

ON
ALCOHOLISM

ITS CLINICAL ASPECTS
AND TREATMENT

FRANCIS HARE, M.D.



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ON ALCOHOLISM

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BY

FRANCIS HARE, M.D.

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BECKENHAM



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PREFACE

IN the middle of 1905, the medical side of the Norwood Sanatorium was taken over by a committee of well-known medical men whose number has since been slightly increased. Since the end of that year the experience gained in the institution has been embodied in quarterly reports, addressed to, and passed by, the Committee at their quarterly meetings. At the end of each year the substance of the quarterly reports has been re-embodied in an annual report, which, after acceptance by the Committee at their annual meeting, has been printed and circulated amongst members of the medical profession. Five such annual reports have now been issued, and, judging by the number applied for and the tone of the acknowledgments received, have met with a measure of appreciation : this applies more especially to the third, fourth and fifth annual reports, which have naturally been longer and more exhaustive than the first and second. Accordingly it has been suggested that the time has arrived to collocate and rearrange the material contained in these annual reports in a form more convenient for reference, and the present volume is the outcome of that suggestion.

For the most part alcoholism has been studied clinically under three conditions: (1) In general practice: (2) in general hospitals; and (3) in licensed retreats. Each of these fields of study provides a somewhat different point of view. The physician in general practice obtains his cases in a comparatively early stage. This is considerably in his favour. On the other hand, he is obliged in most instances to treat his patients in their own homes amongst their accustomed surroundings—surroundings in which the habit has developed. This is not in the physician's favour; for it is always difficult for him to feel assured that his prescribed treatment is being strictly carried out. The hospital physician sees mainly the advanced cases of alcoholism—cases in which the severity of the ultimate degenerations and physical complications overshadow the earlier and more remediable stages of the affection; while the physician in charge of a retreat licensed under the Inebriates Act, armed as he is with no small amount of legal authority, sees his patients in circumstances which are certainly exceptional, if not quite abnormal. Moreover, owing to the natural aversion of patients from signing away their individual freedom even for a time, he can hardly expect to obtain his cases in other than the later stages of alcoholism.

All such considerations encourage the hope that the clinical study of alcoholism in a free sanatorium will provide one or two new points of view, and so lead to, if it does not directly promote, an increase in the definite knowledge we now possess of this ubiquitous habit or disease.

In works on alcoholism and its treatment it is

usual to refer also to the management of other drug habits. That course has not here been followed. The subject of morphinism, the only other drug habit at all common in this country, has been thought worthy of a volume to itself, and consequently deferred.

The first or introductory chapter stands somewhat apart from those which follow. It is theoretical and deductive, and was inspired mainly by the views put forward in the recent report of the Departmental Committee on the law relating to inebriates and their detention. To my mind these views are of extreme interest and even of great practical importance. But the chapter is not clinical in its origin, and unlike the remaining eight chapters, does not depend upon the work done at the Norwood Sanatorium. The busy practitioner, therefore, may perhaps elect to omit its perusal.

BECKENHAM,

August, 1912.

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ON ALCOHOLISM

CHAPTER I

INTRODUCTORY

Nature of inebriety—Motives for drinking—Generally accepted propositions concerning alcohol—Classification of population from an alcoholic standpoint—Classification of inebriates from a psychological standpoint—Inexpediency of regarding inebriety as a disease.

Is inebriety a disease? This is one of the commonest questions put to the physician who devotes his attention mainly to alcoholism. Unfortunately no straightforward answer can be made. In the first place the term "disease" has never been clearly and comprehensively defined. We might, of course, beg the latter question to some extent and define disease as unphysiological action. Then, however, we should have to admit that there is no clear line of demarcation between physiological and unphysiological, or pathological, action. And it is equally certain that there is no clear line of demarcation between strictly moderate drinking and drinking to excess. There are, it is true, some who regard all consumption of alcohol, in whatever form, as pathological, and these certainly gain the advantage of evading a difficulty. But in the present state of public opinion, the advancement of such a view—

whether it prove eventually right or wrong—is, for the practical physician, at any rate, to be avoided. It is for him a heavy handicap in seeking to gain the confidence of the ordinary alcoholic patient with whom he has to deal. I do not deny that the constant ventilation of views in advance of the average opinion of the public may have been an efficient agent in bringing about the present very general reaction against the use and abuse of alcohol in daily life. But I do maintain that for the physician practising alcoholism, as distinguished from the propagandist, it is impolitic to incur the suspicion of being an extremist: the extremist will inevitably find that all his arguments are discounted.

It is safe to say that alcoholism in many cases amounts to a disease; but it is impossible to deny that very often the habit is more properly regarded as in the main an exaggeration of ordinary self-indulgent drunkenness; while between these two extremes lies an extended series of intermediate cases—cases in which morbidity and viciousness enter in all proportions into the causation.

It is impossible, therefore, to refer inebriety finally either to the domain of disease or of vice. But we can seek to disentangle the fundamental factors of inebriety, and so form an approximate estimate in individual cases of the amount of responsibility—past and present—to be attributed to the patient.

In the first place, it is necessary to clear the ground by referring to the motives which lead men to drink. These are well put by Archdall Reid.* They are essentially threefold. Men drink (1) to

* 'Principles of Heredity,' 1905, p. 190.

satisfy thirst: (2) to gratify taste: and (3) to induce those peculiar feelings or frames of mind which arise when alcohol circulating in the blood acts directly on the brain—technically, alcoholic euphoria.

The three motives are essentially different, although it is certain that the majority of those who are incidentally, or even personally, interested in the drink question, entirely fail to differentiate between them. For example, I am frequently asked, "How can you expect atropine to assist in keeping a patient abstemious when one admitted action of the drug is to cause dryness of the mouth and throat, and consequent thirst?" The answer is, of course, that thirst never impels the sufferer to take alcohol: for the thirsty man, water is the main, if not the sole, consideration, even although he may add some alcoholic fluid to improve the flavour of the drink; when really thirsty, he would far prefer the water without the alcoholic addition to alcohol without the water. Any antagonism which exists between atropine and alcohol concerns only the third motive for drinking: thirst and craving for alcohol are no more allied than thirst and craving for morphine.

Again, patients frequently say: "I don't drink whisky (or other spirit as the case may be) because I like it. As a matter of fact, I don't like it. I drink because I have to." Disentangled from verbal fallacies, this statement means that whisky and its like fail to gratify their palate, but satisfy, more or less completely, their craving for alcoholic euphoria.

For the connoisseur who drinks to gratify taste,

the flavour is the main consideration : the water and alcohol are used merely to bring out, or modify, the flavour. His motive is identical with that of a child eating toffee.

For the alcoholicist the brain effect—the euphoria—is the sole object : so long as his beverage contains alcohol he will drink to satiety, even in the absence of any thirst, and even when his liquor is actually disagreeable. Eau-de-Cologne, rectified, or even methylated spirit, may be eagerly consumed in the absence of more palatable fluids.

The toper is quite impossible as a critical taster of ales, wines, or spirits, and that for two reasons : the natural delicacy of his palate is usually destroyed through constant stimulation by the more ardent alcoholic fluids ; and his craving for the cerebral effects of alcohol blurs his capacity for estimating sensations which are for him entirely subordinate. As the old toper is reported to have remarked, “ There is no such thing as bad whisky.”

Both the above results of chronic alcoholism are illustrated, if not fully explained, by observations of various kinds in the sanatorium. The loss of taste, and its limited but rapid recovery, are seen in patients for whom mixtures containing drugs like capsicum and ginger are prescribed as substitutes for alcohol during the early days after admission. Usually, within a week, the patient will complain that the strength of his medicine has been greatly increased ; and so assured will he be that this is true, that quite often he will be clearly dissatisfied when matters are explained to him. The complete loss of perceptivity of the more delicate flavours of matured spirits, etc.,

is also obvious. A certain percentage of patients require, and are given, alcohol (whisky, brandy, etc.) in decreasing doses during the early days after admission into the sanatorium. And it is significant that in the last few years criticism of the liquor supplied has been unknown: in the patient's eyes it has been all good, though occasionally in reality of quite indifferent quality. There are many types of drinking to be observed. But the drinker who habitually sips his liquor, and ceases from conversation while he thoughtfully and critically rolls it round his mouth, may assuredly (unless he be acting) be excluded from the category of alcoholists, *at the time the observation is made.*

Though entirely distinct, the three motives may of course co-exist in the one individual; or, as is common, they may succeed each other. In this case, the last motive, the desire for alcoholic euphoria, eventually over-rides and displaces the former two, which thenceforward cease to have any material bearing on the case.

The former two of the motives for drinking, the relief of thirst and the gratification of taste, can never lead to excess for the reason that both rapidly disappear through the early advent of satiety: thirst ceases when the deficiency of water in the system is made good, and the palate becomes quickly cloyed. The third motive is not of necessity so safeguarded. Therefore it is with this motive only that we are henceforward concerned.

The problem of the nature of inebriety, as pointed out in the recent report of the Departmental Committee on the law relating to inebriates and their

detention*—a report of which I am making the freest possible use throughout the remainder of this chapter—is best approached deductively, that is through the avenue of propositions that are generally accepted. Amongst these propositions are the following :

(1) No desire for the consumption of intoxicants—alcohol, opium, betel, kava, coca, kola, haschisch, etc.—exists antecedent to their use. Savage races and civilised persons who have never taken alcohol, etc., have no desire for them whatever, however insensate their craving may become when once they have indulged.

(2) The capacity for being pleasantly affected by alcohol or other intoxicant is a fundamental fact in human nature: this capacity exists also in some of the lower animals.

(3) The enjoyment derived, though practically universal, is experienced by different individuals in very different degrees.

(4) In all, a certain quantity of alcohol produces the familiar symptoms of intoxication. The quantity required, however, varies (*a*) with the individual: (*b*) with the rapidity with which the alcohol is taken; and above all (*c*) with the degree of tolerance of alcohol which has been established by previous prolonged consumption of alcohol. The symptoms also vary with the individual, with the amount, and within certain limits, with the kind, of liquor taken.

(5) In the great majority, the use of alcohol (and of other intoxicants) gives rise at length to

* London: Wyman & Sons; also 'Brit. Med. Journ. Supplement,' January 16th, 1909, p. 25.

satiety, that is, to temporary distaste for further consumption.

(6) The quantity needed to produce satiety varies greatly in different individuals, and in the same individual in different circumstances.

(7) In some, satiety is produced before intoxication occurs: in others, intoxication occurs before satiety is produced.

From these propositions, which are hardly open to question, it may be concluded that when satiety precedes intoxication, the person affected is in no danger of becoming intoxicated—temptation is absent; and that when intoxication precedes satiety, the person affected will go on drinking until he becomes intoxicated, *unless other influences intervene*.

By means of this general conclusion, we may divide all that part of the population who have ever at any time had experience of alcoholic euphoria into the following four classes:

(1) *Those who habitually remain sober through absence of intrinsic temptation.* In such satiety is produced before—often long before—intoxication could occur: there is no danger of excess. It is illogical to assume that inebriates and the sober differ mainly as regards their powers of self-control—that the habitually temperate are *of necessity* endowed with greater will-power than those who succumb from time to time to alcoholic excess. Yet almost without exception, the relatives and friends of patients brought to the sanatorium speak always of absence of will-power, completely ignoring the existence of variations in the strength of temptation.

The fact is that many habitually abstemious people are obviously of feeble will-power in all the relations of every-day life: they may appear to be strong in resisting the temptation to alcoholic excess, but the truth is that, for them, alcoholic excess has no temptation—at any rate, no adequate temptation. Probably, and fortunately, the great mass of the habitually temperate may be ranged under this head. Such are fond of proclaiming their complete inability to understand why anyone should ever drink too much—an inability which, from their point of view, is easily realised.

(2) *Those who remain habitually sober through exertion of will-power.* Such would attain to the stage of intoxication before that of satiety, yet habitually fall short of either stage through the intervention of influences hostile to intoxication. In other words, they are not actuated solely by self-indulgent motives. They foresee the danger of becoming intoxicated; and under the influence of a number of desires conflicting with the still unquenched desire for drink—for example, self-respect, the wish to retain the respect of others, the fear of financial loss, even the mere anticipation of the mental and physical punishment which invariably follows a debauch—exercise their volition and cease from drinking. In this class the power of self-control is stronger than the desire for intoxication. The class is no doubt considerable, but is certainly much smaller than Class 1.

(3) *Those who deliberately become intoxicated at times.* In such also intoxication precedes satiety, or does so at the crucial times. Persons under this head

possess sufficient will-power to cease drinking before the stage of intoxication is reached, but they do not always exert their volition in this respect. Either they are insufficiently alive to the disadvantages of intoxication; or realising them, deliberately decide that such disadvantages are more than counter-balanced by the enjoyment of intoxication. Of such kind are the class of week-end and bank-holiday drunkards, etc.

(4) *Those who become intermittently, periodically, or constantly intoxicated, but whose action in this respect is for the most part, if not always, indeliberate. Such, and such only, constitute the class of inebriates.* Here, as in classes 2 and 3, intoxication necessarily precedes satiety. But the saving influence of will-power is lacking—it is at any rate inadequate, or inadequate at times. *There is an alteration in the ratio between self-control and the desire for drink.* It may be that the chief fault is an exaggerated appreciation of alcoholic euphoria, self-control remaining normal or approximately so; or the chief fault may be a deficiency of self-control, the appreciation of alcoholic euphoria remaining normal or approximately so. Finally, it would appear that both the exaggerated appreciation of alcoholic euphoria, and the deficiency of self-control, may be either more or less inherent or very largely acquired.

CLASSIFICATION OF INEBRIATES IN ACCORDANCE WITH THE PSYCHOLOGICAL FACTORS OF INEBRIETY.

The comprehensive definition of inebriety involved in the last (fourth) paragraph leads to the

formulation of an imperfect, but more or less natural, classification of inebriates—a classification, that is to say, dependent on psychological causation. This is threefold :

(1) Those who are endowed with an exaggerated appreciation of alcoholic euphoria, but whose power of self-control is not *commensurately increased*. “Deriving more pleasure than others from the use of alcohol, they desire it more strongly. Desiring it more strongly, they need a corresponding increase of self-control to enable them to abstain from its excessive use. Such persons are not necessarily deficient in intelligence, strength of will, or desire to keep sober. *They may be superior to the average in some or all of these qualities (italics mine)* ; but desire for drink is in them so greatly intensified, that a capacity for self-control, even if beyond the average, is insufficient to keep them from excess. Such persons are often of great capability and intelligence, and frequently are members of families in which other examples of this form of inebriety occur. The desire for drink, which may be very great, is often intermittent or paroxysmal in occurrence, and the amount of alcohol taken is often enormous.” The best examples of inebriates coming under this head are the true dipsomaniacs (see p. 60).

(2) Those who, with or without an exaggerated appreciation of alcoholic euphoria, are deficient in self-control. Such “lack either the intelligence to appreciate the ill-effects of drunkenness or the force of character and strength of will necessary to withstand the appeal of a desire for immediate indulgence at whatever cost of future detriment. The lack of

self-control shows itself not only in inability to withstand the allurements of alcohol"—were this the only evidence, nothing, of course, would be proved—"but also in outbreaks of temper, of violence, of restlessness, or of destructiveness upon slight provocation." Short of all this, there is evidence of lack of self-restraint in many directions; such patients, for example, when they have recovered their appetite and digestive power, often eat far too much, and at all times they are apt to smoke too much. They are frequently, too, deficient in intelligence, and may come of families in which there are other instances of mental disorder. In them quite a small amount of alcohol may be enough to cause intoxication: there may be a natural intolerance of alcohol (*vide* p. 127); and amongst them are to be found most of the examples of what has been termed "pathological drunkenness."*

(3) The exaggerated appreciation of alcoholic euphoria and the deficient self-control referred to in classes 1 and 2 are for the most part congenital—at any rate, inherent; they are temperamental. But both may be acquired. "By continued indulgence, the desire for liquor is increased . . . whatever the reason that led to the habit, it is found that the longer the habit is continued, the greater becomes the desire for the drug." And furthermore, "by continual yielding to desire, and continued failure to exert self-control . . . self-control is weakened until it is reduced permanently below the point necessary to overcome the desire, and thus inebriety is established. Inebriates of this class are miscel-

* 'Brit. Med. Journ.,' 1910, p. 36.

laneous in character. Sometimes they approach to class 1 and class 2 in family history and mental qualities, but often have little apparent affinity to either. They are inebriates by artificial culture rather than by nature, and when they are defective or disordered, the defect or disorder is often the consequence rather than the cause of the drinking habit."

