very different as chronic diseases are of much less importance than accidents and violence as causes of death and, although the absolute mortality is low, there is little reason to expect any material protective effect of alcohol. Moreover, the relevance of alcohol use before middle age to mortality in middle or old age is not known.

When the effects of alcohol use in middle or old age are considered, the relation to mortality is not the only, or even in many cases the most important, issue because the social and antisocial effects of alcohol can be so large. Nevertheless, the relation to all cause mortality in middle age is still of substantial medical and public health interest, and the present evidence suggests that in this particular population the net effect of moderate alcohol use may be to reduce overall mortality, with the minimum total mortality in the two consumption groups with means of 11 and 18 units a week (spanning a range of about 1 to 3 units a day). In comparison with these groups doctors who reported drinking 29-42 units a week (average 35 units) had about 20% higher total mortality and those consuming more than 42 units a week (average 61 units) had about 40% higher mortality.

The existence of a U shaped relation between alcohol and total mortality means that, when the relevance of mortality to the upper limits that might be advised for usual alcohol consumption is considered, the appropriate comparison for people drinking somewhat more than the suggested limit is with those drinking somewhat less and not with abstainers. The "crossover level," above which the risk among drinkers starts to exceed that among abstainers, is not of any particular relevance to public health. What matters, at least in terms of mortality, is the level at which the risk starts to increase to an important extent with respect to dose. The findings in the present study must, however, be assessed in the light of all the evidence from all studies, especially since the numbers of deaths of non-drinkers and of those reporting consuming over 42 units a week, though larger than in many other studies, are both too small for statistical stability.

In most other studies a protective effect against ischaemic heart disease has also been found, although not always to quite as great an extent, and in two other large cohort studies (one British¹⁹ and one American²³) total mortality in previously healthy men began to increase from about the same level. In the American study mortality began to increase above two units a day, but units in the United States are 50% greater than in Britain and the two units in the American study²³ correspond to three in ours. It may be, therefore, that the turning point for males in middle or old age is around two to three units a day.

The upper limit for sensible drinking in the British Department of Health's current guidelines is 21 units a week for men,^{19,24} and the present results provide no evidence for any upward revision (especially as the upper limit in such guidelines may in practice be followed only approximately, human nature being

Public health implications

- Small amounts of alcohol are associated with a lower risk of death from ischaemic heart disease, and from several other causes
- Above about 21 units (14 American units) of alcohol a week there was a progressive increase in many causes of death
- This 13 year study of 12 000 doctors showed that the lowest overall mortality occurred in men drinking about 8-14 glasses of beer, wine, etc, a week
- The men studied were aged between about 50 and 90 years, and the same conclusion might not apply to younger men or to women, in whom the mix of causes of death is different

what it is). They do, however, indicate that such guidelines should not only stress the disadvantages in terms of total mortality of consistently exceeding the upper limit but also acknowledge the important health disadvantages, at least in middle or old age, of total abstinence.

All the organisations and most of the individuals whose support and assistance were acknowledged in the accompanying paper on mortality in relation to smoking also supported this work or helped in other ways. In addition, we are particularly grateful to the collaborating doctors who provided the extra personal information; D Lane for advice on respiratory diseases; E Greaves and V Evans for help in reviewing the 1978 questionnaires; and most of all I Sutherland, co-author of the smoking study, who helped greatly in this one by tracing doctors and maintaining records. Cathy Harwood prepared the manuscript.

Appendix: Floating absolute risks

Let there be $(n+1)$ different alcohol categories from zero (the lowest) to n (the highest), and let R be the average death rate per 1000 person years when all of these are combined. Ignoring for the moment the lowest category, let d_i ($i=1, \dots, n$) denote the difference between the observed and the expected number of deaths (O-E) in the i^{th} category of alcohol replies, and let c_{ij} ($i=1, \dots, n$ and $j=1, \dots, n$) denote the inverse of the matrix of the variances and covariances of d_1, \dots, d_n . For each particular value of i , define β_i to be the sum for all possible values of j (from $j=1$ to $j=n$) of the quantities $c_{ij} \times d_j$. This means that β_i is the "one step" estimate of the log of the ratio of the death rate in the i^{th} category of alcohol consumption to that in the lowest (the zero) category. It can be shown that the covariance of β_i with β_j , where i and j are different, is c_{ij} . For each particular value of i , let a_i denote the mean of the $(n-1)$ of these covariances that involve β_i , and then \bar{a} denotes the mean of a_1, \dots, a_n . Now we extend the range of the subscripts to include zero (the lowest alcohol category), and define $\beta_0=0$. Define $s_0^2=\bar{a}$, and (for each particular positive value of i) define $s_i^2=\bar{a}+c_{ii}-2a_i$. Finally, we define β to be a weighted average of the quantities $\beta_0, \beta_1, \dots, \beta_n$ with the weights inversely proportional to $s_0^2, s_1^2, \dots, s_n^2$ respectively, and let $b_i=(\beta_i-\beta)$. In R . Now, the log of the standardised death rate in the i^{th} group ($i=0, 1, \dots, n$) is approximately b_i , with standard deviation s_i . The 95% confidence limits for b_i are $(b_i+1.96 s_i)$ and $(b_i-1.96 s_i)$, and exponentiation of these three quantities yields the previously described "floating absolute risks" and their confidence limits,⁴ which are used throughout this paper.

