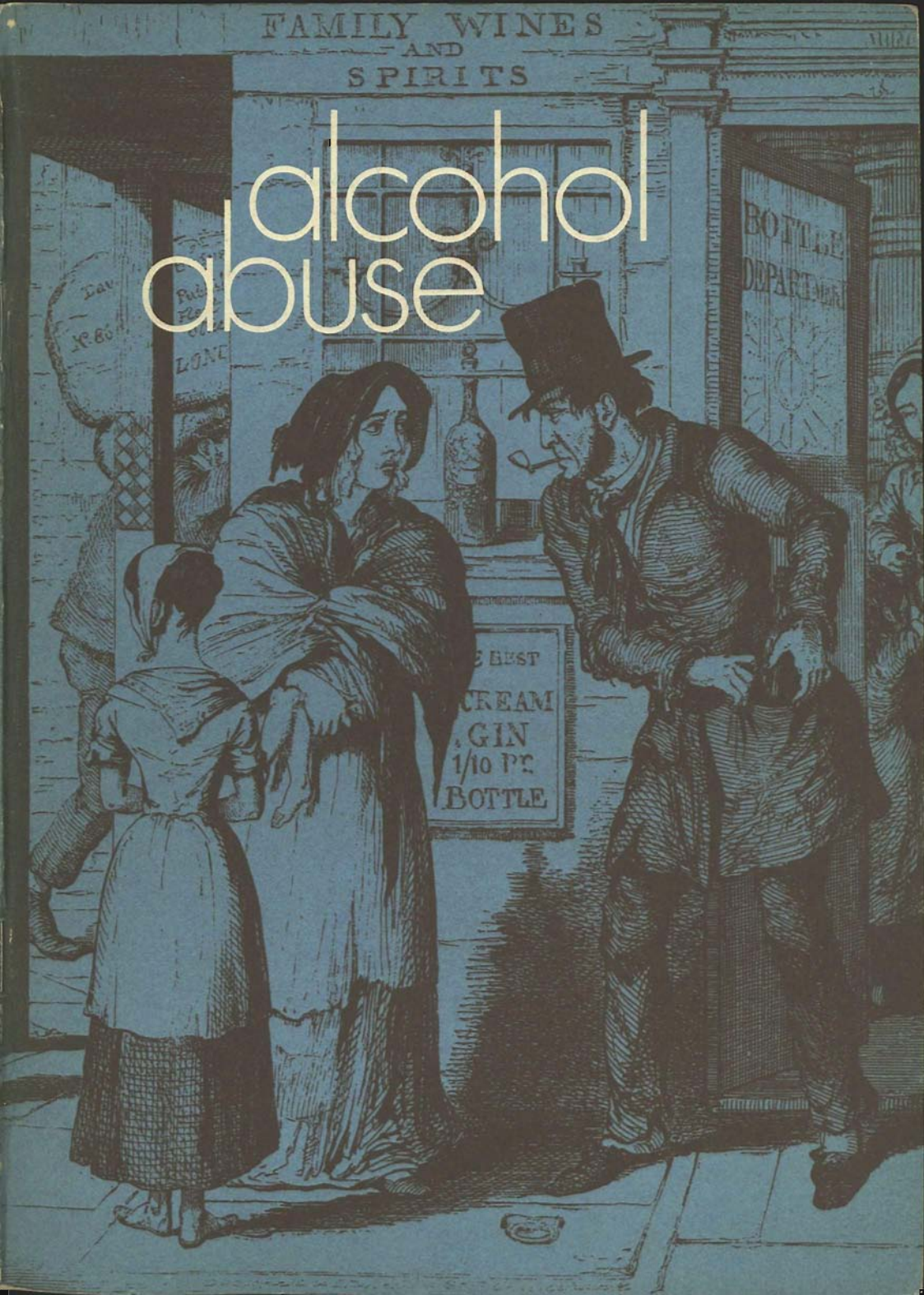
alcohol abuse



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alcohol abuse

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Office of Health Economics

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To investigate other health and social problems.

To collect data from other countries.

To publish results, data and conclusions relevant to the above.

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Introduction

Alcoholism has been a problem for many hundreds of years although the word itself is comparatively modern. Like schizophrenia it has, at various times, been described as a sin, a social problem, a disease and an emotional disturbance. Until recently it stood largely outside the field of public health. Alcoholism has been defined in terms of alcohol's adverse effects on the drinker, his family or society; in terms of getting drunk; in terms of the compulsive nature of drinking and, finally, in terms of specific recognisable physical or psychological symptoms. It has been used to describe a symptom of an underlying psychopathological condition or a psychological illness in its own right. This lack of firm definition has been a stumbling-block to understanding and progress.

A further complication arose when it was realised that there were a number of different forms of alcoholism with different manifestations and probably different aetiologies. Jellinek observed alcoholism in a number of countries and realised that what was called 'alcoholism' in France, for example, differed markedly from the 'alcoholism' found in America and England. He classified four main types and suggested that there might be many more (Jellinek 1960).

Attempts have been made to provide a single and comprehensive definition and in 1951 the WHO suggested that alcoholism is 'any form of drinking which in its extent goes beyond the traditional and customary dietary use, or the ordinary compliance with the social drinking customs of the whole community concerned, irrespective of the aetiological factors leading to such behaviour and irrespective also of the extent to which such aetiological factors are dependent upon heredity, constitution or acquired physiopathological and metabolic influences'. They later used this to refer to 'excessive drinking' and redefined alcoholics as 'those excessive drinkers whose dependence on alcohol has attained such a degree that it shows a noticeable mental disturbance or an interference with their bodily and mental health, their interpersonal relations, and their smooth social and economic functioning; or who show the prodromal signs of such development. They therefore require treatment' (WHO 1952). Thus not all excessive drinkers are alcoholics.

This definition avoided descriptions of aetiology and symptoms, which are areas of controversy, and at the same time incorporated three major themes of many definitions, namely: the consequences of drinking in terms of social, economic and physical effects, the nature of the drinking behaviour including frequency and repetitiveness and the physiological reactions.

Keller (1960) pointed out that no single definition is necessarily suitable for all purposes and suggested that public health workers, for example, might use a set of behavioural signs which are easily recognisable. He evolved a definition of alcoholism as 'a chronic disease manifested by repeated implicative (suspicion arousing) drinking so as to cause injury to the drinker's health or to his social or economic functioning'. This and the WHO definition are those now most commonly used. They both imply that the excessive drinker who, for example, causes economic hardship to his family will be classed as an alcoholic whereas the excessive drinker who does not cause distress will fall outside the definition.

Alcoholism is usually a progressive disease. Jellinek (1960) suggests that addiction to alcohol requires a very high intake over a period of from three to twenty years. Kessel and Walton (1967) suggest three stages in the development of alcoholism: excessive drinking, the addictive stage and chronic alcoholism. Excessive drinkers are not alcoholics though they may become so. In the early stages, the excessive drinker drinks in the same pattern as social drinkers but drinks more, starts to spend more time drinking and begins to do so surreptitiously. He adopts strategies to obtain more drink without others knowing. Drinking affords him positive relief from specific problems and lessens tensions. He begins to use it to relieve all his problems and soon develops increased tolerance, where he has to drink more to obtain the same relief. He often has increased guilt feelings.

This phase moves on to the period where alcohol is a necessity, and the drinker is now dependent on alcohol. He often drinks to the point of drunkenness, he suffers loss of memory and is unable to regulate his drinking. As soon as a small amount of alcohol is consumed the demand for alcohol continues until either the alcohol runs out or the drinker is too sick or intoxicated to drink more. His interests become narrower and drink is the main concern of his life. His work record deteriorates and he drinks heavily during the working day. Psychologically he is beset by remorse and dwells on past achievements. Debts mount up, social isolation occurs and, if married, relations deteriorate with his wife and family – he often becomes morbidly jealous. At this point he may begin to be continuously drunk throughout the weekend and may lose his job. He begins to drink in the morning,

conceals supplies of liquors, neglects his food, and may make suicide attempts.

Chronic alcoholism is marked by the development of additional physical and, or, mental disorders. Tolerance to alcohol often diminishes at this point and though he may consume less he will still go to any length to drink even though he no longer derives satisfaction or relief from drinking. He may start drinking cheap wines or methylated spirits if he cannot afford other alcohol. He develops terrifying fears and confused thinking. He may now seek medical attention, often for complications of alcoholism which may include cirrhosis of the liver, peripheral neuritis, delirium tremens, or alcoholic psychosis.

Although this is the traditional clinical picture known as the 'loss-of-control' syndrome, there is another type of alcoholism, the 'inability-to-abstain' type which is less well known, but possibly equally prevalent. The alcoholic who is 'unable to abstain' drinks continuously and may cause hardship either to himself or others but rarely drinks to the point of overt drunkenness.

The development from normal social drinking through excessive drinking and alcohol dependence to chronic alcoholism is a continuous process although only a small proportion of drinkers progress through all the steps. The definition of alcoholism is thus complicated by the difficulty of isolating, in an individual, one stage from the next. It is also complicated by not knowing whether or not the disease will progress in an individual who is on the border between, say, excessive drinking and alcohol dependence.

Historical trends in the prevalence of alcoholism

The measurement of the extent of alcoholism has been much neglected. Difficulties such as definition have caused widely divergent estimates of current prevalence. The measurement of past trends is even more difficult. In this country there have not been, in fact, as in America, any estimates of trends in the rate of alcoholism. There are, however, a number of indicators which can be used. These are at best tentative and crude, at worst misleading. Nevertheless taken together they may possibly give a broad outline of trends.