That part of the report of the Departmental Committee which deals with the nature of inebriety concludes as follows: "This view of inebriety which regards it as an alteration of the ratio of self-control to desire for drink throws light upon the question whether or not it should be regarded as a disease. It is undoubtedly a constitutional peculiarity, and depends in many cases upon qualities with which a person is born, in many acquired by vicious indulgence. Whether the possession of such a constitutional peculiarity when inborn should or should not be considered, from the scientific point of view, a disease, is perhaps a question of nomenclature. If such native peculiarities as the possession of a sixth finger and the absence of a taste for music are rightly considered disease, then the native constitutional peculiarity which underlies many cases of inebriety may be so considered. But there are cogent reasons why the term "disease" should not be used to characterise the inebriate habit. By disease is popularly understood a state of things for which the diseased person is not responsible, which he cannot alter except by the use of remedies from without, whose action is obscure, and cannot be influenced by exertions of his own. But if, as is

unquestionably true, inebriety can be induced by cultivation, if the desire for drink can be increased by indulgence, and self-control diminished by lack of exercise, it is manifest that the reverse effects can be produced by voluntary effort, and that desire for drink may be diminished by abstinence, and self-control, like any other faculty, can be strengthened by exercise. It is erroneous and disastrous to inculcate the doctrine that inebriety, once established, is to be accepted with fatalistic indulgence, and that the inebriate is not to be encouraged to make any effort to mend his ways. It is the more so since inebriety is in many cases recovered from . . . and since the cases which recover . . . are those in which the inebriate himself desires and strives for recovery."

There can be no doubt that this is wise counsel. Physicians who have had a large experience of inebriates must all recognise that there is a numerous class of patients who are only too willing to escape responsibility for their habit, and who eagerly embrace any argument which seems likely to assist them to attain that end.

CHAPTER II

Exciting, determining, or accentuating factors of alcoholism—Extrinsic: Grief, worry, boredom, and variations in responsibility; special occupations; example, good and bad—Intrinsic, mostly pathological: pyrexial conditions and convalescence therefrom; insanity; abnormal mental conditions not amounting to insanity; mental depression; insomnia; debilitating conditions; dysmenorrhœa, asthma, recurrent neuralgic and allied painful conditions; paroxysmal tachycardia; eye-strain; morphinism; gout.

THE threefold natural classification outlined in the last chapter involves—indeed, depends upon—the fundamental psychological factors of inebriety. There may be an exaggerated appreciation of alcoholic euphoria, or a power of self-control below the average, and both factors may be inborn or acquired. Together it will be convenient to refer to these as the predisposing factors. But in the clinical history of an inebriate, there are nearly always other factors bearing upon the habit—factors which may be termed exciting, determining or accentuating. Such factors may all occur in those who have no tendency to alcoholism: they are then powerless to cause inebriety: behind them must always stand the predisposing factors, whether inborn or acquired. Yet the exciting factors are often the starting-point of the habit, and their continued existence may prove the main obstacle to permanent convalescence.

Fortunately, however, they are the most removable of the factors: hence, on all grounds, the necessity for their recognition and treatment.

To attempt an exhaustive enumeration of the exciting factors of inebriety would be a hopeless, as well as a needless, task. Such a list would cover most of the field of medicine and surgery, and extend thence into nearly all the circumstances of daily life. Reference here will be made only to those factors which have come frequently under notice at the sanatorium, which are presumably the commonest and most important, and which have in these cases undoubtedly contributed to the patient's condition.

These factors may be divided primarily into *extrinsic*—factors circumstantial which are for the most part, if not wholly, independent of the patient's control, or even of his personality; and *intrinsic*—factors which, whether inherent or acquired, are, or have become, a part of the patient's personality, and which may, or may not, be controllable by himself.

EXTRINSIC FACTORS.

Amongst extrinsic factors, the most frequently recurring are grief, from the illness or death of near relatives or intimate friends: sudden adversity from financial loss: infidelity on the part of husbands or wives: broken engagements of marriage; and numerous other misfortunes, business and domestic. An even more efficient factor than grief is *worry*, which also may be of a business or domestic nature. Grief, though often determining inebriety in a hitherto moderate drinker, not very rarely operates in the

reverse direction, and checks the downward career of the incipient inebriate. There is a certain finality about grief—a cessation of responsibility for the future—which would seem to be in some cases beneficial. Worry, on the other hand, connotes uncertainty: the sense of responsibility continues; and the temptation to seek relief in the artificial irresponsibility of alcoholic euphoria is apt to become irresistible. Financial worry was well illustrated in a patient who, during the first three quarters of the present year (1911), has several times entered the sanatorium. He had made a comfortable competence in business and retired. But idleness bored him, and he occupied his time in Stock Exchange speculations. In ordinary years his operations would probably have resulted in moderate profits—certainly they were not such as would have led to serious losses. But during the present year the markets have admittedly been abnormal; and everything he touched went down. Insomnia followed, and for the insomnia he took whisky, the dose of which quickly rose, so that soon he became an intermittent inebriate. Each fall in prices was succeeded by an outbreak of drinking. And by watching the daily quotations, it became possible to predict roughly the day when this patient would again telephone for a room in the sanatorium.

Worry takes many forms. The nagging wife has become proverbial, and certainly she is a serious obstacle when mated to one having a tendency to alcoholism. But though less frequently heard of, there are not a few nagging husbands whose influence on their partners is equally unfortunate. *Jealousy,*

when entirely causeless, is a well-recognised symptom of alcoholism; but with or without cause, it is a potent source of worry, and consequently an exciting or accentuating factor. Though included amongst the extrinsic factors, worry, of course, depends very largely, if not mainly, on the temperament of the individual affected. Many seem to discover sources of worry in every occurrence which in the slightest degree departs from the usual. One asthmatic and neurotic patient has returned several times to the sanatorium, and on each occasion has given what to him was a clear and valid excuse for his relapse into alcoholism. On the first occasion his wife had not been well—her indisposition was obviously trivial: on the second, his little girl had contracted chickenpox: on the third, his coachman had given notice, and so on. But there is no doubt whatever that, whether of adequate or inadequate causation, worry is the commonest and most efficient of all the exciting factors of alcoholism: its continuance is the most frequent obstacle to success in treatment, and the most frequent cause of relapse after successful treatment. The subject will be again referred to in the chapter on treatment.

Closely allied to, if not identical with, worry, is any sudden increase of responsibility, even when such increase involves an improvement in financial and social position. Many patients date their inebriety from the death or illness of a superior leading to promotion. Several secondary factors may here be involved. The common mental condition termed "swelled head" may be mainly operative, or it may be the merely increased

responsibility combined with additional work. *Overwork* has determined many cases. When fagged with long hours a dose of alcohol undoubtedly acts as a stimulant, and enables the worker—whether physical or mental, especially the latter—to make a fresh start, or continue for a longer time. Such stimulation, however, is short-lived, and quickly succeeded by some slight degree of narcosis which damages the quality of the work even when the total output is increased. For tiding over an emergency of work, tea, coffee and strychnine are preferable, since their stimulant effects are much more lasting, and are not followed by any narcotic reaction.

In many cases inebriety has been determined by *sudden accession to fortune and independence*, obviating the necessity for further work. And in a very large number retirement from business has led to the same result. *Boredom* in both cases has, of course, been the chief psychological influence. The strenuous man of business who for many years has been pleurably anticipating the time when he will be able to drop his harness with a clear conscience, rarely foresees how little pleasure he will obtain therefrom: he too often overlooks the risks he will run. Almost equally with the successful performance of work, the satisfactory enjoyment of leisure demands a preliminary training. And that man is supremely wise who, when contemplating retirement, provides himself with one or more hobbies. It is futile to deny that to the great mass of human beings alcoholic euphoria is pleasurable. But it is a source of pleasure from which the inebriate, or

potential inebriate, is of necessity cut off. Both must look round for compensations, of which there are plenty. And many of the most permanent "cures" have been in those who have been fortunate enough to acquire an absorbing hobby.

As is well known, certain professions and occupations yield a disproportionately large number of inebriates. Many of these professions act by greatly increasing *accessibility*. It is obvious that in *publicans*, *barmaids* and *potmen*, continued accessibility is the chief factor. So potent and certain is the influence of accessibility that some of the chief life assurance societies will not accept, even with heavy loading, proponents who are employed in the retail liquor trade. *Wine and spirit merchants* must be added to the list. *Commercial travellers* also are continually exposed to extra temptations through continual change of residence and continual renewal of business acquaintanceships. For long years it has been an axiom that to be successful as a "traveller" it is essential for a man to drink. But during the last decade, at any rate, there has been a marked change in this view. In many "lines" an abstaining traveller is now a success where previously he would have obtained but little custom. As might be anticipated, the *traveller in wines and spirits* is the most hard pressed of all travellers to remain temperate.

The *stage* supplies many victims to inebriety. No doubt in the lower or junior grades of stage life constant accessibility to intoxicants is above the average. But other factors enter largely into the result. Most businesses and professions demand the cultivation

of self-restraint and the reasoning faculties; and advancement as a rule is to a great extent proportionate to the success of such cultivation. The emotions generally are at a discount. But in the theatrical profession (also perhaps in music, and some other branches of art) a relatively higher premium accrues from the cultivation of the emotions. And it can hardly be disputed that the successful cultivation of the emotional faculties is largely inconsistent with the successful cultivation—even the retention—of the faculties of self-control or mental inhibition.

The *Stock Exchange* has sent quite a few patients to the sanatorium. As might be expected, the cases have not been drawn as a rule from amongst the most successful brokers or jobbers. Many factors co-operate here owing to the extreme irregularity of the routine of work. During a slack market there is boredom and probably worry: there are long periods during which the ordinary broker or small jobber may not make his office expenses. During boom times there are intense excitement and extreme overwork—very long hours. And the climax of alcoholism or complete breakdown may be reached at either period in accordance with the varying temperaments of patients. In both, however—but especially, I think, in those who break down during an excited market—the commonest immediate antecedent has been severe insomnia.

Almost the same may be said of the racing fraternity.

Life in the tropics is supposed to be especially prone to induce habits of intemperance; and certainly a

disproportionate number of patients admitted to the sanatorium have passed many years in the tropical or sub-tropical dependencies of the Empire. *Lassitude* resulting from prolonged heat no doubt predisposes to frequent alcoholic stimulation. Crothers points out that in America, "the hot waves which follow each other during the summer months register their duration and intensity in the police-courts, station-houses and hospitals of all large cities by the sudden increased number of inebriates who come under observation." But probably a factor equally important with heat is *boredom from lack of the social amenities*. It is noticeable that new settlements which have not yet attained the stage in which the wives and families of the residents become a part of the community are especially prolific in cases of inebriety. In such, no doubt, many factors co-operate. Considerations of this kind should demonstrate the futility of sending patients to the Colonies and providing them while there with an allowance. In all the over-seas states the "remittance man" is well known, and always regarded as the most hopeless type of inebriate.

Early training has naturally a bearing upon alcoholism in after-life. Some of the worst cases admitted had been brought up to take beer or claret with meals. This, however, is found mainly in the histories of patients of somewhat advanced age; it is rarer in the present generation.

Example operates in many ways. One of the saddest cases of pseudo-dipsomania admitted was in a young widow :

She had been brought up a strict abstainer, and had remained so until after her marriage. Her husband was a chronic alcoholic, and during their first year of married life the two had usually dined together at a restaurant. There champagne was always called for, and the wife's first experience of any kind of alcohol was dictated by the sincere wish to prevent her husband taking too much. Within a very few months, however, she had herself developed severe inebriety.

Temperance reformers lay much stress upon the influence of good examples: for the most part they consider it a duty to remain or become abstainers so as to lead the way and induce others to follow. But without detracting in the slightest from the altruism of these motives, it may be questioned whether a large measure of success results from the practice. The inebriate, at any rate, invariably argues that there can be no credit in abstinence where temptation is absent. And it is not easy to contradict him.

Be that as it may, it is certain that in many cases the influence for good of a bad example is more potent than that of a good one. This is demonstrated in many ways, but most strikingly in the family histories of patients. One of the commonest of all family histories shows a spurious atavism. The patient's father had been a life-long abstainer, but on further inquiry it comes out that the paternal grandfather had been an inebriate. No doubt the father of the patient inherited the inebriate proclivities, but was saved from the consequences thereof by the early warning of a drunken parent. The patient himself, inheriting the same proclivity, succumbs thereto through the absence of any

adequate warning example. At least, that is how these histories appeal to me.

INTRINSIC FACTORS.

Most of the intrinsic exciting factors of inebriety depend on the employment of alcohol under medical advice or otherwise for pathological conditions. Such are manifestly numerous and extremely varied ; and any attempt at a comprehensive list is precluded by lack of time and space. Reference will be made here only to those which have appeared prominently in the clinical histories of patients admitted into and treated in the Norwood sanatorium.

The pathological conditions for which alcohol is given might be classified variously. But perhaps the most useful classification clinically is into (1) acute and (2) chronic and recurrent. For it may be laid down as a general rule, to which there are very few exceptions, that from the standpoint of the initiation of the alcoholic habit, the medicinal use of alcohol is dangerous in proportion to the chronicity or frequency of the ailment for which the drug is prescribed. The same is admittedly true of other drugs, such as morphine and cocaine. The two classes, however, cannot be sharply defined : they shade imperceptibly into each other.

Pyrexial conditions.—These are the most important of the *acute* pathological conditions for which alcohol in some form has been largely prescribed. A number of patients have dated the commencement of their habit from the medicinal use of the drug in *typhoid*, *acute dysentery*, *malaria*, *influenza*, *septic abortion*, etc.,

or from the period of more or less prolonged convalescence which followed these diseases. Not so many years ago alcohol was very freely used during the pyrexial stage of typhoid: it was regarded, not, perhaps, as a specific, but certainly as all but essential to avert the tendency to circulatory failure which is the chief source of danger to life in the later stages. I have, myself, been fortunate in having a very extended practical experience of typhoid, and my experience covers a part of the time when alcohol in massive doses was the fashion.