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Is travel prophylaxis worth while? Economic appraisal of prophylactic measures against malaria, hepatitis A, and typhoid in travellers

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Abstract

Objectives—To estimate the costs and benefits of prophylaxis against travel acquired malaria, typhoid fever, and hepatitis A in United Kingdom residents during 1991.

Design—Retrospective analysis of national epidemiological and economic data.

Main outcome measures—Incidence of travel associated infections in susceptible United Kingdom residents per visit; costs of prophylaxis provision from historical data; benefits to the health sector, community, and individuals in terms of avoided morbidity and mortality based on hospital and community costs of disease.

Results—The high incidence of imported malaria (0.70%) and the low costs of providing chemoprophylaxis resulted in a cost-benefit ratio of 0.19 for chloroquine and proguanil and 0.57 for a regimen containing mefloquine. Hepatitis A infection occurred in 0.05% of visits and the cost of prophylaxis invariably exceeded the benefits for immunoglobulin (cost-benefit ratio 5.8) and inactivated hepatitis A vaccine (cost-benefit ratio 15.8). Similarly, low incidence of typhoid (0.02%) and its high cost gave whole cell killed, polysaccharide Vi, and oral Ty 21a typhoid vaccines cost-benefit ratios of 18.1, 18.0, and 22.0 respectively.

Conclusions—Fewer than one third of travellers receive vaccines but the total cost of providing typhoid and hepatitis A prophylaxis of £25.8m is significantly higher than the treatment costs to the NHS (£1.03m) of cases avoided by prophylaxis. Neither hepatitis A prophylaxis nor typhoid prophylaxis is cost effective, but costs of treating malaria greatly exceed costs of chemoprophylaxis, which is therefore highly cost effective.

Introduction

Of the 28 million British travellers in 1991, 12.6 million travelled to destinations outside North

America and central Europe and 756 000¹ travelled to malarious regions. Because of a perceived risk of diseases in tropical destinations, many intending travellers seek information on recommended immunisations and malaria chemoprophylaxis. To meet the demand many groups provide information about chemoprophylaxis and eminent authorities advise a range of vaccines, presuming these measures to be cost effective. Public health policy has not challenged that belief. We used economic analysis to evaluate pretravel prophylaxis in travellers. We aimed at providing an estimate of costs and benefits of various prophylactic regimens against malaria, typhoid fever, and hepatitis A. We adopted the framework of cost-benefit analysis to determine whether the prophylaxis was worth while, and within this framework we examined cost effectiveness of alternative vaccines and prophylactic regimens that could be used as part of a preventive strategy.

Methods and sources of data

Health sector costs were derived from records of a sample of patients treated in a hospital for tropical diseases. Costs to the individual were based on estimated time off work, costed according to wages and adjusted for cost of employment, as reported by the Department of Employment for 1991. Prices used were unit costs recorded in the *British National Formulary* No 22 (1991) for existing vaccines and in the *British National Formulary* No 26 (1993) for new vaccines and drugs. Benefits were computed as avoided costs of illness.

INCIDENCE OF DISEASE IN TRAVELLERS

As country specific information on infectious disease was largely unknown, we estimated the incidences of hepatitis A, typhoid fever, and malaria in United Kingdom residents returned from disease endemic regions. The incidence of travel associated infections in journeys to endemic countries defined by the World Health Organisation² was expressed as a proportion

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7.4.6 DR P NORRIE

An update on the Dubbo study – alcohol and the elderly

by Dr Philip Norrie

Reviews of previous data have shown a strong positive relationship between moderate alcohol consumption and longevity, with moderate drinkers (< 30g a day) recording between a 20% and 50% reduction in mortality due, largely, to a reduction in coronary heart disease.

The aim of the study by Professor Leon Simons (Associate Professor of Medicine, University of New South Wales and head of Blood Lipid Research Department, Vincents Hospital, Sydney) was to examine the relationship between alcohol intake and survival in elderly people. Since 1988 a team of researchers lead by Professor Simons have been conducting an ongoing prospective study in Dubbo, a rural town in central New South Wales with a population of 34,000. Included in the study were all non-institutionalised people aged > 60 years (1,235 men and 1,570 women).