Until the present century little public attention was paid to the medical aspects of the abuse of alcohol. Attention was largely

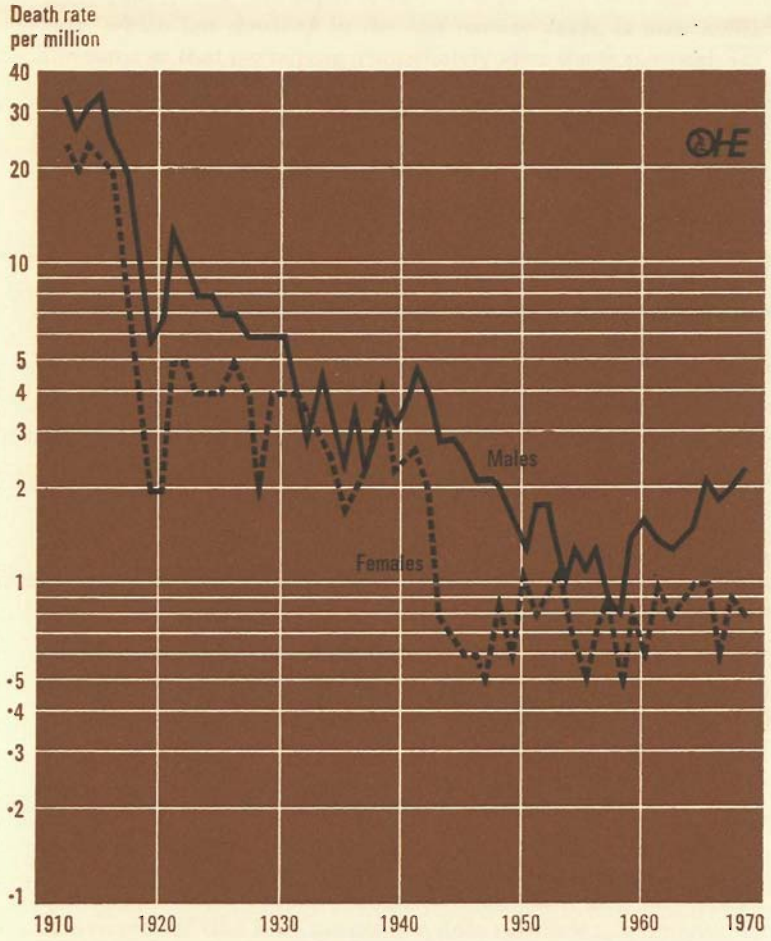
directed to the social effects of excessive use of alcohol, already a problem in the mid sixteenth century, when taverns were often 'the common resort of misruled persons' (Royal Commission 1932). An important element in the spread of drunkenness was the habit of spirit drinking which became common towards the end of the seventeenth century, the start of the gin era of cheap spirits, which reached its peak between 1720 and 1750. Annual consumption of spirits rose from approximately 500,000 gallons in 1684 to seven million gallons by 1751 (Monckton 1969). It is probable that this heavy consumption had the greatest effect on the urban poor, who were underemployed, underfed and badly housed and who had recourse increasingly to cheap and potent alcohol. Much of the poverty and criminality of the day was blamed on gin and the preamble to an act of parliament in 1729 recounted that 'the drinking of spirits and strong waters is becoming very common amongst the people of inferior rank, and the constant and excessive use thereof tends greatly to the destruction of their health, enervating them, and debauching their morals, and driving them into all manner of vice and wickedness' (Royal Commission 1932).

After restrictive legislation consumption of spirits was reduced and by 1758 it had fallen to under two million gallons but soon increased again. Contemporary writers commented on the effect of drinking on health, and gin given to infants was often blamed for the very high rate of infant mortality. Williams writing in 1801 stated 'I am convinced that considerably more than one eighth of all deaths that take place in persons above twenty years old happen prematurely through excess in spirit drinking' (Coffey 1966). Although at the height of the gin era drunkenness pervaded all classes, alcohol generally in the eighteenth and nineteenth centuries increased social stratification. The wealthy drank wine and brandy for 'enhancing social intercourse and the poor swilled beer and gin to forget their miseries' (Leake 1963).

The industrial revolution had brought with it a resurgence of excessive drinking, particularly in the cities. Consumption of alcohol remained at a very high level in the nineteenth century reaching a peak in the mid 1870s and it was not until the dawn of the present century that it started to fall steadily[1]. Trevelyan (1944) commented that 'When Queen Victoria died, drinking was still a great evil from the top to the bottom of society, more widely prevalent than in our day, but decidedly less than when she came to the throne'.

1 Figure 4 on page 11 shows the fall in the consumption of spirits since 1900.

Figure 1 *Alcoholism, death rates per million living by sex, England and Wales, 1911 to 1967*



Source Registrar General's Statistical Review of England and Wales, various years

Note Logarithmic scale

Since the turn of the century, indirect information relating to the disease aspects of alcohol abuse is available. Firstly there are death rates. Two official rubrics can be identified: 'alcoholism' and 'alcoholic psychoses'. Figure 1 shows a combined rate since

Figure 2 *Cirrhosis of the liver, death rates per million living, by sex, England and Wales, 1911 to 1967*

Source Registrar General's Statistical Review of England and Wales, various years

Note Logarithmic scale

1911. It will be seen that rates, both for males and females fell during the first world war, rose again in 1920 and, for males, fell steadily until the mid 1930s. For males the rate fell between 1940 and the mid 1950s since when there has been a rise. The ratio between the sexes has widened in the last few years and is now about 3:1. For both sexes combined the rate is now about one twentieth of that pertaining in 1911.

Death rates for cirrhosis of the liver, a disease strongly associated with alcoholism, are shown by sex in Figure 2. A similar pattern emerges, with a marked fall during the first war, a levelling off in

the 1920s, a steady fall between the late 1920s and the mid 1940s, since when, particularly for females, there has been a rise. The male rate is now one third of that of fifty years ago; the female rate, which has doubled in the last twenty years, is now almost the same as that pertaining immediately after the first world war. The sex ratio of death rates has decreased in recent years; now almost the same rate pertains for males as for females (unlike the United States where, in 1960, the ratio was 2:1), the converse of the trend of death rates from alcoholism. This may suggest the possibility of an interchange between the two diseases in terms of diagnosis or death certificate classification.

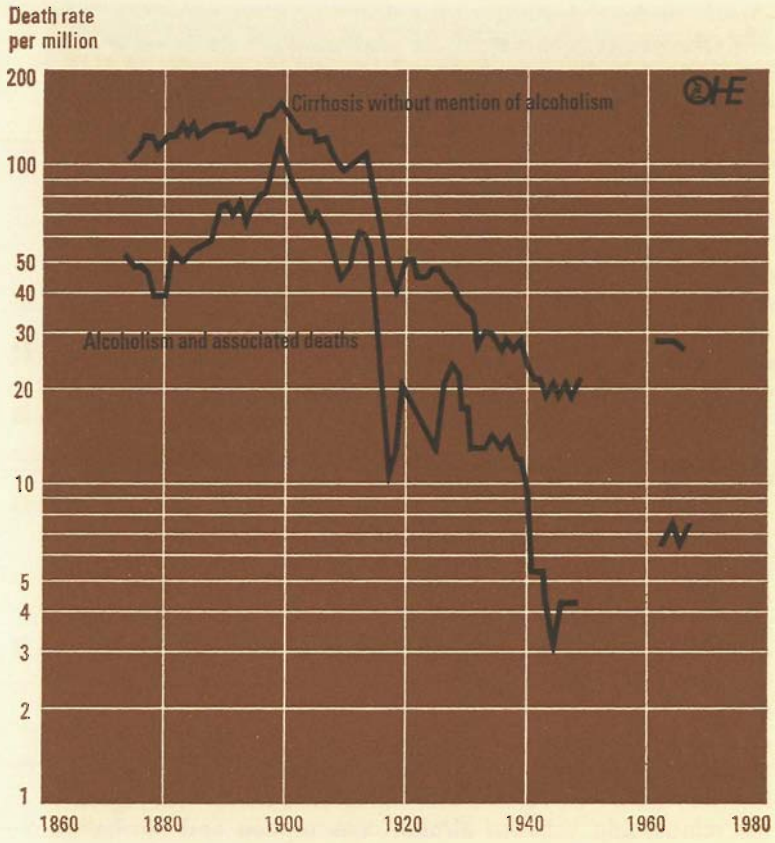
Finally, it is possible to extract information relating to deaths where alcohol was not a direct cause but an underlying one. These deaths, which include deaths due to cirrhosis of the liver where alcohol is mentioned (approximately one tenth of all cirrhosis deaths), have been added to deaths due directly to alcohol and are given as rates in Figure 3. Also shown are deaths due to cirrhosis where alcohol is not mentioned. These both show similar trends to each other and those shown in Figures 1 and 2. This may be further evidence supporting the long-held theory that alcohol is related to a very much higher proportion of deaths from cirrhosis of the liver than is usually recorded.

The number of deaths from, or associated with, alcohol is not in itself an indication of the prevalence of alcoholism. Changes in rates of such deaths might, and probably do, reflect a reduction in the complications of alcoholism due, for example, to improvements in treatment and better living conditions. They might also reflect changes in diagnosis and classification. Two additional indicators of trends that can be used are, firstly, consumption of spirits and, secondly, offences of drunkenness. These together with death rates from 'alcoholic' deaths, are shown in Figure 4.

There has, for many years, been dispute between, principally, the temperance movement and the alcohol trade with regard to the relationship between alcohol consumption and alcoholism. It is suggested that if an association does exist it is mainly with the consumption of spirits and wine and consumption figures are thus shown in terms of proof gallons of spirits per capita. The rates should theoretically, however, be age and sex specific and based on actual users of alcohol rather than on the whole population. Statistics relating to offences of drunkenness also suffer from a number of defects; for example they are not sensitive to changes in the law or changes in the degree of enforcement. Neither excessive drinkers nor those who commit offences of drunkenness are necessarily alcoholics.

During the first world war severe restrictive legislation

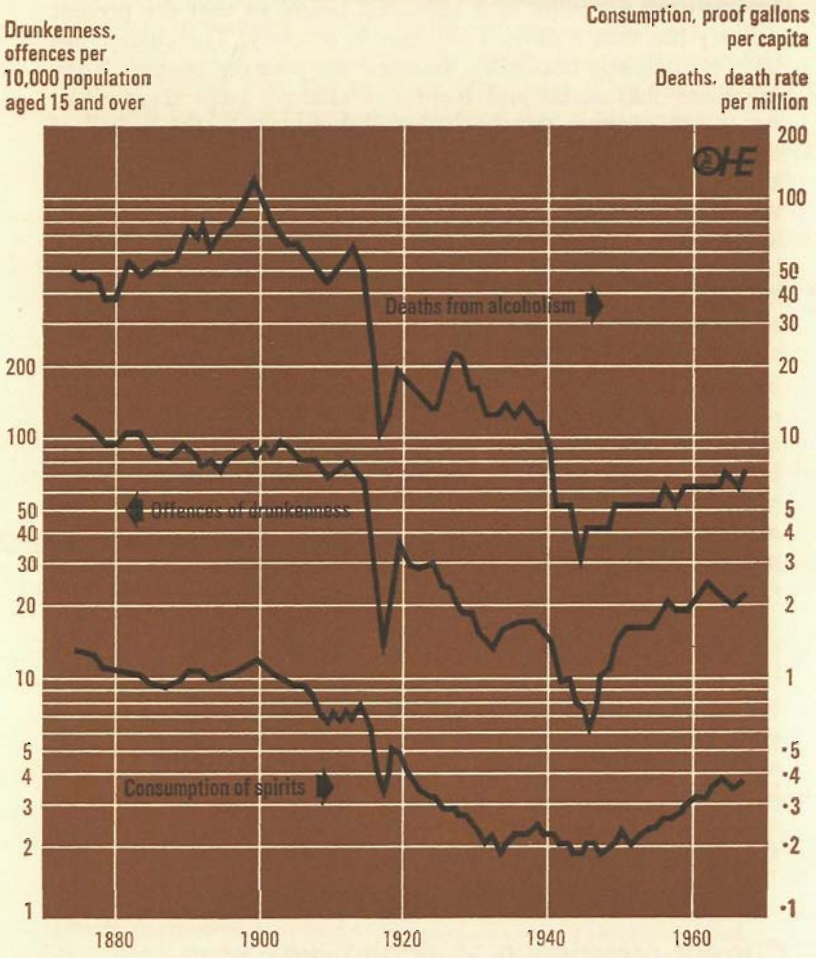
Figure 3 *Deaths due to, or associated with, alcoholism (including cirrhosis with mention of alcoholism) and cirrhosis of liver without mention of alcoholism, death rates per million living, England and Wales, 1875 to 1967*



Source Registrar General's Statistical Review of England and Wales, various years. General Register Office, pers. comm.