I was in charge of the fever department of the Brisbane Hospital (Queensland) from 1885 until 1891. During the first eighteen months of this period I treated some six or seven hundred cases of typhoid by the ordinary expectant method, giving alcohol in the form of brandy or whisky, rather frequently, and in some cases very freely—to the extent of 8, 12, 16 or even more fluid ounces in the twenty-four hours—whenever it seemed necessary, as was then the custom. The chief indication was the condition of the heart and pulse. Economical considerations, however, precluded the use of alcohol except for the purpose of saving life: it was never given as a luxury or placebo. Consequently its use was always abandoned towards the end of the febrile stage, that is, well before convalescence had commenced. Used with these limitations, it was the decided opinion of all connected with the fever wards—visiting staff, house physicians, sisters and nurses—that alcohol never led to inebriety. Indeed, it was commonly remarked that the effect was rather to set up a distaste for alcohol—certainly

a distaste for that particular form of alcohol that had been administered during the illness.*

Impressed with these memories, I have for over six years carefully questioned all those sanatorium patients who have ascribed their alcoholism to the medicinal use of alcohol during an attack of febrile illness, and I find that, without exception, the alcohol has been continued into—usually well into, and often beyond—the convalescent stage. In not a few, wine, stout, etc., have been prescribed for the first time during retarded convalescence. The following is a marked example :

A retired sergeant-major in the foot-guards had always been abstemious in his habits, though not an abstainer, until he contracted dysentery in South Africa. His illness was severe, and entailed his being kept in bed for five months. During the whole of this time, he states that he lived mainly, if

* On January 1st, 1887, the treatment of typhoid by means of systematic cold bathing according to the method of Brand was introduced, and this plan has been carried out practically without interruption and with but few modifications up to the present day: my own superintendence ended in 1891, and between the above two dates some 1400 cases were treated. Amongst the many favourable changes which were observed to accrue from the change in the routine treatment, the fall in the amount of alcohol consumed was prominent. At the end of the first twelve months of systematic bathing it was seen that the alcohol bill for the fever wards had been reduced by at least three quarters. And this saving had not been due to any sudden change of opinion as to the value of alcohol in pyrexia: it had followed naturally through the rarity with which the circulatory symptoms, which were then supposed to call for alcohol, had arisen. In fact, after the introduction of cold bathing, the indications for the use of alcohol underwent a complete change. Previously it had been given to sustain the heart's action. Thereafter it was used for its vaso-dilative influence—to modify the vaso-constriction of the cutaneous area, and so to relieve shivering, and at the same time promote the abstraction of heat by the bath. (See 'The Cold-bath Treatment of Typhoid,' by Francis Hare: Macmillan & Co. 1898.)

not solely, on beaten-up eggs with either brandy or port wine. Ever since his convalescence he has been a pseudo-dipsomaniac, that is to say, he has been unable to touch alcohol in any form, even a glass of light beer, without immediately plunging into a heavy drinking bout.

It would appear that alcoholic euphoria—which is of course the only dangerous effect of alcohol from the standpoint of starting inebriety—is largely inconsistent with the existence of pyrexia, at any rate, acute pyrexia: I have never known the typhoid patient resent or even regret the stoppage of his whisky or brandy. Here, too, may be appropriately recalled the observation made by many, both physicians and patients, that during an attack of pyrexia, even a mere feverish cold, the desire for, and enjoyment of, some accustomed alcoholic drink, remains in complete abeyance for the time being. The same seems to be true, though to a much less extent, of some other narcotic drugs.

It is certain, however, that any antagonism which exists between alcoholic euphoria and pyrexia vanishes promptly at convalescence. Then and thenceforward for a time there is probably an exaggerated appreciation of alcoholic euphoria, and consequently an exaggerated danger of initiating the alcoholic habit. The special factors which during convalescence conduce to this increased danger are *physical weakness* and *mental depression*.

Physical weakness of some kind is common to the convalescent stage of practically all fevers; and when associated with anæmia, and especially absence of appetite, is the usual reason for the prescription of alcohol by the physician. The

danger of such prescription is, of course, intensified in fevers, such as malaria and dysentery, which are liable to become frequently recurrent, or to taper off into chronic sequelæ. His convalescence being tedious, the patient frets to resume his work, and the stimulant action of alcohol enables him to start in this direction. Unfortunately such stimulation is evanescent, and does not enable him to continue unless it is frequently repeated. Hence the imminent danger of starting chronic alcoholism. A high proportion of those who have entered the sanatorium have been resident in the tropics, and a majority of these have ascribed their habit to the prescription of alcohol in the debility and anæmia following malaria and dysentery, and to the continued use of alcohol in some form to enable them to resume work before they had fully recovered their strength.

In women, the commonest pyrexial condition which has been blamed for the commencement of inebriety is septic abortion or puerperal fever of some kind. Here, again, it is obviously the use of alcohol during the pain and discomfort of prolonged and often incomplete convalescence which has been mainly operative: its use during the sharp and severe pyrexia itself would have been immaterial. And in most of these cases, the medicinal use of alcohol has passed by insensible gradations, but uninterruptedly, into chronic alcoholism: there has rarely been any intermediate stage.

Mental depression as a symptom of convalescence from fevers generally does not seem to be of very common occurrence. But exceptions must certainly be made in the case of *influenza* in this country, and

of *dengue* in some parts of the tropics and subtropics : in the early convalescent period of both, some degree of mental depression is the rule rather than the exception. That which follows *dengue* is much the more severe, and has ended not very rarely in suicide. Both varieties have frequently initiated the alcoholic habit; and both almost invariably cause a gross exaggeration in the severity of an already existent alcoholism. A few cases have been admitted in which the history showed that post-*dengue* depression had been a factor in the past; but naturally the post-influenzal form is that which has almost exclusively come under notice at the sanatorium.

Post-influenzal depression lasts as a rule but a few days, and ceases somewhat suddenly: usually it is not severe. No doubt for those who are normally constituted it is of small importance, and is soon forgotten. But for all those (whether they are abstainers or not) who have already acquired an undue appreciation of alcoholic euphoria—who, in other words, have a vivid realisation of the immediate relief from depression which a large dose of alcohol is capable of affording—the convalescent stage of influenza is apt to be an event of grievous consequence. It constitutes a special and urgent demand for euphoria; and unfortunately it is a demand which comes at a time when the power of self-control is below the normal. Hence in the histories of alcoholists attacks of influenza have frequently marked fresh starting-points on the downward journey of alcoholism. And they prove, moreover, to be amongst the commonest of the intrinsic exciting factors of relapse in those who

have long been abstainers. Some persons have annual or biennial attacks of influenza, and such, if inclined to alcoholism, are especially unfortunate.

Much more potent as a class than the acute are the *chronic and recurrent morbid conditions* which are found to act as exciting factors of inebriety. They are also more numerous, and, being extremely varied, are difficult to classify.

Insanity.—Insanity or incipient insanity may be a cause or a result of inebriety. Until lately it was regarded as a common result. Quite recently, however, this has been questioned, and the present tendency is to consider the inebriety which is associated with insanity as very frequently an early symptom or manifestation of the oncoming mental disorder (Mott).

During the last $6\frac{1}{2}$ years at the Norwood Sanatorium there have been 762 admissions under the head of alcoholism; and of these 23 have been mentally unsound. Most of the 23 were sent into the sanatorium under a misapprehension. Either the mental symptoms were ascribed to the direct effect of alcohol, that is to say, the symptoms of insanity were mistaken for the symptoms of drunkenness—this was rare, however; or the mental symptoms were recognised as an indication of an insane condition, but this insane condition ascribed to alcoholism. Of course, in all cases, the mental disorder was regarded as temporary, and likely to subside rapidly under the influence of abstinence.

Yet observation after admission led to the conclusion that in only 5 of the 23 cases could the mental condition be ascribed to alcoholism. One of these

was a case of true periodic dipsomania, in which the cessation of each paroxysm was followed by acute melancholia lasting some weeks: this led eventually to suicide. Another, a case of polyneuritic psychosis, or Korsakow's disease, which began with the symptoms of delirium tremens. Yet another, a case which can only be regarded as chronic delirium tremens, or chronic alcoholic delirium, which recovered after some weeks in the sanatorium: here there was no polyneuritis, yet the mental condition was similar to that which may be observed in Korsakow's disease. In the other two of the five the mental symptoms did not amount to more than mild dementia, which appeared to depend mainly upon loss of memory.

In the remaining 18 cases there was little doubt that the inebriety constituted an early symptom of oncoming insanity, and was not causative. Amongst these were 2 cases of general paralysis, 2 of melancholia, 1 of severe hypochondriasis, and 1 of dementia, while 12 were cases of mild delusional insanity. On diagnosis, the majority were transferred from the sanatorium to other institutions.

Abnormal mental conditions not amounting to insanity.
—All the twenty-three cases included under the head of insanity were certifiable. A considerable number of patients, however, have been admitted in whom abnormal mental conditions, short of certifiable insanity, have certainly acted as exciting factors of inebriety. These may be referred to generally as *borderland cases, psychasthenics, etc.* In each usually some one special symptom was prominent. Claustrophobia (fear of being shut in some small place)

seems especially common. Many patients complained of being quite unable to travel by train without previously taking a large dose of alcohol. In some of these the objection was only to the *small* transverse railway compartment : a corridor carriage put them quite at ease. In others, the symptom was absent if the patient was accompanied by an acquaintance or even a stranger. The opposite phobia, namely, *agoraphobia*, also appears amongst the exciting factors, but seems to be less common. Here, also, alcohol in adequate doses has proved capable of abolishing the symptom for the time being. In one very marked case (described on p. 52), persistent agoraphobia was clearly the chief factor in the production of chronic alcoholism.

Ordinary *shyness* may amount to a mental disorder. And it is a psychical weakness which enters into the production of alcoholism and inebriety to a far greater extent than is generally realised. Those who have never suffered from it have no conception of the mental torture—I use the word advisedly—for which shyness may be responsible in certain emergencies and critical periods in the life of those who are so afflicted : I know of one instance in which a rather public breakdown due solely to shyness led to an undoubtedly serious and nearly successful attempt at self-destruction. Unfortunately for the shy, alcohol, and indeed narcotic drugs of almost any kind, can be absolutely relied upon to remove this seemingly ridiculous weakness for the time being. And perhaps, too, it is unfortunate that shyness—in common with affections such as sea-sickness and toothache—does not arouse much real sympathy in

others: the humorous aspect is too conspicuous. "Pulpit," "stage," and "speech" fright are special varieties of shyness; and all have been the chief exciting factors in different cases of alcoholism.

Only a few months ago the subject of "speech fright" evoked an epistolary discussion in one of the weekly medical journals, and one of the contributors seriously suggested as a preventive the taking of a small dose of laudanum just before the time when the sufferer would be called upon to speak. There is no doubt as to the immediate efficiency of the drug in these circumstances. But could any more certain means be devised of starting the opium habit? I know of none.

Mental depression. — Usually recurrent, even periodic, in its manifestation, but sometimes more or less continuous, mental depression is a very common asserted factor of inebriety. Two of the conditions under which it arises, namely, the early convalescent stages of influenza and dengue fever, have been considered already (p. 27). But referring only to patients admitted into the sanatorium, it has occurred also as a premonitory symptom of insanity, as a result of tobacco amblyopia, tabes, change of occupation involving loss of accustomed physical exercise, long-continued eye-strain, as a symptom of "suppressed gout," and of recurring or persistent high blood-pressure, as a sequela of morphinism and outbursts of dipsomania and pseudo-dipsomania, as a post-epileptic phenomenon, during the menopause, and in connection with menstruation, and from no known cause. Only a few of these factors require special notice.

Mental depression occurring in connection with *menstruation* is extremely common amongst female inebriates. In the great majority of those in whom it occurs it begins *during the two days preceding the commencement of the flow*. In some it commences during the flow, and in some others just after its termination. This menstrual incidence of mental depression has not been explained. But there are many analogous happenings. Periodic insanity is very prone to occur just before menstruation, as also are hysterical attacks. And it is not difficult to show that during the pre-menstrual period in many—perhaps the majority of—women, there is a psychical alteration, which, however, by no means always takes the form of depression; often there is restlessness, a craving for physical exercise, or, on the other hand, a longing for physical rest—the latter less frequently, however. The psychical and general symptoms of menstruation have, I think, best been collated in an important article by Dr. Helen McMurchy.*

This mental alteration undoubtedly explains the frequency of what is known as menstrual dipsomania. It is difficult to be sure that outbursts of inebriety occurring at the menstrual period should be classed as pure dipsomania—that they fully coincide with the definition of that disorder to be given later (p. 61). But there is no doubt that in a certain proportion of such cases there is no desire for alcohol during the intermenstrual epoch, and therefore no difficulty in abstaining; whereas the immediately pre-menstrual stage regularly brings with it an almost uncon-

* 'Lancet,' October 5th, 1901.

trollable impulse to indulge to excess. It is usual in this disorder to search for disease of the internal genitalia, but it is certain that even in the worst examples the uterus and its appendages may be, and usually are, macroscopically healthy. Moreover, when they are otherwise, it rarely happens that surgical interference (short of complete ablation of the appendages, which is not, of course, to be recommended) exerts any beneficial effect upon the recurring paroxysms.

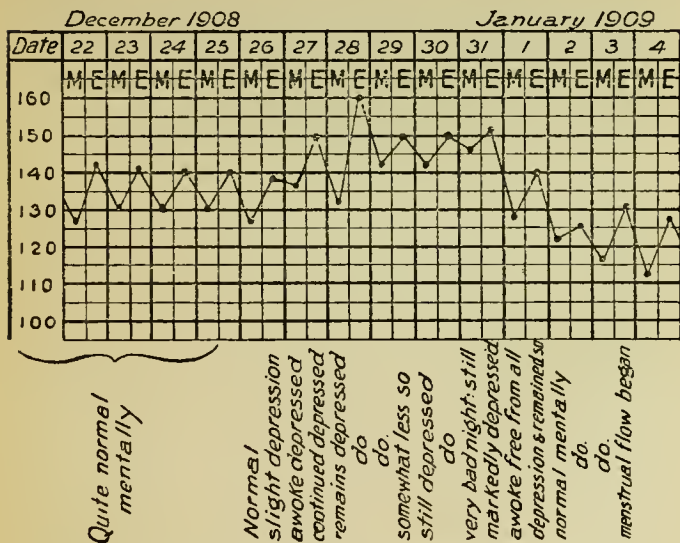
Probably it is the nervous or vaso-motor mechanism of menstruation which is at fault. Blood-pressure observations during menstruation in *normal* women are few, but the most recent do not show a constant variation.* On the other hand, "Rosse found that hysterical girls who complained of pain and other abnormal sensations during menstruation had a steady rise of 20 mm. Hg. during the flow, instead of normal or diminished pressure."† My own observations in cases of menstrual dipsomania so far as they go tend to show that during the immediately pre-menstrual stage there is a decided rise of blood-pressure, and that such rise coincides pretty accurately with the psychical alteration responsible for the dipsomaniac outbreak. Numerous observations, however, are required before this conclusion can be definitely accepted.

In the following case, the observations connect the pre-menstrual blood-pressure variation with the pre-menstrual mental depression very clearly. Morning and evening observations were taken regularly, so

* 'Clinical Study of Blood-pressure,' Janeway, 1907, p. 127.

† *Ibid.*, 257.

as to cover two menstrual periods. The patient was a single woman, aged 44 years. Her outbreaks of drunkenness were associated with, and obviously depended on, marked mental depression; they began as a rule three days before the commencement of menstruation, which was of somewhat irregular occurrence. They lasted two days only, both the depression and drinking ceasing suddenly one complete day or sometimes more before the commencement of the flow. The subjoined chart shows this clearly:—



The association of increased blood-pressure with mental depression is not restricted to the menstrual period. Mental depression occurs in connection with the *persistent high blood-pressure of middle and old*

age, as pointed out by Broadbent* ; and the most successful line of treatment is such as tends to relieve the circulatory disorder.

Mental depression occurring at the *menopause* is well recognised in the domain of psychological medicine ; it seems especially frequent in patients who have long suffered from pre-menstrual or menstrual attacks of depression. And in several cases admitted into the sanatorium severe climacteric inebriety has set in concurrently. It is customary—and certainly expedient—in such cases to hold out the hope that when the “change of life” has been completed there will be a great change for the better in all respects. And as a rule, it may be said that the climacteric mental depression is temporary, ceasing with the complete cessation of ovarian activity. Unfortunately, however, it does not always happen that the inebriety disappears simultaneously : this is, of course, especially true of those in whom the climacteric involution is prolonged. But it may, I think, be said of patients whose inebriety can be clearly traced to the menopause, that their chance of *ultimate* recovery is distinctly better than that of males of the same age suffering from inebriety of equal severity and duration.

Post-epileptic mental depression accounted for numerous outbreaks of inebriety in one patient admitted into the sanatorium.

The patient was a medical student, aged 32 years. His epileptic attacks began at the age of twenty-one after he had been working hard for one of his examinations. They were

* ‘The Pulse,’ 1890, pp. 177, 304.

for the most part atypical. His early seizures were of the nature of prolonged *petit mal*: they would begin without apparent cause, and consisted chiefly of giddiness and severe nervousness, lasting about fifteen minutes, and leaving him frightened and low spirited. Later they approximated to major epilepsy in character, and his tongue was injured on several occasions. He had some forty or fifty in all during twelve years. At the age of twenty-three the post-convulsive depression became more marked and prolonged, and thenceforward he acquired the habit of taking large quantities of whisky for relief. At other times he drank but little, and had no temptation to exceed.