Reported in the Medical Journal of Australia on 7th August 2000 (Vol. 17.3 pages 121-124) was the latest review of the data after 116 months (nearly 10 years). This review again showed a similar result with the study's conclusion stating "moderate alcohol intake in the elderly appears to be associated with significantly longer survival in men 60-74 years and in all elderly woman". Regardless as to whether beer, wine or spirits were consumed, the protection effect observed was basically similar. The only separation of drinking behaviour noted in the trial was into beer and other (i.e. wine and spirits), because most Australian men > 60 years and living in rural areas would drink beer.

A "threshold benefit effect" was shown by the Dubbo study as alcohol intake was significantly associated with reduced all cause mortality in both sexes even in the minimum consumption category of 1-7 drinks/week compared with abstainers. In terms of future health strategies and recommendations about the question of suggesting whether abstainers should begin to consume alcohol or not the threshold benefit effect is very important.

In the Dubbo study the quantity of alcohol intake was highly correlated with HDL (High Density Lipoprotein) or good cholesterol levels. HDL takes LDL (Low Density Lipoprotein) or bad cholesterol from atheromatous plaques in vessel walls back to the liver to be metabolised, therefore it is not necessarily ones total cholesterol that is so significant anymore, but how high one's HDL level is in preventing vascular disease.

Other mechanisms that explain the health benefits of drinkers include favourable effects of alcohol on clotting mechanisms, reduced insulin resistance and improved function of the endothelium (inner lining of vessel walls) through increased nitric oxide production. Nitric oxide makes microscopic vessels within larger walls dilate thus improving blood flow within larger vessel walls to make them healthier and with healthier vessel walls and endothelium less atheroma develops.

Excess alcoholic intake is known to be toxic to the central nervous system but the Dubbo study showed a moderate intake of alcohol reduced the risk of dementia. The hospitalisation rate for dementia in abstainers during the 116 months of follow up of the Dubbo study was 4.3 per 100 people while in drinkers it was only 2.5 per 100 people. This could be due to better blood flow within cerebral vessels, both large and small microscopic, as well as the role of antioxidants in protecting nerve cells from the harmful effects of toxins such as free radicals and other toxic chemicals.

Findings from other studies

In 1997 in Professor Orgogozo's Bordeaux study, the relative hospitalisation rate for dementia was 4.8/100 for abstainers and 3.9/100 for drinkers. These findings correlate with research from a team led by Dr Jorg Cervilla at the Institute of Psychiatry in London. Reported in the British Journal of Psychiatry (August 2000) was research by Dr Cervilla et al the moderate drinking could reduce the impact of ageing on the brain. The report stated that "moderate alcohol intake could protect against cognitive deterioration in late life".

Over 12 years the mental ability of 400 people aged 65-74 years was tested. Lower rates of mental decline was seen in those who indulged in moderate alcohol consumption, whereas teetotalers whilst under 60 showed some of the highest losses of mental agility as they aged. A similar relative rapid loss of cognitive function was seen in abusers of alcohol.

Doctors should no longer be afraid to recommend a drink a day to abstainers (unless for religious or other health reasons). There is an increasingly strong case to recommend drinking alcohol in moderation to improve the quality of life and health of the elderly, as well as its role in preventing vascular disease amongst all ages.

Dr Philip Norrie is a General Practitioner, author of Wine and Health and a member of the AIM Editorial Board.

Predictors of Cognitive Outcomes in Hypertension

Cohort groups and baseline measures	Full data	Dead	Moved	Refused	P value
Female (%)	66.1	49.0	73.0	73.2	<0.00001
Rural (%)	27.0	25.9	20.7	30.6	0.39
Smokers (%)	13.9	26.8	18.0	16.8	0.00004
Age (mean) (y)	70.2	70.6	70.6	70.1	0.03
Systolic BP* (mean)	184	185	184	184	0.83
Cholesterol	6.60	6.46	6.61	6.69	0.23
BMI	27.6	26.4	28.3	28.7	0.15
PALT†	17.1	17.0	17.0	16.8	0.29
NART‡	31.2*	30.6*	31.2*	27.5	0.004
TMT§	52.6*	56.4	59.3	62.0	0.0005
RPM¶	16.1*	15.1	15.4	14.9	0.0009

* Multiple Range Test; † Tukey's Honestly Significant Difference test.

‡ P < 0.05 v. refused; § P < 0.05 v. dead, taking account of multiple comparisons.

BP = blood pressure; BMI, body mass index; PALT, Paired Associate Learning Test; NART, National Adult Reading Test; TMT, Trail-Making Test; RPM, Raven's Progressive Matrices.