Notes
1 Data for 1950 to 1962 not available
2 Data for 1963 to 1967 estimates
3 Logarithmic scale

Figure 4 *Deaths due to, or associated with, alcoholism, offences of drunkenness and consumption of spirits (UK), England and Wales, 1875 to 1967*



Source Data derived from Registrar General's Statistical Review of England and Wales, various years. Offences of Drunkenness, various years. Wilson, G. B. (1940). Alcohol and the Nation. Reports of Customs and Excise, various years

Notes

1 Data for deaths from or associated with alcoholism 1950 to 1967 are OHE estimates

2 Logarithmic scale

considerably affected consumption which continued to fall in the 1920s and 1930s. Writing in 1932 the Royal Commission on Licensing stated that 'it was a matter of general agreement amongst the witnesses who appeared before us that the present century has seen a distinct advance in sobriety. The change has been particularly noticeable amongst the younger people'. They suggested that social and legislative changes were responsible. Among the former they included such factors as the spread of education and better housing conditions and also the counter-attractions to drinking such as cinemas, allotments and the wireless. They suggested that drunkenness had gone out of fashion and was no longer tolerated as it used to be. Among legislative changes they cited restriction of licensing hours[1] and heavy taxation. 'A bottle of ordinary whisky which before the war could be bought for less than 4s, now (1932) costs 12s 6d'.

Although high consumption and drunkenness had previously been associated with poverty, the depression of the early 1930s did not see a rise in either because, possibly, of the policy of high alcohol taxation. Since the end of the second world war, however, both have increased considerably despite heavy increases in the price of alcohol. It has been suggested that money is no longer a constraint on drinking and that a change towards spirits, particularly whisky and vodka, have led to the increase in the number of offences of drunkenness (Prys Williams 1965a).

The relationship between changes in consumption and drunkenness rates and changes in the prevalence of alcoholism is still largely controversial. Nevertheless, the rates shown in Figure 4 do, over long periods, move in similar directions. There has been a general increase in all three rates since the second world war but all are considerably lower than 100 years ago. They are also lower than 50 years ago although the consumption of spirits is now almost as high as the post first world war level. It is possible that the prevalence of alcoholism has followed a similar pattern[2].

Current prevalence of alcoholism

Prevalence of alcoholism can be estimated directly or indirectly. The direct method employs field surveys, either interviewing

1 Legislation introduced in the first world war reduced licensing hours for a weekday from between 16 and 19½ hours down to 6 or 7 hours.

2 Keller (1962) produced direct data on consumption and alcoholism as such and concluded that over the last twenty years in America crude per capita consumption of alcohol statistics do not show an association with the rate of alcoholism.

reliable informants or by sampling the general population. The most widespread indirect method is known as the Jellinek formula (WHO 1951)[1]. This is based on the assumption of a constant relationship between chronic alcoholism and cirrhosis of the liver, the treatment for which, until the 1950s, had undergone little radical change over the previous fifty years. This formula was criticised by Seeley (1959) who claimed that it was in error to so serious an extent that assertions as to the magnitude of the problem are misleading. Brenner (1959) also was strongly critical of the formula and Jellinek later accepted the need for revision and suggested that field surveys were much more desirable in any case (Jellinek 1959).

Nevertheless, in Table A, which shows rates for a number of countries where both the 'Jellinek' and direct method estimates were available, it will be seen that, with the exception of France,

Table A *Prevalence of alcoholism, rates per 100,000 population aged 20 years or more, selected countries**

Place	Year	Jellinek method estimate	Independent method estimate
France	1951	5200	7300
U.S.A.	1953	4390	—
Chile	1950, 1953	3610	4150
Ontario, Canada	1961	2460	2375
Switzerland	1953, 1947	2100	2700
Denmark	1948	1950	1750
Finland	1951–57	1120	1330
England and Wales	1948, 1960–63	1100	865

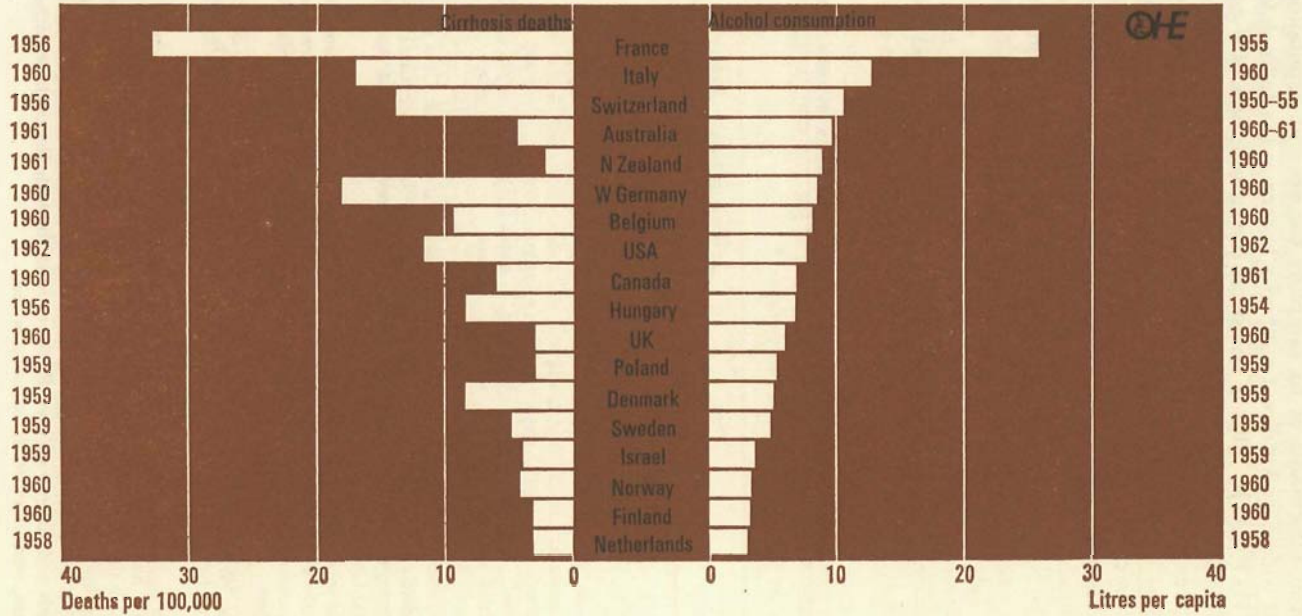
* Estimated by both the Jellinek and independent methods. Data originally supplied by the Alcoholism and Drug Addiction Research Foundation, Toronto, Canada (Project No. 23). U.S.A. data from Keller, M. and Effron, V. (1955) Quart. J. Stud. Alcohol, 16, 619.

† The separation of two years by a dash indicates that the estimates of prevalence represent averages for the period. Where two years are separated by a comma, the first of these is the year to which the Jellinek estimate applied.

Source World Health Organisation Technical Report Series, 1967, 363.

1 The formula is $A=\frac{PD}{K}$. A is the total number of alcoholics in a given year, D the number of cirrhosis deaths, P the proportion of these attributable to alcoholism and K the percentage of all alcoholics with complications who die of cirrhosis of the liver. These measures can be obtained from hospital records and autopsy surveys. R, the ratio of all alcoholics to those with complications, was added to the numerator later.

Figure 5 *Cirrhosis of liver, death rate per 100.000 living and apparent consumption of alcohol (distilled spirits, wine and beer), litres per capita, aged 15 years and over, selected countries*



Source World Health Statistics Report, 1968, No. 11 Effron, V. and Keller, M. (1963). Selected Statistical Tables on the Consumption of Alcohol and Alcoholism, New Brunswick

there is general agreement between the two sets of figures. These rates include alcoholics with physical or psychological complications and alcoholics without complications. Table A shows that France has a rate perhaps six times and America four times that of England and Wales. It should be noted that the countries listed in no way necessarily represent the eight highest rates internationally.

Figure 5 shows death rates from cirrhosis of the liver for a number of countries together with consumption of alcohol. France has the highest rates. Consumption figures have all the drawbacks mentioned above, and for international comparison a further difficulty may be added. The measurement of alcohol consumption is not necessarily standardised – statistics of consumption, production, sales and information for tax purposes are all used. Nevertheless an association between the two variables shown in Figure 5 can be seen. Accepting the crudeness of the data, Fort (1967) suggested that about one per cent of the adult population of the world may be alcoholic. In the United States it is estimated that there are 4 to 5 million alcoholics (including one and a quarter million alcoholics with complications) some 4 per cent of the adult population.

Table B sets out a number of estimates that have been made for this country. The earliest was by the Jellinek method, which, it was felt, was reliable for chronic alcoholics (alcoholics with complications) but not reliable for all alcoholics. In the United States there was strong evidence that only 25 per cent of all alcoholics develop complications. This ratio was applied, at that time, to England and Wales, where it was noted that the estimate for *all* alcoholics was hardly better than a guess. Parr (1957) conducted a questionnaire survey of alcoholism in general practice and reached a figure one tenth that of the WHO figure. In 1955/56 the College of General Practitioners had conducted a general morbidity survey of patients seen in general practice (Logan and Cushion 1958). Here, where the practitioners had no specific instructions with regard to alcoholics they recorded an even smaller number. Glatt (1957) suggested that many alcoholics try to conceal their drinking problems from their doctors and Moss and Davies (1967) found that many doctors considered a person to be an alcoholic only if he consumed *spirits* in a compulsive manner. It has been suggested that doctors do not recognise many cases of alcoholism because they were trained that alcoholism presents itself as the 'loss-of-control' syndrome and are largely unaware of the 'inability-to-abstain' syndrome.

Table B *Estimates of the number of alcoholics, England and Wales, selected surveys*

Survey	Date	Population	Informants	Area	Rate per 1000	Number estimated for 1968*
WHO Expert Committee on Mental Health	1948	Adults 20 and over	Jellinek Formula	England & Wales	11	370,000
College of General Practitioners	1955 –56	All	G.P.s	England & Wales	0.2	10,000**
Parr	1956	Adults 15 and over	G.P.s	England & Wales	1.1	40,000
G. Prys Williams	1960 –63	All	G.P.s Health Visitors & Probation Officers	5 towns	—	280,000
Moss & Davies	1961 –64	Adults 15 and over	13 sources	Cambridgeshire	6.2 (males) 1.4 (females)	220,000†

* The rate per 1000 found for each survey has been applied to the 1968 England and Wales population.