I have been unable to follow up this case.

It remains to consider recurring or periodic attacks of mental depression without apparent cause, at any rate without causes generally accepted by the medical profession. I am not here referring to cases of true dipsomania, the outbreaks of which affection often commence with mental depression: dipsomania will be considered later. But many persons suffer at regular or irregular intervals from attacks of "the blues," which they are quite at a loss to explain, and which not rarely underlie a severe intermittent form of inebriety.

There is a mental depression, usually associated with, or leading to, a form of insomnia, which tends to recur daily in the small hours, between two and five or six a.m. The rate of combustion rises and falls rhythmically throughout the diurnal cycle, in accordance with the varying demand for force and heat production, and the period referred to corresponds, except in night workers, to the lowest rate of combustion (and to the lowest body temperature) in

the twenty-four hours.* It is at this time that asthma, angina pectoris, gout, some headaches and many other nervous disorders are especially prone to recur, and it is then that death most commonly takes place. Probably the same recurring fluctuation in combustion is at the bottom of the mental depression which regularly wakes some patients at this period of the day, and which occasionally starts, but more frequently exaggerates, alcoholism.

The tendency may be largely modified or abolished by refraining from food late in the evening, and by taking physical exercise between the last meal of the day and bedtime,† as in the following case :

Case of Nocturnal Mental Depression.

A clergyman, aged 63 years, though not an abstainer, had all his life been abstemious, or moderately so, until the last few years, during which he had suffered from a peculiar form of insomnia. He rarely found any difficulty in going to sleep : indeed, he habitually fell asleep almost at once on lying down. But during the last two years he had contracted the habit of waking every morning almost exactly at 2.30, whenceforward, unless he took alcohol, he would lie awake until 7 or 8 a.m. Moreover, immediately on waking he would be in a state of great mental depression, which would, however, slowly subside ; and he had come to the conclusion that it was the cerebral condition responsible for his depression, which actually woke him. Before admission he had been treated on and off unsuccessfully for about a year. After admission, total abstinence and several drugs were tried without result. He was then directed to make his chief meal at 1 p.m., to take a very

* 'The Food Factor in Disease,' Francis Hare, 1905, vol. i, p. 95 *et seq.*

† *Op. cit.*, vol. i, p. 227 *et seq.*

light dinner in the evening at 7, and to interpose between this meal and bedtime a considerable amount of walking exercise. The night following the change in his habits he slept uninterruptedly throughout, and this continued. Six months later he had had no return of his special trouble and remained an abstainer.

It is to be remarked that it was the *depression* which induced him to enter the Sanatorium. Simple insomnia he would have put up with, as he was a man of ample leisure, and, as he said, could always read during the night, and sleep during the forenoon, if necessary.

Some attacks of mental depression are coincident with, if not dependent on, recurring *attacks of high blood-pressure*. The following case—one amongst three or four admitted—is typical of this small class :

A business man, aged 49 years, had suffered for some four or five years from obscure and indescribable nervous attacks lasting several days. After a period of mental comfort and good health of variable duration, he would be seized (usually in the morning on waking) with a feeling of oppression in the head, hardly amounting to an ache: coincidentally he would be nervous, excitable, and mentally depressed. Then he would often be driven to take alcohol in the endeavour to obtain relief. If he took spirits he would quickly become almost maniacal and dangerous both to himself and others, though not always simultaneously. He had attempted his life more than once, though there is some doubt whether such attempts were quite serious; also he had made violent assaults on others, even those to whom he was much attached, and it is certain that some of these might have resulted very seriously. During the whole attack he would suffer severely from insomnia, which necessitated hypnotics every night.

Warned by the effects of spirits, he had for two years

limited his alcoholic intake during attacks to bottled ale. Even ale, however, and that in but moderate quantity, would render him practically irresponsible, and his family would be forced to send him back frequently to the Sanatorium. While in the sanatorium his "head" attacks continued to recur, but on no occasion had they led to his taking alcohol.

He was examined for eye-strain. There was some hypermetropic astigmatism, but correction of the error proved ineffectual for relief.

Finally a series of observations on his blood-pressure was made. It was found that during his intervals of mental comfort his maximum systolic blood-pressure varied from 126 to 138 mm. Hg; but that when "suffering with his head" it would usually be over 150 mm. Hg. Further, there was a direct relation between the severity of his attacks and the height of his blood-pressure: during one of his worst the pressure attained 164 mm. Hg.

He was treated as for persistent high blood-pressure. Potassium iodide in five-grain doses was given thrice daily, and calomel (2 grains) twice weekly. He was also dieted. Meat, fish and eggs, one or all at each of his three meals; green, non-starchy vegetables *ad lib.*; and his carbohydrate intake reduced to from three to five ounces *per diem, i. e.* to the lowest point which experiment showed to be consistent with the maintenance of his body-weight. Regular but moderate physical exercise was enjoined.

The above treatment was carried out consistently for three months. His attacks ceased, no hypnotics were required, and his blood-pressure kept for the most part between 126 and 136 mm. Hg. On two occasions it rose to 140 and 142 mm. Hg. respectively, associated with very slight depression: this was when he had become a little careless in carrying out instructions. But on the whole he had enjoyed better health, mental and physical, than for the previous half-dozen years.

Change of occupation involving the *loss of accustomed physical exercise* has led to attacks of mental depression and consequent inebriety in several cases admitted. In the following case such causation was clearly established :

A University graduate, aged 25 years, entered his father's office, in which the hours were long. Practically the only exercise he then had was in walking between his home and the office morning and evening. Previously he had led a very active outdoor life and was well known in athletic circles. He was of a lean and muscular habit, and showed no tendency to accumulate fat, as is so often the case with athletes on giving up exercise. Instead, he soon began to suffer from mental depression. This led to serious outbreaks of inebriety and to his admission into the sanatorium.

While in the sanatorium he spent most of the day rinking in the Crystal Palace, and all depression quickly vanished. Moreover, it was found that each individual attack of depression could be completely dispersed by any form of muscular exercise lasting about an hour. He was advised to give up office work, which fortunately he was in a position to do. On leaving he was employed in outdoor work connected with his father's business, and the result was entirely satisfactory : both his depression and inebriety ceased. Twelve months later he remained well in all respects.

Insomnia.—Insomnia is a very common exciting factor of inebriety. The following is a typical case :

A married man of means and no occupation, aged 37 years, had suffered from many outbreaks of inebriety, which might be described as gradually commencing and rather prolonged attacks of pseudo-dipsomania (*vide* p. 71). During his

intervals he was an abstainer, and all his outbursts started in the same way. After a period of abstinence he would, usually in consequence of some slight domestic worry, but sometimes from no known cause, begin to suffer from insomnia. A little wine at his late dinner, with a single "night-cap" of spirits, would set him quite right as regards sleep. But he would have to continue this indulgence. Nevertheless, he found no difficulty in avoiding any material increase for two or three months. But at the end of that period he would commence to experience a compelling and continuous craving for alcohol, which, unless he quickly entered the sanatorium, inevitably developed into a typical outburst of pseudo-dipsomania.

Debilitating conditions.—Any chronic affection leading to, or associated with, *anæmia* or *physical* or *nervous debility* may eventuate in inebriety if alcohol in any form is prescribed by the physician as part of a scheme of diet. The result will be determined by the existence or the reverse of the predisposing causes in the patient. Naturally, the large majority of such patients escape the formation of the alcoholic habit. But apart from a well-marked family history of alcoholism or other drug habits—which is by no means always present, and even when present, not invariably a sign of special danger—there is no guide whereby it is possible to discriminate in advance between patients for whom alcohol is specially dangerous and those for whom it may be prescribed with comparative safety. It is better, therefore, to avoid alcohol in any of its well-known forms. In the few cases in which it is supposed to be specially indicated, it can always be prescribed as a mixture in which its taste is more

or less concealed by that of other drugs—such as ammonia—of less pleasant flavour.

The prescription of port wine or stout for *chlorosis* has been the commencement of the alcoholic habit in four or five of the female patients admitted to the sanatorium. In one very intractable case there had been *scoliosis* also :

The patient when a school-girl spent many months in the supine position. Frequent generous meals were ordered, and port wine given whenever appetite was deficient. The wine was taken readily. The less the appetite the more wine was given to compensate. A port-wine habit was soon established. At the time of her marriage, at the age of 28, she was taking regularly eight glasses a day. After marriage the amount steadily rose. She entered the sanatorium at the age of 37. For two-and-a-half years previously she had been taking considerably more than a bottle a day, with other alcoholic drinks, and had frequently shown signs of intoxication.

Prolonged lactation is stated to have led to inebriety through the prolonged local irritation (Crothers). In the sanatorium prolonged lactation was the starting-point in two cases, but the steps in the acquirement of the habit seem to have been debility, anæmia, and emaciation. The physical condition in both seemed to call for the prescription of stout. There is a wide-spread belief amongst the older members of the nursing sisterhood that stout above all else “makes milk.” Were this well based, it might perhaps be justifiable to take some risk of inebriety for the sake of a weakly infant. But in point of fact there is no scientific basis for the belief. As has often been pointed out, the fluid most helpful for

the nursing mother, both in her own and the infant's interests, is milk—good fresh cow's milk. Prolonged lactation as an exciting factor is much commoner amongst the poor than in the class which frequents the sanatorium.

Dyspepsia has been responsible for the commencement of the alcoholic habit in some cases. Naturally these have usually been those in which alcohol was found to give relief from the gastric discomfort. The following is a case in point :

A stockbroker, aged 41 years, had been a total abstainer up to the age of thirty-two : this on account of a very clear and marked hereditary tendency to alcoholic excess. He then became affected with almost constant dyspepsia. Treatment of various kinds failed. Finally he consented to take some alcohol with his meals. This gave complete relief from the dyspepsia, and as a result he put on nearly two stone in weight in three months. But he rapidly became an inebriate, and remained so until after he had been twice treated in the sanatorium.

In another case dyspeptic attacks led to exaggerated drinking, and would certainly have prevented the patient from remaining an abstainer had he not been successfully treated.

The patient was a gentleman, aged 29 years, who had become a chronic alcoholic since returning from the Boer War. At times he took very large quantities of spirits in a very short time and became intoxicated. This happened whenever he suffered acute gastric flatulence. The distension of the stomach induced severe palpitation and great irregularity of the heart's action, accompanied with cold sweats and such terror that he hardly knew what he

was doing at the time. The attacks continued to recur occasionally for a time after he had ceased drinking, and would have undoubtedly led to a relapse. Fortunately, it was found that they could be completely prevented by eating very slowly, and taking no liquid of any sort at meal times or for an hour beforehand or subsequently.

On the other hand, several cases have occurred in which an attack of dyspepsia has removed the wish for alcohol for the time being.

Neurasthenia, in its numerous and varied manifestations, is constantly advanced as a cause of alcoholism, whether correctly so or not, is difficult to decide. There is no doubt, however, that it is a very common excuse. And there is equally no doubt that it is a fairly common result. *Neurasthenia* is almost impossible of definition. But *neurasthenics* pass by insensible gradations into *psychasthenics*, *psychasthenics* into borderland cases, and these again into cases of overt insanity. This subject is too wide to be more than merely referred to here.

Recurrent or paroxysmal affections—for the most part due to disorder in the vaso-motor nervous system—such as dysmenorrhœa, asthma, periodic sick-headache or migraine, paroxysmal tachycardia, neuralgia, especially of the fifth, and sciatica, even functional angina pectoris, and the paroxysms described by Gowers as vaso-vagal, have all proved exciting factors of inebriety in cases admitted into the sanatorium.

Dysmenorrhœa.—This has proved the most frequently operative in the above list. It is undoubted that congestive dysmenorrhœa may be relieved or abolished for the time being by an adequate dose of alcohol, no matter what be the nature of the local

lesion (if any) discoverable on examination. Unfortunately, too, the fact is widely known, and very commonly taken advantage of, the usual form in which alcohol is taken being hot gin and water.

To explain the anodyne influence of alcohol in dysmenorrhœa it is necessary to recall and bear in mind the *mechanism of menstruation*. The menstrual flow—the oozing of blood from the mucous membrane of the uterus—depends directly upon a certain degree of vascular distension in the uterine mucosa. This vascular distension itself depends on three factors, namely: (1) the force exerted by heart-beat: (2) the dilated condition of the uterine arteries and arterioles; and (3) the undilated condition of the arteries in other areas—in other words, the maintenance in the aggregate of other vascular areas of the normal degree of arterial tone or vaso-constriction. (It seems probable, in some cases at least, that the general arterial tone is actually somewhat increased during menstruation.) All three factors are essential. It follows that by modifying any one, we may modify the vascular distension (congestion) of the uterine mucosa. Alcohol is a vaso-dilator, and its administration modifies the third factor—the general arterial tone. Simultaneously, there is a decrease in the menstrual flow, a decrease in the vascular distension of the uterus, and relief, partial or complete, from the pelvic and ovarian pain—of which pain, vascular distension or congestion is undoubtedly one essential factor. But alcohol, though perhaps the most convenient, is by no means the best, of the vaso-dilators. Even more efficient is the whole series of the nitrites. Amyl nitrite, indeed, may be said to be too efficient,

since as a rule it stops the menstrual flow completely, for the time being at least: it should be avoided except in cases of menorrhagia, and then used only towards the natural end of the period. Nitro-glycerine gives ample relief, but probably in the majority of cases spiritus ætheris nitrosi is all that is required.

Asthma.—Paroxysms of asthma stand to inebriety in precisely the same causative relation as attacks of painful menstruation: they are less important only because they are less frequent, and because the relief from asthmatic dyspnœa which follows alcohol is less common, and perhaps, as a rule, less complete. But there are numerous cases of asthma in which alcohol not only gives absolute relief, but was for a long time the only known remedy which would do so (Hyde Salter). I do not know how those physicians explain this action of alcohol who still believe that the obstructive dyspnœa of the complaint depends upon constriction of the bronchioles by their own circular muscle-fibres. But for those who, like myself, hold a vaso-motor view, there is no difficulty whatever. The vaso-motor view, however, must be fully stated. Too often the obstructive swelling of the bronchiolar mucosa is said simply to depend on dilatation of the contained arterioles. This statement is less than a half-truth, and helps the explanation not at all. Even more obviously than is the case with menstruation, the vascular distension (congestion or swelling) of the mucous membrane in question depends on three factors, namely—(1) the force exerted by the heart-beat: (2) the dilated condition of the bronchial arteries and arterioles; and (3) the undilated, or rather the *exaggeratedly constricted* con-

dition of the arteries in other areas, notably the cutaneous area. (The smallness of the radial artery during the asthmatic paroxysm and its enlargement synchronously with the cessation of the paroxysm was noted nearly half a century ago by Hyde Salter.) As in dysmenorrhœa, so in asthma, modification of any one of the three circulatory factors will modify the distress of the affection; but the factor modified or removed by alcohol is in both cases undoubtedly the same, namely, the undilated or constricted condition of the arteries generally—these arteries are by it promptly dilated. In the following case the action of alcohol in asthma was well shown; and it is difficult to see how any similar patient so treated could possibly escape inebriety:

A gentleman, aged 25 years, had suffered from asthma practically since birth. At the age of eleven he was ordered to take whiskey whenever a paroxysm occurred or even threatened. The effect of whiskey was "magical": a very little would completely disperse all dyspnoea. He had continued the same treatment ever since; but as his asthma attacks had been very frequent, so had his resorts to whiskey. Moreover, he had soon found that to be efficient the drug had to be taken in continually increasing doses. On entering the sanatorium he had become a typical pseudo-dipsomaniac. The history of each dipsomaniac outbreak was as follows: an attack of asthma, a stiff glass of whiskey giving instant relief: dipsomaniac craving and continued heavy drinking until laid up with gastric catarrh and prostration. It was noteworthy that so long as he continued to drink, no matter how ill he became, he suffered from no trace of asthma. The asthma returned only after *full* convalescence.

Did it act as a heart stimulant, as once was

thought, alcohol could but increase the asthmatic dyspnœa. Clearly its action is merely vaso-dilative, and it is a pity that it should ever be used for this purpose, since many other drugs, free from any danger of setting up habits, are equally or more efficient. In the case just cited nitro-glycerine acted as promptly as whiskey.

Recurrent neuralgic and allied painful conditions.—These do not so frequently act as exciting factors of alcoholism as of morphinism. Still, patients have been admitted who have ascribed their alcoholic habit to sciatica, neuralgia of the fifth, migraine and functional angina pectoris respectively. It is noteworthy, that in all these alcohol gave temporary relief from the painful paroxysm, and was taken in the first instance with this object. It is perhaps the general rule that alcohol does give relief in such cases, but there are certainly many exceptions, especially in neuralgias affecting the face and head. In many cases of neuralgia of the fifth and in many migraines alcohol even in small doses markedly increases the pain. This apparent inconsistency in the action of alcohol has not been clearly explained. Possibly it may be that in some cases the vaso-dilative, in others the cardio-stimulant, action preponderates.

In one instance—that of a lady suffering also from slight mitral insufficiency—*paroxysmal tachycardia* was the chief exciting factor of inebriety. And in one other the paroxysm which led to the use of alcohol was such as has been described by Gowers under the title of vaso-vagal attacks. In both these cases alcohol gave very marked relief.

Eye-strain.—Only during quite recent years has eye-strain been brought prominently forward as a common factor in functional disorders of the nervous system. And the credit must, I think, be given very largely to the persistent and enthusiastic advocacy of Dr. George M. Gould, of Philadelphia.* Gould contends that practically all migraines and most headaches, numerous neuralgias and many dyspepsias, together with their associated symptoms, especially insomnia and mental depression, besides many other functional disorders of the nervous system, even epilepsy in some cases, depend upon the “loss of nerve force” which is occasioned by the constant muscular effort needed to produce clear vision in an eye that is optically faulty. He considers that, if anything, he has under-stated the importance of ametropia as a pathological factor. His critics, on the other hand, have consistently accused him of gross exaggeration.

I suggest that both are right. This seeming paradox is susceptible of explanation by the inefficiency of the existing classification of disease—a classification which, having no relation to causation, and being merely anatomical or regional, is of necessity artificial. It is certain that some migraines and many ordinary headaches do depend fundamentally upon errors of refraction, especially, perhaps, hypermetropia with astigmatism, and that such cases can be fully relieved by accurate correction by glasses. But it is equally certain that many more migraines and headaches have no connection whatever with the eyes: both, as Harry Campbell has pointed out,

* ‘Biographic Clinics,’ 1904, P. Blakiston & Sons.

occur at times in the blind. Herein Gould may be charged with exaggeration. But he has also understated his case. For it can be shown that many functional disorders of the nervous system, other than those enumerated by Gould, but which are both clinically and pathologically nearly allied to migraine, may also, in some cases, depend on ametropia, and are then equally susceptible of relief by accurate correction by glasses. Edward Liveing,* writing so far back as 1873, refers to a case of angina pectoris, in which the use of suitable glasses put an end to the recurring paroxysms. Dysmenorrhœa, referred to a few pages back as sometimes due to vaso-motor disorder, has been traced in some cases by Howard Kelly,† Ernest Runge,‡ and others to hypermetropia. Albert Fardon§ has published a case in which enuresis was due to the same optical error. And Dr. Alexander Francis and myself have met with more than one case in which typical asthma was similarly caused.

It would be matter of surprise, therefore, to find that eye-strain has no ætiological bearing on alcoholism. *A priori* it is certain to be a factor: *à posteriori*, however, it cannot be regarded as a frequent factor: still less can it be claimed that the use of spectacles has often resulted in recovery from alcoholism. However, in a small minority this happy result has been attained.

Of twenty cases examined under complete

* 'Migraine and Sick Headache.'

† 'Medical Gynæcology,' 1908, London, Sydney Appleton.

‡ 'Gynæcology and Obstetrics in Relation to Ophthalmology,' 1908.

§ 'Lancet,' December 11th, 1909, p. 1743.

myoplegia, in fourteen were found errors of refraction sufficient to cause eye-strain, and presumably, therefore, to lead directly or indirectly to alcoholism. Six of the fourteen have done well, that is, remained abstainers when last heard of from their medical attendants. But in only two of these was the evidence conclusive that the elimination of eye-strain was the essential factor in the patient's convalescence. In the other four the glasses prescribed may or may not have been the chief factor: probably in all they were contributory; and it is obvious that in none could they have been other than advantageous generally. The two cases seem worth describing in detail.

Case of Agoraphobia, etc., and consequent Alcoholism due to Eye-strain.

A clergyman, aged 45 years, had suffered for twelve years or more from a painful sensation of constriction round the head, associated with paroxysms of vertigo and fright. The constrictive sensation was rarely absent while he was awake: the vertigo and fear attacked him whenever he attempted to cross an open space. In order to pass from the vicarage to the church it was necessary to cross the market-place. He was unable to accomplish this without assistance or without alcohol. At first a small dose of alcohol dispersed the agoraphobia and relieved the sense of constriction, but as time passed the effectual dose increased. He took alcohol in steadily increasing doses in order to continue his work. He had in consequence several "nervous breakdowns." He had many holidays and several sea voyages, and went through more than one rest-cure, all with temporary benefit. But his symptoms returned on resuming his work. A week before his admission he had had an

attack of delirium tremens, previous to which he had been drinking about a bottle of whiskey a day.

His eyes were then examined by an oculist, who reported as follows: "Under atropine he has 3 D. of hypermetropia with extra 0.5 D. of astigmatism in each eye (oblique axes). I have ordered him a little under the full correction to begin with, to be worn in spectacles for all purposes, and constantly. Before he had a mydriatic he could see $\frac{6}{6}$ without correction, owing to the exertion of accommodation, but + 2.5 D. spherical gave the best part of $\frac{6}{6}$. At his age there is not much more than 3.50 to 4 D. of accommodation, so that he has been using a large proportion of his total for distant vision for some considerable time, and it is fatiguing to use more than two-thirds habitually."

Correction of the above errors by glasses removed his symptoms at once. The sensation of constriction from which he had suffered continually for many years left him almost immediately, and he experienced no difficulty in crossing open spaces. Nine months later he had had no return of either symptom, and remained an abstainer.

Case of Frontal Neuralgia and consequent Alcoholism due to Eye-strain.

A lady, aged 41 years, had suffered since puberty from bilateral frontal neuralgia, the pain shooting down the cervical spine and into the triangles of the neck, where the glands seemed to become enlarged and tender: it extended sometimes to the mid-sternum. Her worst attacks were just before and just after each menstrual period, but they were liable to occur at any time. Alcohol always gave relief, and she ascribes her inebriety very largely to her neuralgia. Under examination there was found to be 1.5 D. of hypermetropia in one eye and 1.25 D. in the other; in addition there was 1 D. of astigmatism in both. After correction by glasses the neuralgia practically disappeared.

Two years later she remained well as regards alcoholism, and very much better as regards neuralgia.

It is noteworthy that in both the above cases the symptoms were greatly relieved by the atropine myoplegia which preceded the examination.

There is a certain degree of similarity amongst patients whose alcoholism depends primarily on eye-strain—a similarity which, however, they share with many others. As was to be expected, their occupation is usually such as demands continued use of the eyes at close range: whether astigmatic or not, they are usually hypermetropic: they nearly all claim to be endowed with excellent sight: they have begun the use of alcohol, not as a self-indulgence, but as a drug for the relief of special symptoms, or to stimulate flagging energies and increase their output of work. They drink as a rule in secret; and they do not for long periods become intoxicated, at any rate, overtly so. In short, their histories resemble histories of drug cases rather than ordinary cases of alcoholism.

Morphinism.—In certain communities, especially the oriental tropics, where the action of opiates is very generally known, alcoholism leads not infrequently to morphinism: usually morphine is taken in the first place for its sobering influence in emergencies. But the converse is not true. Morphinism is not a *common* exciting factor of alcoholism,* although

* It would appear from quite recent experience that in districts where opium is systematically used by the population there is a decided danger of alcoholism following on any shortage in the supply of the drug. The last Government Report on Wei-hai-wei states that the diminution in the use of opium (brought about by recent legislation) seems to be leading to excessive use of alcohol. Though drunkenness cannot yet be said to be prevalent, cases are undoubtedly more numerous.

a certain number of morphinists resort eventually to alcohol in order to avert the danger of further increasing the dose of the drug when tolerance to morphine has become well established. Nevertheless, some (morphinists, opium eaters, laudanum drinkers and others) become alcoholists subsequently to convalescence from the original drug habits. And the form of alcoholism then set up is, in my experience, very severe. Perhaps it is worse when alcohol has been used in order to break the drug habit, as in the following case :

Severe Alcoholism, replacing Laudanum Drinking.

A native of Hindustan contracted the habit of drinking laudanum for asthma, eventually taking several fluid ounces a day. Hitherto an abstainer from alcohol he determined to break himself of his opium habit by substituting whiskey. Herein he succeeded, but found that the whiskey required for his purpose varied between *two and a half* and *four* bottles *per diem*. He failed to reduce this amount, and entered the sanatorium some months later to be treated for alcoholism. This is, of course, an extreme case.

But the danger of falling into severe alcoholism continues for a considerable time—many months at any rate—after the patient has been successfully weaned from morphinism. It is well recognised that the danger of relapse into morphinism is acute just after complete withdrawal, and only subsides slowly : this is owing to the periods of depression and consequent craving for the drug, which continue to recur, but at lengthening intervals, and with decreasing severity. And if, during this somewhat indefinite period, alcohol is taken as a lesser of two evils, it

commonly happens that the patient becomes a violent and impulsive drinker, although he may never before have had any tendency to alcoholic excess. Several examples have occurred. The following is one in which recovery had not taken place six months ago :

Case of alternating Cocainism, Morphinism, and Alcoholism.

A gentleman, aged 25 years, had at the age of eighteen used cocaine, obtained from a chemist for toothache. He continued to paint his gums with the solution of the drug when he had ceased to have toothache : this for about six years. He was then advised by a medical man, himself a drug *habitué*, to use morphine hypodermically, in order to free himself from the cocaine habit. In this endeavour he was successful, but found it impossible to refrain from using morphine. Within twelve months he was taking about twelve grains a day. On several occasions he had been "cured" of the habit in different institutions, twice in this sanatorium, but he always relapsed within a few weeks. On the last occasion he took to alcohol instead, and quickly became a very impulsive drunkard. Several times since he has alternated between alcoholism and morphinism, and exhibits alternately many of the features peculiar to each form of narcomania. When indulging in morphine, he is anæmic and debilitated neurotic, timid and diffident, careful in his dress and fastidious in his habits and language : when drinking, he becomes florid and bloated, overbearing and quarrelsome, careless in his dress, dirty in his habits and much given to profanity. It is true to say that he has two personalities—a morphine and an alcoholic personality. Whichever of the two habits is the worse for himself, there is no doubt that the alcoholism is the worse for his relatives and friends, who, when I last heard of the patient, were congratulating themselves on his reversion to morphine.

Bearing in mind all such cases, it cannot too strongly be insisted that the use of alcohol is fraught with exceptional danger, both in the process of withdrawal of morphine (and no doubt other narcotic drugs) and for a considerable time afterwards.

Gout.—There is no doubt, of course, that gout is often a result of alcoholism, at any rate, of some forms of alcoholism. But some authors regard it also as a cause. The variety chiefly blamed is irregular or abarticular gout (Crothers). But abarticular gout may mean almost any kind of functional disorder: by some, many asthmas and various types of headache are included under the head of gouty affections. And if this classification is admitted, then undoubtedly gout must often be blamed for alcoholism. But there is a clearer and more direct relationship between the two, one example of which was seen in the sanatorium. The patient was a quite moderate drinker of beer, which he took only at meals. Suddenly he had an acute and typical attack of articular gout, which laid him up for two or three weeks. He was ordered never to take malt liquors of any kind again, but to limit himself to whiskey and soda. The change, however, was the beginning of inebriety. Before a year had elapsed, he had advanced so far in alcoholism that he was obliged to enter the sanatorium for treatment.

Extreme physical fitness.—It must be admitted that inebriety of whatever form has no *necessary* connection with bad or indifferent health, or with pathological affections of any kind. Many patients maintain that so long as there is anything at all the matter with them, they are safe; and that the danger of an

outbreak commences only when their physical health has returned to a high level—when they are feeling particularly “fit.” But it does not follow that in all such cases the sensation of fitness is the *cause* of the succeeding outbreak. It may be a mere premonitory or initial symptom of a recurring outbreak of dipsomania. It is to be remembered that the same feeling of extra well-being has been observed not infrequently regularly to precede attacks of migraine, asthma, and even acute articular gout.

CHAPTER III

Clinical classification of alcoholism; recurrent or intermittent; chronic or continuous—Dipsomania—Pseudo-dipsomania—Chronic or continuous alcoholism, inebriate and sober—Intermediate cases; absence of sharp lines of demarcation between the four varieties of alcoholism; consequent difficulty of classification—Dipsomaniac craving and alcoholic craving.

THE ætiological classification outlined in Chapter I does not accurately harmonise with, or even include, all the clinical varieties of alcoholism. Similarity of known causation does not involve similarity of results: which means simply that our knowledge of the factors of alcoholism is at present far from complete. Obviously, an *identity of causation* must necessarily be followed by *identity of results*.

Many clinical classifications have been suggested, each having some special advantage. The classification here adopted has perhaps the advantage of simplicity; but like all others it must be regarded provisional.

Primarily, alcoholism may be divided into: (1) recurrent or intermittent; and (2) chronic or continuous. The former is often spoken of loosely as dipsomania, the latter, equally loosely as chronic inebriety. Such a rough classification involves at least two fallacies: (a) the majority of intermittent alcoholists are not

dipsomaniacs ; and (b) a very large proportion of chronic alcoholists are not inebriates at all.

These fallacies may be avoided by sub-dividing each class into two, as follows :

- | | | |
|---|---|---|
| I. Recurrent or inter-
mittent alcoholism. | { | 1. Dipsomania or true
dipsomania. |
| | { | 2. Pseudo-dipsomania. |
| II. Chronic or con-
tinuous alcoholism. | { | 3. Chronic inebriate
alcoholism or
chronic inebriety. |
| | { | 4. Chronic non-ine-
briate, or sober,
alcoholism. |

The above four classes could be further sub-divided, but little would be gained by this : even as they stand, the dividing lines between them will be found to be sufficiently indefinite.

DIPSOMANIA.

Dipsomania, or true dipsomania as it is often termed, has important distinctions from pseudo-dipsomania. By many writers it has been removed altogether from the general category of inebriety, and classed as intermittent insanity—a recurrent mono-mania. Whether such is strictly correct or not I am unprepared to say ; nor do I think the question can be definitely settled at present. It is certain, at least, that the cases referred to are not often found in asylums for the insane.

In dipsomania there is complete indifference to—sometimes even distinct aversion from—alcohol of all kinds during the quiescent interval. The interval

between the *onsets* of any two paroxysms may be of quite regular duration—some writers state that this is so in the majority of cases. But in my own experience exact regularity of intervals has been exceptional. At the end of the interval “there is noticed an alteration in character and temper that forewarns those who have anything to do with the patient”* that an attack is impending.

All the points in this description are important. The indifference to alcohol during the interval is complete: the alteration in character and temper *precedes* the consumption of even a small quantity of alcohol; and the change is *without apparent cause*. The periodicity of the disorder is seemingly inherent. The following two cases are the most typical examples of true dipsomania which have been brought to the sanatorium :

Case 1.—True Periodic Dipsomania.