** Excludes diagnosis of alcoholic psychoses.

† An OHE estimate devised by weighting the Cambridgeshire figures according to Parr's regional differentials.

Prys Williams (1965b) conducted a survey in five areas[1] to supplement information obtained by Parr. He found that in Parr's survey the larger the practice the fewer the recorded number of alcoholics. He suggested that this was because those with large lists had less time to identify alcoholics and, accordingly, adjusted Parr's figures of alcoholics seen in general practice. He also suggested that many alcoholics, those unemployed or with a criminal record, did not reach their doctors and he collected information from probation officers and health visitors which he added to the general practice data. He concluded that there were probably, in all, about 70,000 chronic alcoholics (compared with 86,000 estimated by WHO) and a further 200,000 alcoholics not suffering from complications.

1 The five areas were: Harrow, Peterborough, York, Salford and Gateshead.

Moss and Davies (1967) in probably the most thorough survey made in this country found a prevalence of 6.2 per 1000 adult males and 1.4 per adult females over the period 1961-1964. Their survey related, however, only to one county, namely Cambridgeshire, but within the county they obtained information from 13 different sources. Extending their figures to England and Wales, an OHE estimate suggests some 220,000 alcoholics. The wide divergence of some of the figures shown in Table B indicates the caution to be applied in interpreting them. Apart from methodological differences, epidemiological studies in the field of alcoholism encounter two major difficulties, the first is the variation in definition and the second is the propensity alcoholics have for concealing their illness. Nevertheless it is probable that, using the WHO definition, which includes those in the chronic and earlier stages, there are between 200,000 and 400,000 alcoholics in this country. That is in the region of one per cent of the adult population.

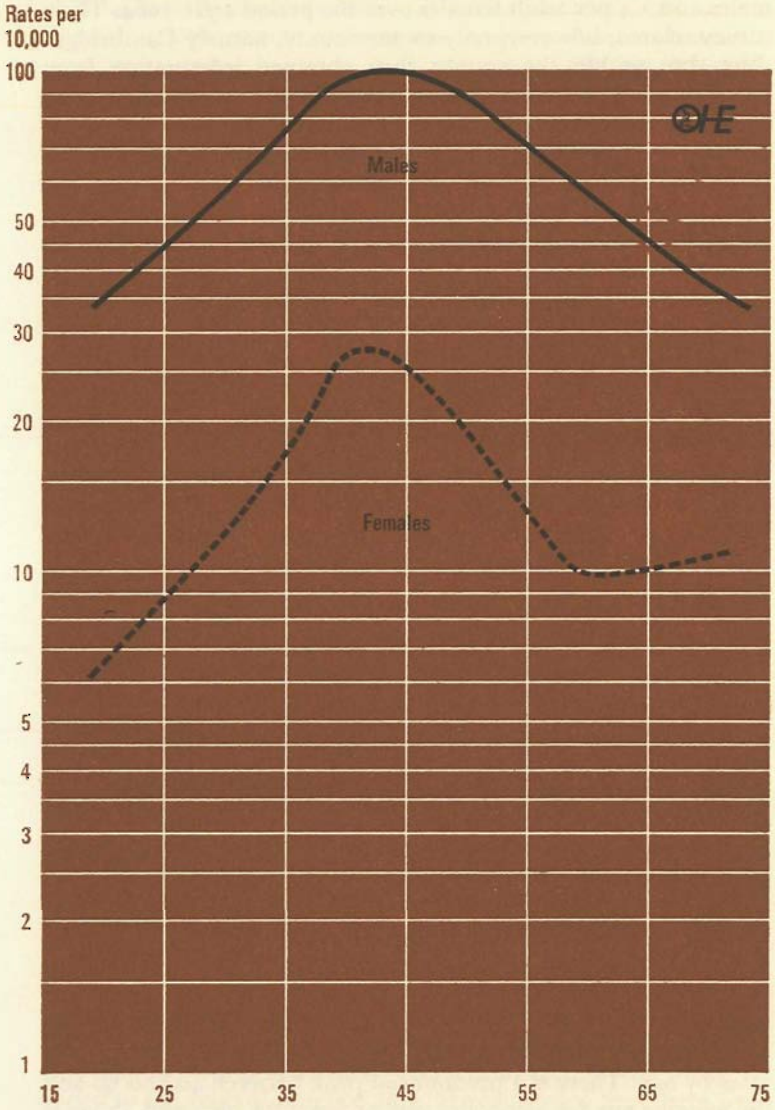
WHO (1951) suggested that sample surveys of the population would give a more reliable estimate of the prevalence of alcoholism. This method has been adopted in the United States (e.g. Bailey et al 1965) but it is time-consuming and expensive. There has been no comprehensive national survey of alcoholism prevalence in this country.

Characteristics of the alcoholic population

Most English studies of alcoholics have dealt with specific self-selected groups such as voluntary hospital in-patients or clients of Alcoholics Anonymous. Thus information relating to the alcoholic refers generally to a specific sub-group and not, necessarily, to alcoholics in general.

It is generally accepted that alcoholism affects more men than women. Moss and Davies (1967) found a ratio of 4 men to 1 woman, a similar figure to that found in the New York field study of 1960-61 (Bailey et al 1965). Edwards et al (1967) found the high ratio of 7:1 while surveying an Alcoholic Information Centre. Figure 6 shows, for the Cambridgeshire study, prevalence rates by age. There is a pronounced peak between 40 and 50 and the average age for alcoholics was 44 years for men and 47 years for women, in general agreement with many other studies. Glatt (1961) traced, by age, the drinking history of patients seen in hospital and compared them with an American series (Jellinek 1946). He found that, on average, the male alcoholics were first

Figure 6 *Alcoholism, prevalence rates per 10,000 population, by sex and age, Cambridgeshire, 1961-1964*



Source Moss, M. C., and Davies, E. B. (1967), A survey of alcoholism in an English county

Note Logarithmic scale

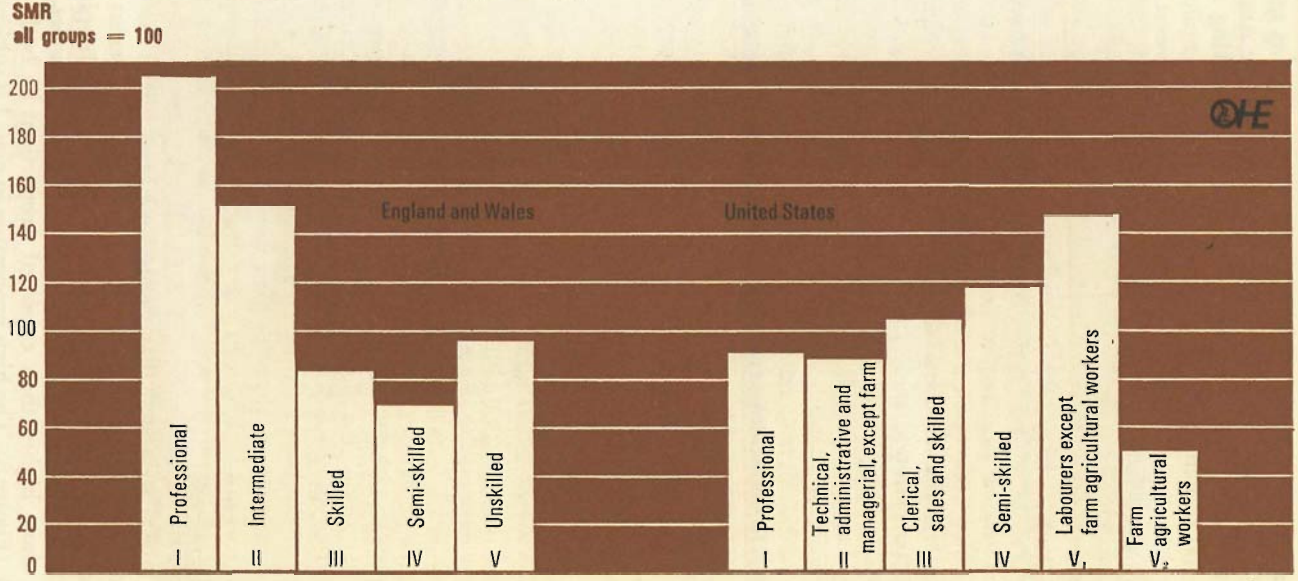
drunk at 20 years (for women 31 years), had their first amnesia at 30, 'loss of control' occurred at 34 (28 among the American males and 42 among women), early morning drinking at 35, suicide was contemplated at 36, medical advice for complications was sought at 39 and what he termed 'reaching ones lowest point' occurred at 42 (46 for women).

In America alcoholism is said to be more prevalent in urban than in rural areas, but no correlation was found by size of city. An urban/rural ratio of 2:1 was found for the county of Cambridgeshire (Moss and Davies 1967), a finding which may have important sociological implications.

The distribution of alcoholics in respect of marital status seems to differ significantly from the population at large. Moss and Davies (1967) found male rates of 136 per 10,000 among the widowed and divorced, 68 per 10,000 among the single and 55 per 10,000 among the married. Figures for women were considerably less and alcoholism was more common among married than single women. An American study yielded rates of 1,050 per 10,000 widowers, 680 per 10,000 divorced or separated men, 290 per 10,000 single men and 250 per 10,000 for married men (Bailey et al 1965). Broken marriages are thus common among alcoholics. Edwards et al (1967) found 33 per cent of alcoholics were divorced or separated and Glatt (1961) found 31 per cent of his male patients were likewise. The high rate among widowers suggests that the loss of a wife may be a factor in the development of alcoholism. Among the divorced and separated alcoholics it is more difficult to establish a cause and effect relationship and there is probably a reciprocal effect between tension and insecurity on the one hand and alcoholism on the other.

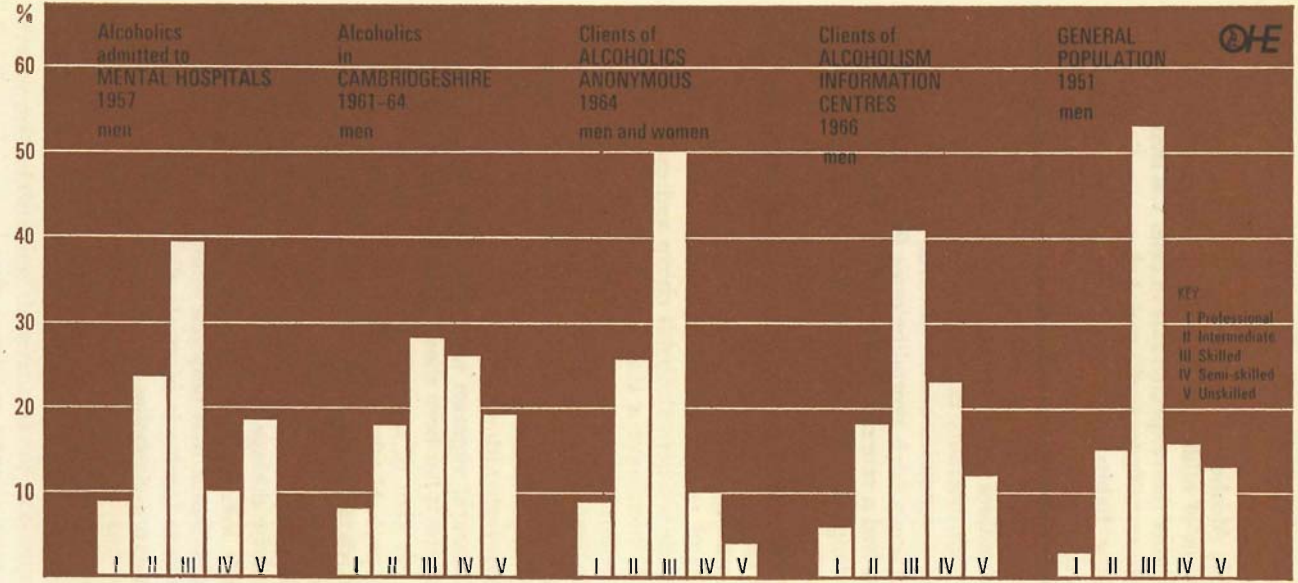
Alcoholism affects all social classes but it is possible that there is a higher prevalence among both the upper and lower groups, probably for entirely different reasons. Some evidence for the prevalence among the higher classes comes from the occupational mortality tables of the Registrar General relating to deaths from cirrhosis of the liver (Figure 7). He commented that a detailed age analysis suggests that the high mortality in classes I and II for men and married women was a feature only of older persons (Registrar General 1957). Experience in the United States, however, shows the reverse of the class correlation (Figure 7). Terris (1967) suggested that spirits have been 'taxed out of the reach of the lower class' in the United Kingdom whereas this is not the case in the United States. However, the hospital inpatients (Registrar General 1961) and the Moss and Davies (1967) studies show higher than expected proportions in both classes I and V (Figure 8). The high proportion in class I is subject to the

Figure 7 *Cirrhosis of the liver, standardised mortality ratios, men aged 20 to 64 years, by occupational level, United States, 1950 and social class, England and Wales, 1949 to 1953*



Source Registrar General's Decennial Supplement for England and Wales, 1951, Occupational Mortality.
Terris, M. (1967) American Journal of Public Health, 57, 2076

Figure 8 *Four alcoholic 'populations' by social class*



Registrar General's Statistical Review of England and Wales, Supplement on Mental Health 1957–58

Moss, M. C. Davies, E. B. (1967)

Edwards, G. et al (1966)

Edwards, G. et al (1966)

Registrar General's Census, 1951

criticism that more patients from the higher social classes seem to seek treatment; 50 per cent of Glatt's patients (Glatt 1961) were in class I or II. Alcoholics Anonymous also seems to attract a higher proportion of middle class clients. One explanation put forward for a higher than expected rate in class V is that alcoholics show a tendency to drift down the social class groupings because of their drinking habits. Edwards et al (1967) showed that although 12 per cent of his sample were now in class V, in analysing their 'best' socio-economic group only 6 per cent came within class V.

Specific occupations have been found to have high rates of alcoholism or high mortality rates from associated illness. In this country several occupations connected with the sale of alcoholic drink have strikingly high mortality rates from cirrhosis of the liver. Publicans had a rate nine times as high as the expected rate for all men of comparable age and barmen five times the expected rate (Registrar General 1957). In Sweden an analysis of seamen found that 3.6 per cent were alcoholics when they first registered as seamen and 18.3 per cent when they last signed on – suggesting that a significant number became alcoholics after becoming seamen (Otterland 1960). Thus high alcoholism rates are often found in occupations where alcohol is cheap and easily available and also those which have a tradition of heavy drinking. This may, in part, be due to the attraction these occupations have for potential alcoholics.

Finally in this section, some comment should perhaps be made with regard to the particular group of alcoholics often referred to as those on 'skid row'. Although many think that most, if not all alcoholics are tramps, vagrants and persons of no fixed abode, in the United States it has been shown that these groups represent only about 7 per cent of alcoholics (O'Holleran and Wellman 1958) and it is probable that the proportion is rather less in this country. Edwards et al (1966a) studied 51 men of London's 'skid row' who drank heavily. They found that on average they had been drinking regularly most days by the age of 24, considered drink a problem by the age of 29 and were on 'skid row' at the age of 38. Their average age was 45. 60 per cent drank crude spirits. They also found that only one third had achieved some social stability since leaving home as youngsters. However, many on 'skid row' are not alcoholics or even heavy drinkers.

Theories of alcoholism

Many different factors have been suggested as possible causes of alcoholism and it is probable that, as with other 'social' diseases, it has a multifactorial aetiology. The theories fall into three groups, in places overlapping. The groups are: cultural, physiological and psychological.

It has long been observed that alcoholism is comparatively widespread in certain national and cultural groups but rare in others. These differences cannot be explained merely in terms of genetics or the degree of abstinence and many alternative hypotheses have been suggested. A cultural approach emphasises the need to study pathological drinking within the context of normal drinking. In simple cultures drinking is mainly a group activity, as is drunkenness. Alcoholism is considered to be rare. Horton (1943) in a cross-cultural study of preliterate societies suggested that drunkenness was related to anxiety. Other workers have disagreed and Field (1962) related drunkenness to the lack of authority of the man in the household, to the family's lack of integration with the surrounding social group and to the degree of social organisation in the society.

Specific cultures which have been studied extensively include the Jews, the Irish in America, the French and the Italians. The Jews have low rates of alcoholism although the use of alcohol is widespread. According to one survey (Mulford 1964) 90 per cent of adult Jews drink. Snyder (1958) hypothesises that the low rate is because in orthodox Judaism drinking is integrated into the traditional ritual of religious observance where wine is considered sacred. Also drinking is learnt in a highly controlled manner within the family setting. Finally drunkenness is, to Jews, seen as non-Jewish behaviour.

Irish-Americans, in contrast, have a very high rate of alcoholism. In Ireland, Bales (1946) showed how drinking is dissociated from religious ideas and also from the family setting. The dominance of the mother and the late age of marriage together with economic factors provided the background for men to drink together outside the home and for drinking to be a substitute for sexuality or aggression. The upheaval from Ireland to America caused difficult problems of adjustment.

French and Italian cultures are often contrasted; in both countries wine is important economically and alcohol is used extensively. In France alcoholism is comparatively widespread, whereas the Italian rate was, at any rate until recently, low. In France neither drinking, drunkenness nor alcoholism is proscribed. Public opinion polls showed that wine is part of the French

'way of life' (Bastide 1954). Fewer than half of those questioned were opposed to giving a child of ten wine to drink and 80 per cent believed that wine was good for health. Almost half of the male respondents considered a daily intake by a working man of two litres or more, acceptable. Regular drinking is a matter of social obligation and the method of drinking is such that many consume wine steadily throughout the day and develop 'chronic alcoholism' often without ever showing signs of intoxication. Jellinek (1960) points out that, possibly because of cultural acceptance, the majority of French alcoholics do not show signs of neurotic behaviour. Some French psychiatrists do not agree that alcoholism is a psychiatric problem at all.

In Italy also, wine is considered nourishing and strength-giving, but in contrast to France attitudes are strongly against intoxication. Wine is drunk largely at meal times within a family background where the parental example of moderate drinking is learnt (Lolli et al 1958). In addition the food itself, such as pasta, may influence rates of alcohol absorption. Almost all Italian drinking is of wine; only 5 per cent, by volume of pure alcohol, is of spirits, compared with 19 per cent in France, 40 per cent in the United States and 14 per cent in the United Kingdom (Popham and Schmidt 1958). More recently, it is thought that there has been a rise in the rate of alcoholism in Italy, particularly among industrial workers.

Alcoholism in America has also been studied extensively and rates are considered to be high partly because of the ambivalent attitudes towards alcohol and drinking. American society has never been able to come to terms with drinking; on the one hand it is severely condemned and on the other openly encouraged. As in this country, attitudes to drunkenness are not consistent and drinking to excess is not always proscribed. Relating drinking and masculinity is a feature common to both cultures. The pattern of drinking is also similar between the two countries, alcohol is consumed quickly at specific times of the day and is generally not consumed at meals or in a controlled setting.

Economic as well as sociological factors may contribute to the aetiology of alcoholism. Jellinek (1960) isolated three economic factors: the economic condition of the individual, the general prosperity of the country and the belief in alcohol production as a national asset. The first two factors are no longer significant, apart from isolated cases where poverty is widespread and alcohol is very cheap, sometimes cheaper than a basic food such as meat. The third factor he suggested operated in France where one third of the electorate were partly or wholly economically dependent on the liquor trade. In addition, the legal control of alcohol must

also be important. For example, the price and accessibility of alcohol may effect alcoholism rates, as possibly occurred in England in the eighteenth and nineteenth centuries.

In summary, the common characteristics of high rates of alcoholism include social pressure to drink, inconsistent or non-existent social sanctions against excessive drinking, utilitarian or convivial goals, drinking outside a family or religious setting and ambivalence towards moderate drinking.

However, cultural factors are insufficient in themselves to explain why, in a given culture, certain persons become alcoholics and most do not. Some have sought a physiological explanation. Hereditary or congenital factors, deficiency of specific nutrients, brain pathology and endocrine disfunction have each been suggested as possible causes. Some suggest that alcoholism may be caused by certain nutritional deficiencies which are themselves inherited. Research so far has not indicated any chemical, physiological or genetic factor as a cause of alcoholism, although the possibility that such a factor exists cannot be ruled out and further investigations are essential.

Psychological theories form the third group. Many researchers have found that alcoholics often come from broken or unhappy homes where they underwent serious emotional deprivation. Robins et al (1962) did a 30 year follow-up study on 500 children who had been seen in a child guidance clinic and a group of matched controls. They found a higher proportion of the former developed alcoholism. McCord and McCord (1960) followed the histories of over 500 delinquent boys over a period of twenty years. They concluded that in childhood, dependency conflict, often caused by the alternation between maternal affection and rejection, was an important factor. As children the boys tended to be aggressive and self-confident, falsely independent. However, they stress that childhood history alone does not determine the outcome. Adult situations such as the cultural attitude to alcohol, the extent to which society demands achievement and the extent to which his precarious facade of aggressive and independent masculinity is challenged, may all interact.

Some of these concepts enter a psychoanalytic approach. This suggests that alcoholism is associated with unusual experience at the oral stage of development, the stage when the infant is completely dependent on the mother's nurture. Later experiences call for the fulfilment of conflicting needs, of independence and achievement and thus the repression of dependency wishes. Alcohol is a device for coping with these problems by, some say, symbolically recreating a satisfying dependency. The choice of alcohol seems to be determined culturally and environmentally

(Chafetz 1959). The feature of the analytical approach is that excessive drinking is thus merely a symptom of an underlying personality disorder. Another approach to the psychological theories of alcoholism utilises learning theories (for example Conger 1956) and it is felt that these have an important contribution to make to the further understanding of alcoholism.