A tradesman, aged 50 years, entered during a paroxysm. Since the age of fifteen he had suffered from periodic outbreaks of dipsomania, which had steadily increased in severity, but not, fortunately for him, in frequency. The paroxysms were widely separated, the intervals varying between eight months and four years: usually they lasted two or three years. There was never any apparent cause for the attack, but the patient could always recognise its approach by indefinite but well-known symptoms, which began four or five days before he touched alcohol. During this premonitory stage he would carry on a fight of steadily increasing severity against the craving for alcohol: by a very special effort of will he could hold out for six days,

* ‘Disease of Inebriety.’ By the American Association for the Study and Cure of Inebriety, 1893, p. 29.

never more. The paroxysm would last two, three or more weeks—in fact, until he was completely prostrated by gastric catarrh, incessant vomiting, etc., and confined to bed in the hands of his medical attendant.

Many points in this case are of extreme interest. During his long quiescent intervals he rarely touched alcohol in any form, for the simple reason that it had no attraction for him. He was then a hard-working and successful tradesman, much liked and highly respected in his community. But on rare occasions he would be at some convivial meeting—for example, a masonic banquet where he occupied an official position. Then he would take a few glasses of whiskey “out of consideration for the feelings of the company,” or more probably to avoid drawing attention to his known weakness. On such occasions (1) a very small quantity of spirits would get into his head—he would show symptoms of slight intoxication; but (2) there would never be the least temptation to continue drinking on the following day. On the other hand, at the commencement of one of his regular forewarned outbreaks (1) he would take very large quantities of spirits without showing any of the signs of even slight intoxication, and (2) the impulse to continue drinking on the following day would always be irresistible.

The second case shows a remarkably regular periodicity: it demonstrates also the ease with which the dipsomaniac paroxysm may be aborted, even when it has clearly commenced, but especially on the rare occasions when the patient can be brought under medical supervision during the premonitory stage, that is, before any alcohol has been indulged in. The treatment adopted is, in my view, the best known method of dealing with dipsomania. Unfortunately, for obvious reasons, the opportunity for such treatment is rarely afforded.

Case 2.—True Periodic Dipsomania.

A gentleman, aged 39 years, business manager of a large daily paper, entered the sanatorium in May, 1908, very drunk and necessitating special attendants. He had been drinking hard for three weeks. The history which he gave later showed that he was a true periodic dipsomaniac, the attacks coming on exactly every three months (ninety to ninety-one days). This had been the case for twelve years, before which he had been a moderate but regular drinker. In the intervals between his paroxysms he was an abstainer, and there was a distinct premonitory period lasting six or seven days before he commenced to take alcohol. The premonitory symptoms were always the same, and were manifest to others. They were restlessness, inability to concentrate his attention, irritability of temper, insomnia, and continuous and unquenchable thirst; but during the whole of this stage there was absolutely no desire for alcohol. All his symptoms would increase up to the point at which craving for alcohol commenced: this would usually be on the sixth day. The period of drinking which ensued would, if not interfered with medically, last from three to four weeks, in fact until the patient was prostrated with constant vomiting. On a few occasions he had successfully resisted the attack: then his symptoms, which were those of the premonitory stage plus craving for alcohol, would last just a fortnight. Thus he had occasionally been an abstainer for six months continuously.

He was treated with apomorphine as described in the chapter on treatment.

He remained well for six months, and re-entered the sanatorium in November, 1908. On this occasion he had been taking alcohol for six days only.

He next re-entered in February, 1909, in the same state of intoxication, but having been taking alcohol for only three days.

His last admission was in the following April. On this occasion he had not commenced the alcoholic stage. He was in the fifth day of his premonitory period, and was drinking water continuously.

The case well illustrates the value of apomorphine in dipsomania. When intoxicated on admission, he was given a full emetic dose of this drug (say $\frac{1}{15}$ gr.) followed by a few small doses during the next day or so. On his last admission he merely had $\frac{1}{35}$ gr. and $\frac{1}{40}$ gr. respectively at bedtime on the first two days. Before entering he had had very little sleep, and that broken up into "snatches." After the first dose of apomorphine he slept for seven hours continuously, and expressed himself as very much better next day, though still somewhat thirsty. After the second dose he slept for eight hours continuously, and expressed himself as absolutely well next day. *All* his symptoms had then ceased: in fact the paroxysm had been aborted.

It was explained to him that in order to break up the pathological tendency to recurrence, it was probably almost as necessary to cut short the premonitory period as the alcoholic stage. Accordingly he promised to come in next time at the very commencement of the warning symptoms. It is to be regretted that herein he failed.

Such cases of true dipsomania in which the periodicity is undoubtedly inherent and has no relation to external circumstances are, I am inclined to think, much rarer than is commonly supposed: only twenty-one have been admitted during the last six years. In them there would seem to be a double personality—an interim and a paroxysmal personality: this is shown by a change not merely in character and temper, but in certain physical conditions. The psychical change does not depend upon alcohol, for it always occurs before any alcohol

has been consumed. The premonitory stage may last many days, even a week, before alcohol of any kind is indulged in. During the paroxysm there may be (as in Case 1 detailed above) a tolerance of alcohol which is greatly in excess of that in the interval; and enormous quantities of spirits may be consumed without marked signs of intoxication. During the interval the patient is usually an abstainer; but in some cases he takes alcohol in moderation. At this time he has no special tolerance of alcohol and moderate amounts may show. At the same time he has, in most cases, no special tendency to exceed: indeed, it would be incorrect to regard him at that time as in any sense an inebriate or even an alcoholic: he is, in fact, a normal individual.

The view that alcohol is not a direct factor in cases of dipsomania is strengthened by the fact that paroxysms of "non-alcoholic dipsomania" may continue to recur in special circumstances. The following is an example:

Recurring Non-alcoholic Dipsomania.

A gentleman, aged 50 years, had suffered for many years from dipsomaniac outbreaks, recurring at intervals of three months. He suffered also from mitral insufficiency. Steadily increasing breathlessness on the least exertion at length confined him to his room. There was no alcohol in his immediate vicinity, nor was he physically able to procure any. Yet his periodic attacks of dipsomania continued to recur at their long accustomed intervals. He would lose his appetite and become sleepless, "his brain working continuously" in spite of all his efforts to prevent it. He would be intensely irritable, and tormented with an increasing desire

for alcohol in quantity. He always insisted, however, that the craving from which he suffered then was trifling compared with the craving from which he would suffer should he take a single glass of spirits. These symptoms would persist for just one week, as they did when he indulged in alcohol. They would then subside somewhat suddenly. At their subsidence there would be a heavy discharge of urates, followed by diuresis.

The onset of a *distinct craving for alcohol preceding the imbibition of even a small quantity of it* has been accepted in the sanatorium as the main symptom which distinguishes dipsomania from pseudo-dipsomania. The distinction may not be altogether scientific, but there are cogent reasons rendering its adoption expedient: these chiefly concern prognosis and treatment, and will be considered later (p. 240).

While the presence of a distinct premonitory stage is, unless otherwise accounted for, pathognomonic of dipsomania, the absence of such a stage cannot be taken to exclude this affection; for there are cases in which premonitions of all kinds are wanting. The patient, who may have been a total abstainer for many months, and who may be at the time in perfect physical and mental health, is suddenly seized with the craving and promptly succumbs. Usually a paroxysm of heavy drinking supervenes at once: less often the first indulgence gives temporary relief, and the climax is worked up to gradually.

Case of Dipsomania without Premonitory Stage.

An unmarried lawyer, aged 29 years, with marked paternal heredity to alcoholism, had commenced drinking to excess at the age of seventeen. Since he was nineteen he

had suffered from recurring outbursts of inebriety, separated by intervals of total abstinence. The intervals, which were never of equal duration, had of late been getting shorter. He never had the least warning of the outbreak. Quite suddenly he would be seized with the idea that he must have alcohol, rush into the nearest hotel and drink. At first he would take one glass only on the first day: not more than two or three on the second; and only on the third abandon himself to heavy and continuous drinking. But of late his heavy drinking had always begun on the first day. The paroxysms yielded only when gastric catarrh and vomiting rendered further drinking impossible. During his bouts he was always intensely miserable and dangerously depressed: he had made several serious though unsuccessful attempts to take his own life at these times.

Such cases are uncommon; and fortunately so, since they seem to be peculiarly resistant to treatment. It is a question, however, whether the absence of premonition in some of them is real. The patient often lays special stress on the excellence of his health at the time of the onset of the craving; and this feeling of *ultra* well-being may in itself constitute a premonition. One patient assured me that so long as there was anything the matter with him he always felt safe; that his attacks never began except when he was feeling particularly fit. We may here appropriately recall the fact that a sensation of *ultra* well-being has long been a recognised forewarning of an impending attack in many paroxysmal affections.

Outbreaks of inebriety preceding, or coinciding with, the menstrual periods, constitute a classification difficulty. It is doubtful whether they should be classed as true dipsomania. In the sanatorium a

few of them have been so classed, but only when there have been present features typical of dipsomania other than menstrual periodicity. Menstrual dipsomania should perhaps be allotted a place by itself. It differs from dipsomania proper in several respects; and it is certainly far more amenable to treatment, and consequently justifies a better prognosis. The special tendency for outbreaks of inebriety to occur at, or about, each menstrual epoch renders somewhat indefinite the line of demarcation between dipsomania and pseudo-dipsomania.

It remains to consider an attribute of dipsomania which is almost constant, entirely inexplicable (except on the view that the disorder is a form of insanity), and from the standpoint of treatment and prognosis, altogether deplorable. I refer to the compelling tendency to secretiveness which, in the vast majority of cases, seizes on the sufferer at the very approach of every attack. Patients who are normally candid themselves, become, at the commencement of the premonitory stage, obsessed with the impulse to conceal the imminence of a paroxysm from everyone—relatives, friends, and medical advisers. The tendency to secretiveness is not limited to dipsomania; it is present more or less in all forms of inebriety. But in all other forms it is in some degree intelligible. In none but dipsomania is there a clear premonitory stage; therefore a patient suffering from the more ordinary forms of alcoholism has always actually commenced drinking when he realises that he is in for a relapse. And it is easy to understand, if not to excuse, the motives which urge to concealment of one who has broken his word. But who can

explain the mental attitude of the patient who has long suffered from regularly recurring outbreaks of dipsomania: whose every outbreak is preceded by a week's clear warning: who knows that at any time during this premonitory week it is a simple matter to avert the impending outbreak: who is undoubtedly anxious, at all other times, for recovery; and yet immediately he becomes aware that an attack is impending, and throughout the whole of his premonitory period, habitually goes to absurd lengths to prevent the least suspicion of his dangerous condition from leaking out? Nevertheless, this attitude is certainly the rule rather than the exception. We can only conclude that the uncontrollable impulse to secretiveness is an essential part of the paroxysm.

The secretiveness of the patient is peculiarly unfortunate, since it constitutes a very effectual, though, I believe, the sole, bar to successful treatment in these cases. In the few cases in which the secretiveness of the patient is out-manœuvred, and the patient brought under treatment before the drinking stage is reached, the results are excellent.

The term "dipsomania" has been used in many different senses by different writers. Some have applied it to paroxysmal heavy drinking in which the patient becomes distinctly maniacal and dangerous to others—if not actively homicidal—in fact, to acute recurrent mania brought on by gross alcoholic indulgence. And it may be admitted that maniacal drunkenness is relatively more common in dipsomania than in other kinds of inebriety. But it is not distinctive. Cases also occur which may be classed as dipsomania according to the definition used in the

sanatorium, but in which the degree of intoxication reached during the paroxysms is quite mild, and certainly harmless to all but the patient himself. Such a case is the following :

Case of True, but Mild Dipsomania.

An independent gentleman, aged 58 years, had never been an abstainer until he realised that at certain periods he lost control of himself and was an inebriate. He then underwent a four weeks' "cure" in America. This was succeeded by a period of total abstinence lasting over twelve months. Since then he has suffered from attacks of inebriety lasting two or three weeks, and coming on, irrespective of circumstances, at intervals of six or seven months. Each attack is preceded by a premonitory period lasting about a week : his symptoms during this week seem to be indescribable, but they are easily recognisable ; nor has he ever mistaken them for anything else. During his attack he drinks sherry only. He takes it at regular intervals throughout the day, and once or twice if awake during the night—perhaps a bottle and a half in twenty-four hours. He never becomes more than very mildly muddled. The attack ceases gradually in two or three weeks, without serious illness, such as gastritis, prostration, etc. He remained five weeks in the sanatorium. Twelve months later he had had no further attack.

In another variety of dipsomania there is a long premonitory period, the attacks themselves are prolonged, and they are apt to be separated by long intervals. Such a case is the following :

Case of Dipsomania arising out of, and difficult to distinguish from, Chronic Inebriety.

An unmarried brewer, aged 38 years, had been an abstainer up to eighteen, a moderate drinker thenceforward

up to twenty-four, and an occasional heavy drinker during the next two years. From the age of twenty-six to that of thirty-two he drank heavily and continuously. Then, getting frightened, he became an abstainer for twelve months. Afterwards he relapsed many times, his relapses being separated by intervals of total abstinence varying greatly in length. Clearly at this period of his history his case must be classed as dipsomania, since each relapse into inebriety was heralded by a premonitory period during which the craving for alcohol was unmistakable and progressively increasing up to the point of breakdown. It seemed to him that there was no escape from heavy drinking when once the craving commenced: the longer he abstained, the more insistent became the desire. Often his premonitory periods had lasted several weeks. He remained in the sanatorium for five weeks, and on leaving sailed direct for New Zealand, when he started life afresh. Two years later he had not relapsed.

Such cases graduate into, and would be classed by many as, chronic inebriety. In the sanatorium they are distinguished from chronic inebriety by the fact that at each relapse the craving for, invariably preceded the consumption of, alcohol.

PSEUDO-DIPSOMANIA.

Far commoner and even more varied in character, than dipsomania is the variety termed "pseudo-dipsomania." By many medical men not specially experienced in the subject of alcoholism the two varieties are regarded as one. Indeed, any case of intermittent inebriety, provided the outbursts are sufficiently severe, is looked upon by them as one of dipsomania; and it is easy to excuse this view. Superficially, at any rate, pseudo-dipsomania may

closely resemble—may sometimes, indeed, be indistinguishable from—dipsomania. The affection is recurrent: now and then it may be periodic. During the intervals, in both cases, total abstinence is the rule; and in both the paroxysms may be equally severe.

But looking a little deeper, important differences are found. The recurrency or periodicity of pseudo-dipsomania is never in any sense inherent—can never be looked upon as part of the disease: it is always dependent on external circumstances. There is never any premonitory period. And, although a premonitory period is occasionally wanting in dipsomania also, yet in dipsomania the first drink is always preceded, if only for a few minutes, by a distinct craving for alcohol: this antecedence of the craving is the chief distinguishing feature of dipsomania. Now in pseudo-dipsomania there is never any antecedent craving for alcohol: the craving *always succeeds and depends upon* the taking of alcohol. What, then, are the motives which lead to the taking of the first drink in outbreaks of pseudo-dipsomania? One can only answer that they are innumerable, for they depend upon the innumerability of circumstances. Moreover, they are substantially the same as those which conduce to relapse after a period of abstinence in all kinds of alcoholism except pure dipsomania. But whatever the motive, the drink craving which follows consumption pursues the same course, leads to the same results, and terminates under the same conditions in pseudo-dipsomania as does the drink craving which precedes consumption in a paroxysm of dipsomania.