Isolation of a specific alcoholic personality seems now unlikely although a number of traits have been identified. It is probable that different personality structures may give rise to different syndromes of alcoholism. One of the research difficulties is that most studies are based on individuals who are already alcoholics and thus inferences as to personality development are hard to make. Also those who are examined psychiatrically are a select group of alcoholics, results from which may not apply generally. It is however useful for psychiatrists to classify alcoholic types in terms of treatment needs. Ritson (1968) suggested psychoneurotic alcoholics, those with personality disorders and psychotics. William and Long (1968) found those with a good basic personality, the neurotics, psychotics and psychopaths.

In modern western culture alcoholism is primarily a male disorder and the female alcoholic perhaps warrants discussion separately. It is suggested that because society judges the intoxicated female more severely she drinks more alone at home and in secret. Wall (1937) suggested that they are more likely to associate the beginnings of alcoholism with some concrete situation, a result also found by Lisansky (1957). Lisansky found that women begin to drink later in life and the stages of alcoholism were telescoped. She also brought evidence to show that complications of alcoholism were more frequent among women than among men.

Summarising this section, it seems likely that although alcohol is a weak drug of dependence, compared with heroin for example, if enough is taken for a long period certain biochemical changes in the body may occur. These will be preceded by many years of heavy drinking originating in psychological factors and reinforced by social pressures rather than by any physiological disorder.

The effect of alcoholism on the individual

Alcohol is generally absorbed relatively quickly – some through the stomach but most through the small intestine into the blood stream to the rest of the body. The peak blood-alcohol concentration will be higher the more pure alcohol there is in the drink. It will be lower if food is taken with the alcohol and also if the drink is ingested slowly. It will also be lower the greater the body

weight of the drinker. Once absorbed, the alcohol undergoes metabolic changes. Most of these occur in the liver where alcohol is changed first into acetaldehyde and then oxidised into acetate which in turn is oxidised into carbon dioxide and water. The rate of metabolism may also be influenced by a number of factors. A small part of the absorbed alcohol is excreted unchanged in urine, breath and sweat.

The toxic effects of alcoholic drinks may be due to alcohol, to toxic substances other than alcohol (in particular the aldehydes) and to the nature of the drink itself. Thus spirits have a high concentration of alcohol and few other toxic substances, wine has a low concentration of alcohol and relatively high concentrations of other toxic substances, and beer has a low concentration of alcohol, is lacking in vitamins of the B group and has a high food value. Hence, with beer, obesity may be a serious complication of heavy drinking.

It is helpful, at the risk of over-simplification, to consider the effects of alcohol in four stages – dizzy and delightful, drunk and disorderly, dead drunk and dead – associated with one, two, three and four mgm. per ml. of alcohol in the blood. Small quantities of alcohol normally produce mild sedation, relaxation or tranquillity. Slightly higher levels may produce behavioural changes which seem to suggest stimulation – garrulousness, aggressiveness and excitability – but probably result from depression of the higher brain centres which normally inhibit or restrain such behaviour. At very high intake levels alcohol may produce confusion, stupor, coma or death. The analogy between the effects of alcohol and frontal lobectomy is interesting. In both, censorship by the higher centres of the brain is removed, particularly the power of self-criticism. In alcoholism, however, the effect is temporary.

Taken consistently over time, a higher blood alcohol level is required in habitual heavy drinkers than in moderate drinkers to produce the same effects. This is known as tolerance, or acquired tolerance in that it disappears after a period of abstinence. Two possible explanations for acquired tolerance are, firstly, the nervous system may become more resistant to alcohol and, secondly, the individual may compensate for the effect of intoxication through the process of learning. Tolerance to alcohol is, however, limited compared with the degree reached in morphine-like agents, perhaps three or four times the initial consumption for alcohol compared with possibly twenty to one hundred times the therapeutic dose for heroin (Jellinek 1960). Decreased tolerance tends to occur in alcoholics after many years, possibly due to organic brain damage.

If alcohol intake is stopped, some alcoholics suffer withdrawal symptoms. WHO (1955) suggested that symptoms vary with the degree of intoxication and the length of time over which this degree has been maintained prior to withdrawal. After a prolonged period of heavy drinking (over 30 days) symptoms include convulsions and, in some, mental disturbances ranging from hallucinations to delirium tremens. Weakness, tremor, digestive disorders and circulatory disturbances occur within 12 hours, hallucinations during the first 24 hours, convulsions between the 24th and the 48th hour and delirium tremens, when it occurs, between the 3rd and 5th day after withdrawal. Delirium tremens is one of the most dramatic symptoms and perhaps the condition most associated with advanced alcoholism. The alcoholic, who has probably been drinking heavily for ten years before the first attack, shows signs of extreme fear, restlessness and agitation. He becomes tremulous with ever-changing visual hallucinations and is often disorientated. It is now generally agreed that delirium tremens is a symptom of withdrawal rather than a symptom of heavy, prolonged drinking. Neither tolerance nor withdrawal symptoms necessarily occur in all alcoholics.

In the later stage of alcoholism, the chronic stage, physical damage and mental complications occur. Loss of appetite occurs, which in turn produces nutritional deficiencies. Vitamin B deficiency often gives rise to peripheral neuritis. Other complications now considered to be the effects of vitamin B deficiency include Wernicke's encephalopathy and Korsakoff's psychosis, both of which indicate organic brain damage. Gastritis and cirrhosis of the liver are two further physical complications. For over 25 years the widely accepted view has been that cirrhosis in alcoholics was the result of poor nutrition. This has, in recent years, been questioned and it is now thought that the direct effect of alcohol may play a part (Lancet 1968a). Other serious complications include alcoholic dementia, pathological jealousy and alcoholic psychosis. Evidence for the high rate of physical illness among alcoholics comes from two studies of patients in medical wards of general hospitals (Green 1965, Nolan 1965). Both found that at least one in eight admissions were alcoholics.

Sundby (1967) in a long-term follow-up study of male alcoholics in Norway found mortality 113 per cent in excess of normal. The major causes of this excess included tuberculosis, cancer of the larynx, accidents, apoplexy, suicide and ischaemic heart disease.

Suicide or attempted suicide is fairly common among alcoholics. Glatt (1961) found about a quarter of his alcoholic patients had attempted suicide and Kessel and Grossman (1961) who followed up two series of alcoholics some years after discharge found seven

per cent and eight per cent respectively had committed suicide. Alcoholism and suicide are closely inter-related and a similarity in personality structure has been noted (Kessel and Walton 1967).

The effects of alcohol on the community

Apart from the effect of alcoholism on the individual the most immediate and disruptive effect is on the family. Moss and Davies (1967) found 60 per cent of married male alcoholics were involved in frequent quarrels at home and over one third stated that their marriages were adversely affected. However, it is difficult to decide whether this was a cause or effect of excessive drinking. The alcoholic also affects the community at large. Moss and Davies (1967) found 32 per cent of male alcoholics frequently drunk in public, 27 per cent got into severe financial trouble and, in all, 61 per cent caused a disturbance in one way or another.

The alcoholic frequently becomes involved with the law. Glatt (1961) found that 20 per cent of his male patients (middle class) had been in prison. The relationship between alcohol consumption and traffic accidents is firmly established. In America it is estimated that alcohol contributed to, or is associated with, 50 per cent of fatal motor vehicle accidents (National Institute of Mental Health 1968) and in Britain the peak time for accidents is the hour after the public houses close. Those involved, however, are not necessarily alcoholics, although Goldberg (1953) found 45 per cent of men convicted for drunken driving in Sweden to be alcoholics. The relationship between alcohol and more serious crime is still unknown. Some crimes, such as assaults, may occur as a result of drinking 'but the role of intemperance as a major cause is probably more modest than we have been inclined to assume in the past' (Jones 1963).

An estimate of the total cost in money terms of alcoholism is complex. In addition to direct costs such as the cost of treatment and sickness benefit payments, there is the loss involved in less efficient work performance and the cost of accidents caused by alcoholics. Moss and Davies (1967) found over half their male alcoholics with work problems. 43 per cent lost time and 24 per cent lost their jobs. The WHO estimated the direct cost of alcoholism to British Industry at £30 million (Moss and Davies 1967) and another estimate suggested £24 million plus indirect costs of £75 million (Lancet 1968b). Industry has been criticised for the failure to tackle its alcohol problem but the Institute of Directors feels that the extent of the problem has been exaggerated

(Lancet 1968b). In America in the late 1940s firms began to realise that dismissing alcoholics was not necessarily the most profitable solution[1]. Consolidated Edison, for example, set up a special clinic for their alcoholics in 1952 and other firms have a special procedure for the recognition of alcoholics and rehabilitation programmes.

Treatment

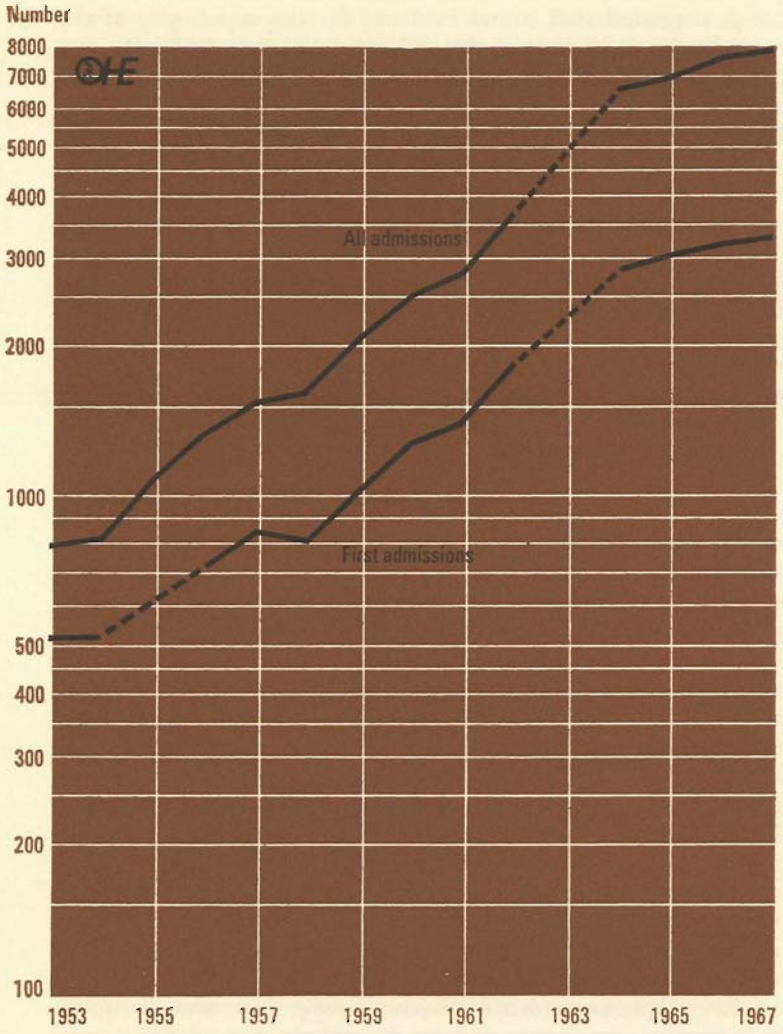
In England and Wales there are 154 hospitals for mental illness and a further 105 units for mental illness in teaching and general hospitals. Most of these can treat alcoholic patients and the number of patients treated rose from less than 800 in 1953 to over 7,500 in 1967 (Figure 9)[2]. A higher proportion now are for second and subsequent admissions. Of the 7,500, perhaps one in five is being treated in special units attached to psychiatric hospitals. These units were set up on the advice of the Ministry of Health (National Health Service 1962, National Health Service 1967) which recognised that treatment will on occasion involve admission to hospital as an in-patient, which is best undertaken in a small specialised hospital unit, but emphasised the importance of out-patient treatment backed by supportive services in the community. There are now 13 such units and more are planned. It is possible that part of the apparent increase in treatment may be because in earlier years many alcoholics were treated in non-psychiatric hospitals. Even now a large number of alcoholics are treated in general hospitals for the physical complications of alcoholism.

Controversy surrounds where treatment might take place. The WHO (1951) suggested that ideally alcoholics in an early stage of the disease might be treated in out-patient units of general hospitals rather than mental hospitals. They recommended that

1 The direct cost of alcoholism to American industry is estimated to be $2,000 million in 1965, or over £800 million. This was based on the somewhat tenuous assumptions that about 3 per cent of the work force were alcoholics, their average salary was about $5,000 and each alcoholic cost his company about a quarter of his salary in lost time, inefficiency, fringe benefits, etc. They suggested other costs such as the friction, lower morale, bad decisions and deteriorated public relations often caused by alcoholics. These, however, were not possible to measure (National Institute of Mental Health 1968).

2 The Scottish rate of first admission to mental hospitals due to alcoholism was seven times higher for men and five times higher for women than the England and Wales rates. In 1966, alcoholics represented 14 per cent of all admissions in Scotland.

Figure 9 *Alcoholism, mental hospital admissions, England and Wales 1953 to 1967*



Source Department of Health and Social Security

Notes

1 Includes alcoholic psychoses
2 Data for 1955 first admission and 1963 not available
3 Logarithmic scale

the need for special residential institutions for alcoholics might progressively diminish. A report from Scotland (Scottish Home and Health Department and Scottish Health Services Council 1965) suggested that sound evidence for the superiority of the specialised unit does not exist and suggested that different types of treatment facilities should be set up with built-in research for evaluation. The controversy, it is suggested, may depend on the type of treatment clinicians favour. Group therapy is perhaps better in a specialised unit but those who employ individual therapy and social support are unlikely to require such units (Scottish Medical Journal 1968). Most agree on the importance of out-patient departments and that community follow-up care is essential. Edwards and Guthrie (1967) suggest that results with patients at a well-run out-patient department might enable in-patient care for some to be dispensed with. It is possible that the best results are obtained by a short in-patient stay followed by planned regular out-patient visits (Kessel and Walton 1967). The Ministry of Health (National Health Service 1967) suggested clinical trials might be set up to investigate specific indications for in-patient and out-patient care.

A small proportion of alcoholics who are psychotic are more intractable to treatment as are the small number of those on 'skid row'. The latter desire the ability to remain anonymous and to remain outside society's strictures. They tend to be uninterested in 'medical' treatment. Kessel and Walton (1967) suggest that voluntary social organisations can play an important role in this area. The majority of alcoholics, if they accept the need for treatment, will first be treated for their physical complications and withdrawal symptoms. Various methods of treatment are available, the most common include psychotherapy and the use of medicines to make it easier for the alcoholic to abstain. Psychotherapy can take place in a group, a method which is considered particularly suitable for the treatment of alcoholics. An Alcoholics Anonymous meeting is in effect such a method of therapy and is recommended for some patients. Alcoholics Anonymous achieves little success, however, with alcoholics who are not gregarious, who dislike public confessions or who object to its religious emphasis. Psychotherapy can also be given individually, one form being psychoanalysis. Fox (1968) suggested that analysis alone as a technique has produced meagre results with alcoholics.

Antabuse, the trade name of disulfiram, is a compound which interferes with the metabolism of alcohol in the body thus causing most unpleasant effects if taken with alcohol. By regularly taking Antabuse the alcoholic knows that alcohol will no longer achieve

its normal effect and is thus discouraged from drinking. The advantage to a well-motivated alcoholic is that he need only take one decision a day – to take an Antabuse tablet – rather than many in resisting the urge to drink. In Eastern Europe, particularly, aversion therapy is popular. The patient is given emetine or apomorphine which produce vomiting. Shortly before vomiting occurs the patient is given alcohol. By association aversion to alcohol is learned. The WHO (1967) suggested that compulsory treatment is often successful but most psychiatrists in this country hold contrary views (Kessel and Walton 1967).

Many studies have been concerned with assessing treatment results. Very few have met many of the necessary methodological requirements for useful evaluation. Davies et al (1956) found 36 per cent of patients abstinent or mainly abstinent after two years. Glatt (1961) found roughly one third remained abstinent, one third were much improved and one third were not improved. Walton et al (1968) found over half abstinent or mainly abstinent and in all 68 per cent improved after eighteen months. Fox (1968) believes that 60 to 80 per cent of well-motivated middle and upper class patients will 'recover'. Freeman and Hopwood (1968), however, suggested that these series are self-selected groups of alcoholics. They studied 100 patients receiving routine mental hospital facilities and suggested not more than 10 to 20 per cent of patients in this category are capable of responding to treatment. Drew (1968) hypothesised that a large proportion of alcoholics eventually recover of their own volition.

One of the few treatment experiments was conducted by Wallerstein (1957) in America where he compared four treatment types. He found on follow-up that those given disulfiram plus group therapy were the most improved. However, treatment was not allotted at random and one of the four types of treatment was incorrectly administered.

Drawbacks of much of the research work in this field include inadequate use of controls, faulty subject selection and the variability of 'success' criteria. Many hold that total abstinence is the only measure of 'success'. The controversial work of Davies (1962) who studied a number of alcoholics who had successfully returned to normal drinking enlarged the scope of criteria. In fact it has been suggested that abstinence as the criterion of success is misleading and that sometimes it is maintained at the expense of total life functioning (Pattison 1966). Nevertheless, the majority of workers in the field still believe that one of the goals of treatment should be total abstinence, for often small quantities of alcohol may rapidly lead to serious relapse. Other essentials for effective research work include reliability and reproducibility

of measurement criteria including the definition of alcoholism and assessment before and after treatment.

The treatment of alcoholism, still in its infancy, is far from rigid. This is useful and necessary, bearing in mind the individuality of the alcoholic and the therapist. What is lacking is a systematic evaluation programme.

Social responses to alcoholism

America and the Scandinavian countries took an early interest in the medical or public health aspects of alcoholism. In America Alcoholics Anonymous was founded in 1935 by an alcoholic. The movement is based on the principles of open self-examination, admission of faults, help to others and atoning for harm done in the past. Their programme is based on twelve steps (Alcoholics Anonymous 1952). More recently Al-Anon and Al-Ateen groups have been formed for the wives and children of alcoholics. In 1940 the first issue of the important Quarterly Journal of Studies on Alcohol was published at Yale University and in 1943 the Yale Summer Schools on Alcoholism were started. The next year the National Council on Alcoholism was organised to disseminate information to the general public. Since the 1940s states have initiated public health programmes and, by 1966, 42 states had official agencies on alcoholism. In the 1960s a National Center for the Prevention and Control of Alcoholism was established within the National Institute of Mental Health, a government sponsored body.

Attitudes towards alcoholism in America are still largely shaped by two segments of the community; the liquor trade and the temperance movement. One third of the public viewed the alcoholic purely in moralistic terms in a survey conducted in 1963 (Mulford and Miller 1964). Despite governmental concern, the Americans are wary of legislative control of the sale and consumption of alcohol especially in the light of their experiences from an era of total prohibition. Instead they encourage individuals, voluntary organisations and industry to provide treatment and rehabilitation for alcoholics.

In England emphasis has traditionally been placed on alcohol control by licensing and taxation, originally to protect the customer and to raise revenue and later, in the eighteenth and nineteenth centuries, as a social measure to curb public drunkenness and to protect women and children from the results of excessive drinking. It was not until 1879, however, that the state

recognised alcoholism as a disease and acknowledged responsibility for the alcoholic in an Act of Parliament which required that a number of retreats be set up for the admission of voluntary patients who were addicted to alcoholic drinks. In 1898 the second Habitual Drunkards Act gave magistrates the power to commit 'criminal' inebriates to special reformatories. For the next 50 years, apart from the retreats which in any case fell into disuse, the treatment and rehabilitation of alcoholics was generally left to voluntary bodies. Alcoholics Anonymous came to this country in 1947 and in 1963 the National Council on Alcoholism was founded. Its aims are primarily educational and referral and for this purpose a number of Alcoholism Information Centres, which give immediate help to the alcoholic and his family, have been established. There are now seven full time centres and one part-time. In 1962, the Ministry of Health took its first active measures by issuing a memorandum to the medical profession concerning alcoholism and its treatment. The Medical Council on Alcoholism was formed in 1968 and concerns itself with sponsoring research.

Jellinek (1960) considered the public in England to be much less interested in the problem of alcoholism than 50 years ago, although the medical profession showed, he thought, a growing interest.

The need for research

Patterns of alcohol consumption vary considerably within any community. At one end of the spectrum is the total abstainer and at the other the chronic alcoholic. The latter, who may display classic complications such as cirrhosis of the liver and delirium tremens, is readily recognisable by laymen and professionals alike. Between the teetotaller and the chronic alcoholic lie the occasional and regular social drinker, the excessive drinker, those dependent on alcohol and the 'alcoholic' without physical or psychological complications. These groups are less easily identified or distinguished.

Although it is known that a small minority of persons progress through the stages – perhaps not necessarily through each stage – to become, after many years, an alcoholic, the natural history of the disease is still largely unknown. Two fundamental questions need to be answered. Firstly, how many persons fall into each category of drinking behaviour? Secondly, who are the people who progress and under what circumstances do they do so?

For any preventive policy it is obviously important to know the size of the problem and the possible future trends. These are still,

in the main, unknown. There are also difficulties of measurement which need to be accepted. These include, firstly, the continuous nature of drinking categories – when does heavy social drinking become excessive, for example? Secondly, definitions will vary by sub-groups in the community and from individual to individual. A bank clerk who drinks five pints of beer a day may be an excessive drinker whereas this might be the norm among heavy manual workers. Similarly, current definitions in effect state that only those dependent on alcohol who injure themselves or do harm to others are alcoholics. Those who need to drink regularly but do no harm fall outside the definition. These behavioural aspects of heavy drinking may always have to be interpreted subjectively.