The explanations or excuses advanced for the taking of the first drink after a period of abstinence are for the most part absurdly inadequate. And this applies to chronic alcoholism, inebriate and sober, not less than to pseudo-dipsomania. Without exception the patient will state that he had no craving at the time, nor even any special desire. He may have been mixing with a drinking set, and have wearied of his companions' interminable chaff at his teetotalism. "One glass can't hurt you" is the phrase in constant use on such occasions; and presently the patient persuades himself that he believes it. Or, having remained free from both alcohol and the craving for alcohol for many months after leaving the sanatorium, he may come to believe that he is "really cured" and can take a little with safety, "just like anyone else." Again, he may think that the time has arrived for testing himself: he wants to know whether it is true, as was so often impressed upon him in the sanatorium, that a single alcoholic drink will re-create all his old insatiable craving. And the knowledge comes to him rapidly. Hence it happens that there is a steadily lengthening list of old patients who, having relapsed after a first course of treatment in the sanatorium, have remained well for long periods after a second. The explanation is simple. Though insistently warned that a single drink would re-start the craving for alcohol, and though courteous enough to agree, they did so with a reservation. They did not really believe in the "theory of the single drink": probably they put the medical superintendent down as an extremist, though in the case of the Norwood Sanatorium this

official has consistently endeavoured to avoid any such reputation. Be that as it may, however, it is found that experience frequently succeeds where precept has failed; and on leaving the sanatorium for the second time a considerable number of patients need no further evidence.

It is commonly believed that those patients who remain continuously abstainers after leaving the sanatorium do so through the exercise of determination and will-power. This may be largely true, but it is by no means exclusively true. If, as just pointed out, the first glass which determines the relapse is not taken in response to any craving for alcohol, it follows that will-power is not essential to refrain from it. The essential quality seems to me to be rather a power of *intelligent imagination*; and this view is confirmed on a re-consideration of the characters of those patients who have proved the most successful. Indeed, I have often wondered whether we might not safely make the following generalisation: *Will-power is either unnecessary or inadequate; it is unnecessary for the avoidance of the first glass, it is practically always inadequate for the avoidance of the second.*

Many other explanations are offered of the first drink which is the determining cause of the relapse. The patient contracted a cold or a slight chill—he may merely have got his feet wet—and he successfully cheated himself into the belief that a glass of hot spirits and water was necessary to prevent an attack of pneumonia or other severe illness. Finally, the initial drink which re-started the craving may have been really accidental in so far as the patient

himself was concerned. A lady had left the sanatorium and remained quite well for some months. But the motor-car in which she was travelling with her husband was upset, and she was thrown out, fracturing her left humerus. She fainted, and a bystander poured some brandy down her throat. Immediately the craving for alcohol returned, and she was obliged to return to the sanatorium as soon as she was well enough to travel. A very corpulent male ex-patient fainted from the excessive heat which afflicted this country in July, 1911. He was watching a cricket match at the time, and an acquaintance, ignorant of his failing, administered brandy while he was semi-conscious. Relapse into heavy spirit-drinking followed in the evening. "Wincarnis" has accounted for several relapses. Three or four old patients have relapsed through drinking cider, which for some unexplained reason seems to be widely regarded as a non-alcoholic beverage. And two have relapsed as the result of a practical joke at the hands of a "friend." They had called for some temperance drink such as ginger-ale, and the friend had surreptitiously added some spirits. One of these patients entirely failed to see the joke: indeed, so lacking was he in any sense of humour at the time that he administered a somewhat severe thrashing to the joker.

From all standpoints it is a particularly regrettable fact—and one which more than all else seems to demonstrate that the important factor in relapse is the actual consumption of alcohol rather than the circumstances in which it is consumed—that the sacramental wine itself has been the instrument of

relapse: this has happened in the case of more than one clergyman admitted to the sanatorium. The amount of wine which the priest officiating at the Communion Service is called upon to consume may in occasional circumstances amount to more than very little. In one of the concluding rubrics at the end of the Communion Service of the Church of England, it is directed that if at the end of the Service any remain of the consecrated bread and wine, "it shall not be carried out of the Church, but the priest and such other of the communicants as he shall call unto him, shall, immediately after the Blessing, reverently eat and drink the same." I am given to understand that in most churches the custom of calling up some of the communicants to assist in the consumption has fallen into such desuetude that a revival of it by any individual clergyman would certainly provoke comment. Hence it may happen that the priest is left alone to fulfil this duty.

Essential periodicity has been accepted as pathognomonic of (true) dipsomania (p. 66). But periodicity (not always exactly regular) may characterise some cases of pseudo-dipsomania. Omitting from consideration the periodic influence of the menstrual function, periodicity in pseudo-dipsomania is always dependent on periodicity of circumstances. There may be regularly (or irregularly) recurring sources of depression, worry, boredom, or stress. One patient enters the sanatorium after every attack of influenza to which he is very subject. Another is prone to relapse about quarter day: another at the approach of his half-yearly balance: yet another, whenever visited by a peculiarly tactless female relative. A

childless woman drank heavily for many years at regular intervals of a few weeks, remaining an abstainer between times. The attacks of inebriety were determined simply by the periodic absences of her husband, a commercial traveller, to whom she was much attached. Mere press of work has determined outbreaks: influenza and other epidemics frequently determine relapses in the case of medical men. Incidentally, however, it may be mentioned that press of work may operate in the opposite way, in which case relapse is prone to follow the removal of the strain. The accessibility to alcohol may be periodic: this is well illustrated in the case of the white bushmen in Australia and other thinly populated countries, who visit the townships only at long intervals. Many pseudo-dipsomaniacs were originally continuous drinkers, but owing to threatened disease, loss of employment or social standing, make courageous, but only intermittently successful, efforts to become abstainers. They are successful under fairly happy circumstances, but fail when worried or bored. Thus they tend to develop a certain periodicity, which is regular or irregular according to circumstances.

The most curious example of regular periodicity in a pseudo-dipsomaniac which came under my notice was in a highly neurotic man who had outbreaks of inebriety lasting two or three days, and separated by intervals of total abstinence lasting almost exactly twenty-eight days. The case might in a sense have been labelled menstrual dipsomania; but the psychical alteration which determined each outbreak was in the patient's wife, who was herself a total abstainer. Two days before the commencement of the menstrual flow this lady's temper underwent a remarkable change for the

worse : normally even-tempered, she then became irritable and cantankerous to such a degree that her husband, in his own words, was "driven to drink in self-defence." Perhaps it is fortunate for both parties that in this case the menopause is unlikely to be much longer delayed.

As above stated, a distinct premonitory stage is pathognomonic of (true) dipsomania. But even in this connection mistakes may arise. There is a type of inebriate who assiduously studies the whole subject of inebriety, not limiting his reading to the works of standard authorities. He embraces enthusiastically the view that inebriety is a disease, and is obviously anxious to shirk all individual responsibility for his numerous failings. Should there be any hereditary taint of inebriety in his family, no matter how distant, he enlarges on it, and advances it as an explanation or excuse for even future lapses. These patients often earn the reputation of having a regular premonitory stage heralding each outbreak of inebriety. What really happens, however, is this : They have more or less deliberately indulged in alcohol. Indulgence does not in their case *immediately* lead to an outbreak, but does so infallibly in the course of, say, a week. During this week they have been drinking secretly, and refuse to admit their relapse until the effects have become obvious. They find it convenient to encourage the idea of a premonitory stage and of their own consequent irresponsibility : thus they are called upon to endure less expostulation, and enjoy far more sympathy. Such patients are not infrequently married to wealthy wives ; or they may be dependent on relatives for their present or future income.

Some (I think only a few) dipsomaniacs during their quiescent intervals are able, as above pointed out (p. 62), to take alcohol in strict moderation: they are at the time normal individuals in all respects. Such is never true of pseudo-dipsomaniacs. The latter are always the same in respect of alcohol: they are always dependent on strict abstinence in order to escape inebriety, and always, therefore, more or less at the mercy of circumstances—circumstances which lead to the taking of the first glass of stimulant. In this one respect, at any rate, they are less fortunate than the true dipsomaniac. On the other hand, they have it within their power to avoid this fatal first glass, the which cannot truly be said of most dipsomaniacs.

Finally, the *occasional* greatly increased tolerance of alcohol which may characterise the paroxysm of dipsomania is never seen in pseudo-dipsomania: the tolerance of alcohol exhibited by pseudo-dipsomaniacs is constant, or if variable, dependent on the length of time they have been drinking. Commonly, of course, the time factor does not enter into this question.

The essential distinctions between the two varieties of recurrent or intermittent alcoholism may be arranged in double column as under:

Dipsomania.

Usually a distinct premonitory stage.

Craving for alcohol always precedes consumption.

Pseudo-dipsomania.

Never any premonitory stage.

Craving for alcohol never precedes, but always follows and depends upon, consumption.

Dipsomania.

Recurrence of paroxysm without apparent cause.

May be regular periodicity, which is then inherent—part of the disease.

Patient sometimes able to take alcohol in moderation during interval.

May be a greatly increased tolerance of alcohol during paroxysm.

Pseudo-dipsomania.

Recurrence of paroxysm dependent on circumstances.

Occasional regular periodicity, which is then always due to regular periodicity of circumstances.

Patient never able to take alcohol in moderation, except for a short time.

Never any variation in the degree of tolerance of alcohol.

CHRONIC OR CONTINUOUS ALCOHOLISM.

Chronic or continuous alcoholism, in typical cases, differs so widely in its clinical manifestations from both varieties of recurrent, or intermittent alcoholism, as almost to constitute a separate disease. Chronic alcoholists are really drug *habitués*, and are strictly analogous to chronic morphinists. As in morphinism, so in chronic alcoholism, always there is established *tolerance* of the drug: that is to say, alcohol, except in large and continually increasing doses, ceases to exert its well-known physiological effects. This establishment of tolerance is the salient feature which distinguishes this form of alcoholism from the forms already considered.

The histories of patients suffering from chronic alcoholism are remarkably uniform. Almost always they have been for a more or less prolonged period moderate drinkers. Originally, in their school days

perhaps, they took light ale with their meals: later, wine with perhaps a liqueur to follow: a little later, spirits in the form of a "night-cap" would be added; and later still an occasional "nip" between meals. These nips between meals would steadily, but perhaps only slowly, increase in number, and so also would the night-caps. Should the drinking be done at home, or in the houses of friends, the size, as well as the number of nips, continually increase. And the same is true of hotel and club life in countries like Australia, where the practice holds to allow customers at the bar, or in the smoke room, to help themselves. In any case, the passage from moderate to immoderate drinking is quite imperceptible: the chronic alcoholic can never say, even approximately, when he first began to exceed. Indeed, he frequently refuses to admit that he has ever "exceeded" at the time he first applies for medical advice, although he may then be taking considerably over a bottle of spirits every twenty-four hours. He defines excess as the amount necessary to cause intoxication, and quite probably he has never been intoxicated in his life—at any rate, overtly intoxicated. He has, in fact, through frequent small but ever-increasing doses of alcohol, eventually succeeding in establishing a high grade of tolerance. To this he is apt to refer with some pride, regarding it in the light of a valuable acquirement, and as an evidence of his powers of resistance. But herein he ignores, though he is fully cognisant of, the fact that his acquired capacity carries with it a more than compensatory incapacity—the total incapacity to remain even temporarily on his ordinary mental and physical level in the absence of his daily or hourly

allowance of alcohol. *His tolerance of alcohol may indeed be regarded as in most cases an accurate measure of his intolerance of its absence.* In severe cases the chronic alcoholic lives in continual terror of finding himself so placed as to be unable to procure alcohol in adequate amount, feeling assured that in those circumstances he would be more than threatened with some grave nervous complication. And many such patients have to my knowledge been prevented for years from entering a sanatorium, and even from seeking medical advice, because they understood that the invariable practice of the profession is to insist upon sudden and complete abstinence from alcohol in all cases. *It is the wide-spread prevalence of this belief that has done more than anything else to throw the medical management of alcoholism and inebriety into the hands of unqualified and often incompetent persons.*

The chronic alcoholic, whether inebriate or not, is distinguished by the frequency, ubiquity and severity of his tissue changes. It is solely in the chronic alcoholic that the infrequent complication, cirrhosis of the liver, whether atrophic or hypertrophic, arises. Here also are found practically all the cases of toxic neuritis, and most of those of toxic albuminuria (a complication not hitherto sufficiently recognised), not to mention acne rosacea and other proverbial signs of alcoholism. And it is chronic alcoholism which, in the great majority of cases, leads *indirectly* to the two chief alcoholic emergencies, namely, delirium tremens and alcoholic epilepsy.

Medically, no very sharp line of demarcation can be drawn between the two varieties of chronic alcoholism—between chronic inebriate alcoholism or

chronic inebriety, and chronic non-inebriate or sober alcoholism: in practice the one graduates imperceptibly into the other. Nevertheless, psychologically, the two must be regarded as entirely distinct. As a matter of fact, the line of demarcation between them, broad and ill-defined as it is, coincides accurately with the dividing line between drunkenness and sobriety—between what may be termed legal, and purely medical, alcoholism. In the abstract of the Report of the Departmental Committee on the law relating to inebriates and their detention—a report which is concerned solely with legal alcoholism—the seventh proposition states that “in some, satiety is produced before intoxication occurs; in others, intoxication occurs before satiety is produced” (p. 7).

The occurrence of satiety before intoxication completely excludes all question of inebriety, but on the other hand, it allows full room for numerous cases of very severe alcoholism—cases which constitute a large proportion of those admitted into, and treated in, the sanatorium. All such cases are of course entirely beyond the scope of the report of the Departmental Committee. They constitute the fourth class—the class of chronic non-inebriate or sober alcoholists: they might perhaps be termed simply chronic alcoholists. The great majority have never been intoxicated in their lives; or if occasionally they have shown symptoms, it has been due to some accidental circumstance. They would regard a mere suggestion of inebriety as insulting. And herein I confess they have my sympathy. For the avoidance of drunkenness implies a relatively high grade of

self-respect. At the same time they are, it must be freely admitted, complete slaves to alcohol for the time being; and are peculiarly exposed to the dangers implied in the establishment of tolerance. Many of them, of course, are secret drinkers, which it has become the fashion to regard as the most hopeless of all. But here again I am inclined to dissent from the general view. Secrecy in drinking certainly implies some degree of self-respect, and whatever its result, it is commonly dictated by motives of consideration for others, whether relatives or friends. Nor have I found that as a class secret drinkers are necessarily less likely to recover and remain well than those whose habit it is to indulge openly: indeed, I am inclined to think that the reverse is true.

The majority of sober alcoholists when first coming under notice are still managing their affairs, business or professional, with some success: in many cases no suspicion as to their habits has got abroad: the knowledge is limited to a few. They apply for advice only because they are beginning to suffer from alcoholic complications, either insomnia, loss of appetite, or painful neuritic affections, or because they find they are forced continually to increase their daily allowance of alcohol.

In the chronic inebriate satiety occurs only after intoxication has been produced. But the degree of intoxication is not as a rule more than mild: it rarely brings them into the hands of the police. It is, however, quite enough to show, and is commonly described by such words as "muddled," "fuddled," and "a little mixed." Of such it is often said that

they have not been to bed sober for years; or that they are "never drunk and never sober." Usually they are induced to seek medical advice through the moral pressure brought to bear on them by relatives, friends or employers.

INTERMEDIATE CASES; ABSENCE OF SHARP LINES OF DEMARCATION BETWEEN THE FOUR VARIETIES OF ALCOHOLISM; CONSEQUENT DIFFICULTY OF DIFFERENTIATION.

Attention has already been called to the difficulty of distinguishing clinically between dipsomania and pseudo-dipsomania. This is mainly owing to the practical difficulties experienced in recognising (1) a true from a false premonitory stage; (2) the existence of an antecedent craving for alcohol; and (3) the inherency or otherwise of periodicity. But it is due also to the existence of intermediate cases. Thus a patient may be both a dipsomaniac and a pseudo-dipsomaniac. Some of his paroxysms may be preceded by a definite premonitory stage, during which, though an abstainer, he is tormented by a steadily increasing craving for alcohol; while others are plainly due to the incidental consumption of alcohol. Several such cases have been admitted to the sanatorium.

Occasionally a patient may suffer from an *isolated* attack of dipsomania. At least, on no other grounds does it seem possible to explain the following occurrence:

An articled clerk, aged 26 years, had drunk hard at the University, and become an ordinary pseudo-dipsomaniac.