More important perhaps than the size of each category is the need to identify those persons who may become alcoholics; that is, identification of high-risk groups of individuals. An analogy may be drawn with diabetics where many persons have no signs or symptoms of diabetes other than a relatively high blood sugar level which may perhaps remain stable throughout their lives. With some, however, under certain circumstances, blood sugar levels rapidly increase and the person becomes severely ill. It is possible that the same distinction may occur among excessive drinkers or those dependent on alcohol.

Research into the natural history of the disease is closely related to research into its aetiology. It is probable that alcoholism, as with coronary heart disease, for example, has a number of interrelated causes and it is probable also that, as with cancer, there are a number of different types of alcoholism. Because of this it is unlikely that there will be one major preventive or curative advance. Research is required into the cultural aspects of the aetiology of alcoholism, the effects of the availability of alcohol, the effects of social control and the nature of normal drinking behaviour. At the individual level, research is needed on the personality of the alcoholic prior to the onset of his illness together with continuance of research into the physiological and bio-chemical aspects of alcoholism. Treatment of alcoholics also requires continued research. Prospective studies to measure the development of alcoholism and the response to treatment are called for.

Finally, research may eventually be required to determine the most successful way of enabling these 'high risk' persons to function without excessive alcohol. With cigarette smoking, harmful effects have been identified and, in general terms, heavy smokers have been associated with a high risk of developing such effects. Not all 'high risk' cases, however, have stopped or reduced their smoking.

At present a certain amount of research is undertaken although much of it is conducted abroad, in the United States, Canada, Sweden and Finland, for example. In this country a few units are involved with research into alcoholism including one at the Royal Infirmary at Edinburgh, an MRC unit in Cardiff and the addiction research unit of the Institute of Psychiatry at the Maudsley Hospital in London. The Institute's research at present includes survey work on drinking habits in a London borough.

A policy for the present

There is evidence that heavy drinking, alcoholism and drunkenness have declined considerably since the turn of the century. As with the decline in tuberculosis this could be partly related to improving social conditions. In recent years, however, since the end of the second world war, there has been a steady increase in drunkenness, consumption of alcohol and the disease aspects of drinking. The levels of these indicators are still considerably below those of fifty years ago but the increase must be viewed with concern and future trends observed carefully. It is possible that there is a new 'strain' of alcoholism, affecting different groups of the population.

Further efforts should be made in health education designed to increase research work by instilling a more widespread interest in alcoholism and a change in attitude towards it – from considering it as a problem of morality to thinking of it as an illness. Among the medical profession many general practitioners still do not recognise the illness or accept its medical content. They should be trained to identify alcoholics and to take an active part in their after-care. They should be kept better informed of the facilities for treatment in their area. The alcoholism of patients treated in hospital for other complaints is not always recognised by hospital doctors. Recent emphasis on the social aspects of medicine in undergraduate teaching in medical schools should help to alter this situation. Possibly a national alcoholic programme might be set up by an interdepartmental government committee to co-ordinate research projects into alcoholism, to examine prevalence trends on a continuous basis and to direct, in the most efficient and appropriate way in the light of existing knowledge and limited resources, current treatment and rehabilitation programmes. It should be remembered, however, that such programmes do not exist even for very much more widespread diseases.

Before an alcoholism policy can be agreed upon a great deal more information is required. Who are the high risk cases? How many of them are there? Can they be prevented from contracting the disease? Who has the disease and what is their prognosis? The disease is most prevalent among early middle-aged men, the most economically active members of society. Thus the economic benefits which would accrue to the community if alcoholism were controlled or eliminated might be substantial. They cannot, however, be assessed until more is known about the costs of the disease and the cost of preventing it. These, however, are costs to the community; substantial benefits to the individual patient and his family will come from any progress made in the conquest of alcoholism.

References

Alcoholics Anonymous (1952). The Alcoholic Foundation, New York.
Bailey, N. B., Haberman, P. W. and Alksne, H. (1965). *Quarterly Journal of Studies in Alcohol*, **26,** 19.
Bales, R. F. (1946). *Quarterly Journal of Studies in Alcohol*, **6,** 480.
Bastide, M. (1954). *Population*, **9,** 13.
Brenner, B. (1959). *Quarterly Journal of Studies in Alcohol*, **20,** 255.
Chafetz (1959). *Quarterly Journal of Studies in Alcohol*, **20,** 281.
Coffey, T. G. (1966). *Quarterly Journal of Studies in Alcohol*, **27,** 690.
Conger, J. J. (1956). *Quarterly Journal of Studies in Alcohol*, **17,** 296.
Davies, D. L., Shepherd, M. and Myers, E. (1956). *Quarterly Journal of Studies in Alcohol*, **17,** 499.
Davies, D. L. (1962). *Quarterly Journal of Studies in Alcohol*, **23,** 62.
Dollard, J. (1945) in *Alcohol, Science and Society*, New Haven.
Drew, L. R. H. (1968). *Quarterly Journal of Studies in Alcohol*, **29,** 956.
Edwards, G., Hawker, A., Hensman, C. and Williamson, V. (1966a). *Lancet*, **1,** 249.
Edwards, G., Hawker, A., Hensman, C. and Williamson, V. (1966b). *Lancet*, **2,** 382.
Edwards, G., Fisher, M. K., Hawker, A. and Hensman, C. (1967). *British Medical Journal*, **4,** 346.
Edwards, G. and Guthrie, S. (1967). *Lancet*, **1,** 555.
Field, P. B. (1962) in Pittman, D. J. and Snyder, C. R. (eds.), *Society, Culture and Drinking Patterns*, New York.
Fort, J. (1967). *British Journal of Addiction*, **62,** 129.
Fox, R. (1968). *International Journal of Psycho-Analysis*, **5,** 34.
Freeman, T. and Hopwood, S. C. (1968). *Scottish Medical Journal*, **13,** 237.
Glatt, M. M. (1957). *British Journal of Addiction*, **54,** 50.
Glatt, M. M. (1961). *Acta Psychiatica Scandinavica*, **37,** 88 and 143.
Goldberg, L. (1953). Proceedings of the second international conference on alcohol and road traffic, Toronto.
Green, J. R. (1965). *Medical Journal of Australia*, **1,** 465.
Horton, D. (1943). *Quarterly Journal of Studies in Alcohol*, **4,** 199.
Jellinek, E. M. (1946). *Quarterly Journal of Studies in Alcohol*, **7,** 1.

Jellinek, E. M. (1959). *Quarterly Journal of Studies in Alcohol*, **20**, 261.
Jellinek, E. M. (1960). *The Disease Concept of Alcoholism*, New Haven.
Jones, H. (1963). *Alcoholic Addiction*, London.
Keller, M. (1960). *Quarterly Journal of Studies in Alcohol*, **21**, 125.
Keller, M. (1962) in Pittman, D. J. and Snyder, C. R. (eds.), *Society, Culture and Drinking Patterns*, New York.
Kessel, N. and Walton, H. (1967). *Alcoholism*, Harmondsworth.
Kessel, N. and Grossman, G. (1961). *British Medical Journal*, **2**, 1671.
Lancet (1968a), **2**, 670.
Lancet (1968b), **2**, 1179.
Leake, C. D. (1963) in Lucia, S. P. (ed.) *Alcohol and Civilisation*, New York.
Lisansky, E. (1957). *Quarterly Journal of Studies in Alcohol*, **18**, 588.
Logan, W. P. D. and Cushion, A. A. (1958). *Morbidity Statistics from General Practice*, **Vol. 1**, General Register Office, H.M.S.O., London.
Lolli, G., Serianni, E., Golder , G., and Luzzatto-Fegis, P. (1958). *Alcohol in Italian Culture*, New Haven.
McCord, W. and McCord, J. (1960) *Origins of Alcoholism*, London.
Monckton, K. A. (1969). *A history of the English Public House*, London.
Moss, M. C. and Davies, E. Beresford (1967). *A survey of Alcoholism in an English County*.
Mulford, H. A. (1964). *Quarterly Journal of Studies in Alcohol*, **25**, 634.
Mulford, H. A. and Miller, D. E. (1964). *Quarterly Journal of Studies in Alcohol*, **25**, 314.
National Health Service (1962). H.M., (62), 43.
National Health Service (1967). H.M., (68), 37.
National Institute of Mental Health (1968). *Alcohol and Alcoholism*, Washington.
Nolan, J. P. (1965). *American Journal of Medical Sciences*, **249**, 135.
O'Holleran, P. and Wellman, W. M. (1958). *Californian Medicine*, **89**, 129.
Otterland, A. (1960) *in 26th International Congress on Alcohol and Alcoholism*, Stockholm.
Parr, J. (1957). *British Journal of Addiction*, **54**, 25.
Pattison, E. M. (1966). *Quarterly Journal of Studies in Alcohol*, **27**, 49.
Popham, R. and Schmidt, W. (1958). *Statistics of Alcohol and Alcoholism in Canada*, 1871–1956, Toronto.
Prys Williams, G. (1965a). *Decade of Drunkenness*, London.
Prys Williams, G. (1965b). *Chronic Alcoholics*, London.
Registrar General (1957). *Decennial Supplement, England and Wales*, 1951, **Part 2**, H.M.S.O., London.
Registrar General (1961). *Hospital In-patient Enquiry*, 1956–57, **Part 2**, H.M.S.O., London.
Ritson, B. (1968). *British Journal of Psychiatry*, **114**, 1019.
Robins, L. N., Bates, W. and O'Neal, P. (1962) in Pittman, D. J. and Snyder, C. R. (eds.), *Society, Culture and Drinking Patterns*, New York.
Royal Commission on Licensing (England and Wales) 1929–1931 (1932). H.M.S.O., London.
Scottish Home and Health Department and Scottish Health Services Council (1965). *Alcoholics: Report on Health Services for their treatment and rehabilitation*, H.M.S.O., Edinburgh.
Scottish Medical Journal (1968), **13**, 248.
Seeley, J. R. (1959). *Quarterly Journal of Studies in Alcohol*, **20**, 245.
Snyder, C. R. (1958). *Alcohol and the Jews*, New Haven.
Sundby, P. (1967). *Alcoholism and Mortality*, Oslo.
Terris, M. (1967). *American Journal of Public Health*, **57**, 2076.
Trevelyan, G. M. (1944). *English Social History*, London.

Wall, J. H. (1937). *American Journal of Psychiatry*. **93**, 943.
Wallerstein, R. S. (1957). *Hospital Treatment of Alcoholism*, London.
Walton, H. J., Ritson, E. B. and Kennedy, R. I. (1966). *British Medical Journal*, **2**, 1171.
Williams, L. and Long, R. (1968). *Practitioner*, **200**, 205.
World Health Organisation (1951). *World Health Organisation Technical Report Series*, 42.
World Health Organisation (1952). *World Health Organisation Technical Report Series*, 48.
World Health Organisation (1955). *World Health Organisation Technical Report Series*, 94.
World Health Organisation (1967). *World Health Organisation Technical Report Series*, 363.

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