He was treated at the sanatorium for six weeks successfully. Four months after leaving he took a holiday and went to the seaside, where he put up at a large hotel. There he found himself a stranger: friends whom he expected to meet were away. He became depressed. Presently he found himself longing for alcohol in quantity: his craving, he explained, was really for intoxication, not merely for alcohol, and this although he had remained a complete abstainer for four months. This mental condition continued for about thirty-six hours. He did not give way, however, but having wired the sanatorium, re-entered with all speed. On admission he was immediately set right by a small dose of apomorphine, followed by half an hour's sleep.

This happened eighteen months ago. Since then he has had no similar attack, and has remained well in all respects.

Analogous difficulties are found in separating cases of pseudo-dipsomania from cases of chronic inebriety. A patient may be both a pseudo-dipsomaniac and a chronic inebriate by turns, or he may have been for long years a chronic inebriate, and later, through making intermittently successful efforts to abstain, have become a mild pseudo-dipsomaniac. Again, he may have intervals, more or less prolonged, of total abstinence, followed by prolonged periods—periods lasting weeks or months—of chronic inebriety. Obviously no sharp line can be drawn between these two varieties: they shade into each other at many points. Only typical cases can be clearly separated.

Finally, the same is true, perhaps in even higher degree, of the distinction between chronic inebriety (chronic inebriate alcoholism) and chronic non-inebriate or sober alcoholism. There is no difficulty whatever in dealing with typical cases: a man may have been more or less intoxicated every day of his

life for many years, or, though drinking heavily every day, may never have been once intoxicated. But there are many who, though drinking heavily every day, become intoxicated only on rare occasions. And the word "rare" is differently interpreted by different individuals. Such occasional bouts of drunkenness are sometimes explicable by accidental circumstances. The capacity to keep sober, in spite of heavy drinking, is conditional upon the degree of alcoholic tolerance which has been set up. If there is any sudden increase in the amount of alcohol consumed, or what comes to the same thing, in the amount consumed in a given time, intoxication is liable to occur.

A patient who habitually took a bottle of whiskey a day proposed to spend Sunday afternoon and evening with friends who were abstainers. Knowing he would be unable to obtain any more whiskey until late at night, he doubled his morning dose. As a result, acting on a friend's advice, he changed his plans and spent that Sunday afternoon at home.

Some chronic alcoholists keep sober only through the exertion of will-power—in them intoxication antecedes satiety—or because circumstances compel them. Such from time to time find themselves under conditions in which sobriety is not of supreme importance, or so at least it seems to them. Then they "let themselves go," and become inebriates for the time being. And there are innumerable other explanations. Finally, it is not to be forgotten that many occasional bouts of drunkenness are quite deliberate in origin—they do not, that is to say, come under the head of

inebriety at all—as at “send-offs,” special nights at certain clubs, etc.

A gentleman, aged 32 years, who has been admitted into the sanatorium far more frequently than any other patient, well illustrates the frequent impossibility of accurate classification and “pigeon-holing” of cases of alcoholism. Originally a *moderate drinker*, he became for a short time a *chronic inebriate*. He then determined to become a total abstainer. Herein he was only temporarily successful. He is now for the most part a *pseudo-dipsomaniac*, but suffers occasionally from attacks which must certainly be regarded as *true dipsomania*. Furthermore, there is no doubt that some of his attacks of inebriety are *deliberate*. His speculative business, in which he is extremely successful from a financial point of view, is of such a nature that outbreaks of inebriety and consequent disappearance from his office, are not, fortunately, or unfortunately for him, necessarily fraught with much loss. And he has confessed to me that very often, on the satisfactory conclusion of a “deal,” he has looked through his appointment book in order to ascertain whether or not he could afford the time for a “spree.” Sometimes he found he could do so: then he would appear at the sanatorium as a patient in the course of a week or ten days. Again, finding early important business arrangements, he would remain without difficulty a total abstainer until slacker times.

Finally, it seems necessary to point out that there is no sharp line of demarcation between chronic sober alcoholism and chronic moderate drinking: the two shade by altogether imperceptible gradations into each other. Indeed, as already stated, the latter is an almost invariable antecedent of the former.

DIPSOMANIAC CRAVING AND ALCOHOLIC CRAVING.

Use will be made in the following pages of two terms, namely, "dipsomaniac craving" and "alcoholic craving." For it would appear that there are two kinds—not, I am inclined to think, merely two degrees—of craving for alcohol. What will be referred to as the dipsomaniac craving obtains almost solely in the intermittent forms of alcoholism, namely dipsomania and pseudo-dipsomania. Perhaps its most marked manifestation is in the former, especially the regularly periodic variety. Here the craving antecedes, and therefore cannot depend upon the consumption of alcohol; but the antecedent craving never approaches in intensity the craving which succeeds the drinking of the first few glasses of a drinking bout. The dipsomaniac craving, however, is present also in pseudo-dipsomania, though here it only succeeds consumption. Nevertheless, in both varieties of intermittent alcoholism, the craving (dipsomaniac craving) differs greatly—I had almost said essentially—from what is about to be described as the alcoholic craving.

The alcoholic craving occurs in its most typical form in chronic alcoholists who do not, or do not often, show signs of intoxication; and it appears whenever for any reason the patient has failed to obtain his usual allowance of alcohol—more especially of course when all alcohol is suddenly withheld. It has a close relation—indeed, it is directly proportionate—to the degree of tolerance of alcohol which has been acquired; for it is an index of the want of a drug to which the system has long accustomed

itself. It is thus a subjective *sudden abstinence phenomenon* of chronic alcoholism, herein differing entirely from the dipsomaniac craving which invariably precedes or depends *directly* upon the consumption of alcohol.

Looking clinically at the two cravings, one is struck with the bearable character of the alcoholic, as compared with the dipsomaniac craving. Many a chronic alcoholic through a simple effort of will (perhaps suggested by a small wager with a friend) has suddenly cut himself off from all alcohol, although, as will be later pointed out, his success may lead directly to an attack of delirium tremens: I have histories of several such occurrences. The dipsomaniac craving, on the other hand, is *never*, so far as I am aware, so inhibited, *at any rate, after the first indulgence*, although the danger of serious complications resulting would be *nil*: in its marked examples, at least, it seems to be absolutely uncontrollable. Though the differences between the two cravings are obvious even to the untrained observer, it is difficult to define them on paper. The dipsomaniac craving is, I think, best described as a *pathological passion*: it is essentially impulsive. The alcoholic craving lacks the impulsive element: it may be likened to the strong desire for food which assails the grossly underfed or incipiently starving.

The differences become enhanced when we observe the effects of the administration of alcohol in these two cravings respectively. In both, it is true, there is relief for the moment; but with the dipsomaniac the relief is evanescent and rapidly followed by a very manifest increase in the craving. With the

chronic alcoholic, on the other hand, the relief is enduring, and enduring in proportion to the size of the dose. Moreover, the chronic alcoholic obviously improves in all ways, and returns for the time being to something approaching his normal condition of physical and mental well-being. The very opposite is true of the dipsomaniac.

The differences in the character and behaviour under the administration of alcohol, of the two cravings, have an important bearing on therapeutics (p. 234).

CHAPTER IV

Symptoms and complications—Acute complications, mental and other—Chronic mental complications—Alcoholic peripheral neuritis—Alcoholic albuminuria—Hepatic complications—Gastric catarrh and vomiting.

THE ordinary symptoms of alcoholism (whether intermittent or continuous) are too well known to call for detailed enumeration and description. But a few popular fallacies may be referred to.

It is widely believed that alcoholists of all kinds carry about with them the stamp of their habit in their *appearance*. With infrequent exceptions this view is incorrect. One has only to glance during meal times round the sanatorium dining-room, where frequently twenty or twenty-five patients are seated, to realise the falsity of the general idea. The intermittent inebriate (dipsomaniac, pseudo-dipsomaniac), except during a paroxysm—when the symptoms of his condition are obvious to all—shows no sign of alcoholism: he is in all respects an ordinary, and generally a healthy-looking, individual. It is only the chronic alcoholist (whether inebriate or not) whose face is liable to betray him; and even he escapes such betrayal in quite nine cases out of ten. Moreover, in the tenth case, the facial signs—consisting for the most part in congestion of the conjunctivæ, cheeks and nose—are most commonly

temporary, and disappear almost completely within a week or so after the patient has ceased to take alcohol. There are, it may be admitted, cases of acne rosacea in which alcohol is the chief factor, and in which the eruption pales, and the turgidity of the new tissue abates progressively as abstinence is persisted in. But against these must be placed at least an equal number of cases of the same affection in which the eruption rather increases than otherwise in the same circumstances. Moreover, in quite a number of cases, eruptions of various kinds, simple acne, eczema, and others, absent during steady alcoholic indulgence, appear, or more often re-appear, when abstinence has been practised for a few weeks. In both cases the cause is the same, namely, the great improvement which takes place in appetite and in the processes of digestion and absorption. For it is undoubted that frequently skin affections depend, not so much upon dyspepsia, as upon eupepsia—upon the digestion and absorption of an excess of food, more especially of rich carbohydrate food, and particularly sugar. Even acne rosacea occurs not rarely in lifelong abstainers from alcohol, and in those who do not suffer from dyspepsia.

Another common fallacy is the belief in the frequency of morning headaches after a heavy carouse on the previous night. Fulness and throbbing, a feeling as if the head were about to burst open, and other less easily described sensations are doubtless common; but none of them amounts, except rarely, to pain or even ache. Of course the alcoholic, like everyone else, is liable to headache. But he does not suffer in this particular way more than the average

individual. Indeed, it has often seemed to me that on the whole he suffers less; and certainly he suffers less than the anæmic and neurotic woman. Moreover, cases occur in which he suffers only when an abstainer (p. 133).

ACUTE COMPLICATIONS, MENTAL AND OTHER.

Amongst the complications of alcoholism, Norman Kerr refers to several *acute* affections, *e. g.* acute alcoholic gastric catarrh, acute alcoholic nephritis with dropsy and convulsions, acute jaundice, acute alcoholic pneumonia, acute alcoholic insanity, including acute mania and acute melancholia; and acute alcoholic paralysis. The majority of these must, I think, be exceedingly rare: most, at any rate, have been quite absent from the 744 cases admitted into the sanatorium during the last six and a half years.

No case of acute jaundice, nor anything approaching acute nephritis, has occurred. Only two cases of pneumonia have been treated, and in neither could the attack be ascribed even indirectly to alcoholism.

Cases included by Kerr under the head of "acute alcoholic mania" have occurred; but to these the term "insanity" hardly seems applicable. Acute alcoholic mania, often termed *mania à potu*, is, I believe, always the direct result of alcohol acting on a subject who is for the most part an abstainer. And in the few cases in which "this mental riot affects continuous inebriates, the neurotic storm is most easily provoked after an interval of abstinence" (Norman Kerr),* that is, of course, in patients who have changed their form of inebriety—who, from being continuous, have

* 'Twentieth Century Practice of Medicine,' 1895, p. 12.

become intermittent drinkers. It consists in a "mania of violence, a maniacal delirium, with little or no muscular tremor or hallucination."* *Mania à potu* seems simply a form of drunkenness, and is referred to in these pages as hysterical or maniacal drunkenness in accordance with the mildness or severity respectively of the abnormal mental manifestations. Probably all such cases may safely be regarded as examples of "pathological drunkenness" (p. 127): the abnormal effects of the alcoholic poison certainly depend upon the personal factor—upon an abnormal condition of the patient's brain.

Two cases of acute melancholia have occurred, but in both the mental disturbance followed—did not complicate—a dipsomaniac paroxysm: the melancholia might be regarded as a sequel: it commenced only when the alcohol ceased to be taken. Here, too, the personal factor was undoubtedly to blame in the main: in both cases there was a marked history of insanity in the family.

By most writers delirium tremens and alcoholic epilepsy would be included under the acute complications of alcoholism. Here they are excluded in accordance with the view to be elaborated later (p. 154), that they result from the too sudden withdrawal of alcohol from the nervous system, and are consequently but indirect results of the alcoholic habit.

CHRONIC MENTAL COMPLICATIONS.

On the other hand, mental disturbance, certainly due very largely to alcohol, but of a chronic or quite

* *Ibid.*

subacute form, has been observed not infrequently. The commonest was a mild dementia ; and by far the most constant symptoms were extreme loss of memory, especially for the most recent events, loss of power of concentrating the attention, and absence of all interest in current events.

ALCOHOLIC PERIPHERAL NEURITIS.

There has been no case in the sanatorium of alcoholic paralysis which could be regarded as acute. Those classed as toxic or alcoholic neuritis, which have been associated with distinct motor paralysis, could be regarded only as *chronic, or, at most, subacute*. The signs and symptoms of this affection are described in text-books so exhaustively as to render further description here superfluous. Stress, however, may be laid on the fact that severe cases have been comparatively infrequent. It is not intended to suggest that the disease is rarer than is generally supposed: probably the infrequency of cases admitted is explained by a process of selection, by the view (which, it may be mentioned incidentally, is quite mistaken) that the sanatorium is not prepared to admit very serious cases requiring constant nursing. Amongst the few cases of severe peripheral neuritis admitted I select the following: it seems fairly typical as regards its history, symptomatology, and I fear as regards its ultimate result.

Case of severe Peripheral Neuritis due to Chronic Alcoholism.

A highly educated widow, aged 40 years, had been engaged for some years in assisting her husband in his

literary work. The two were in the habit of working late into the night, and "to keep themselves going" were accustomed to take whiskey and soda at intervals—intervals which, as time went on, became progressively shorter: they never became intoxicated. Eighteen months before her admission her husband died suddenly in her arms. She then went to live quite by herself in a cottage in the country, and, owing to grief and loneliness, greatly increased her alcoholic intake (up to about a bottle of whiskey a day). For the last twelve months she had suffered from marked symptoms of peripheral neuritis. A fortnight before admission she had an attack of delirium tremens, precipitated by gastric catarrh. On admission she had been an abstainer for one week. There was almost complete loss of power in the lower extremities. The muscles were greatly wasted: there was foot-drop, and the legs were flexed on the thighs: extreme pain in the soles of the feet, especially at night, and hyperæsthesia from the knees downwards: the feet were œdematous and shapeless, knee-jerks nearly absent, other reflexes mostly exaggerated. Occasionally there was enuresis, a symptom stated to be extremely rare. There were no mental symptoms, except a tendency to emotionalism and hysteria. Pulse 128, rising to 140, 150, and even 160 on slight exertion, when there would be a decided tendency to syncope. The maximum systolic blood-pressure was 96 mm. Hg.

She proved to be intolerant of strychnine, which, even in quite moderate doses, caused intensely painful muscular contractions effectually preventing sleep. Under bromide of sodium and digitalis, with veronal in 15- and 20-grain doses at night, there was some improvement in her general and circulatory conditions. She remained but a few weeks in the sanatorium, and was then transferred to a hospital for diseases of the nervous system.

About a month later she died suddenly, as her husband had done. In her case it seems fair to conclude that the neuritis had involved the pneumogastriacs.

In the above case, excluding the one attack of delirium tremens, the mind remained unaffected throughout. Severe peripheral neuritis, associated, as so often happens, with gross mental disorder, is exemplified in the following case :

Severe Peripheral Neuritis with Prolonged Mental Disorder.

A married man of means, aged 30 years, had been drinking heavily all his adult life, very heavily since his marriage five years previously. He drank continuously to the extent, according to his wife, of at least two bottles of spirits every twenty-four hours. On admission he was emaciated and crippled, bed-ridden in fact. He had lost the use of his lower extremities, the muscles of which were greatly wasted : there was foot-drop, and evidently pain and great tenderness in his feet. Knee-jerks absent : other reflexes somewhat exaggerated. He was quite delirious, having no knowledge of his surroundings, and obviously suffering from hallucinations of both sight and hearing.

The male nurse, who had attended him continuously for a month, stated that four days previously he had three severe attacks of major epilepsy, whereupon all alcohol was at once stopped by his medical attendant. Next night he had a fourth fit ; and during his journey to the sanatorium in a motor car he first commenced to be delirious.

He remained in the sanatorium a fortnight. Throughout, he took food well and improved a little physically. But in order to provide sleep, it was necessary to give hyoscine hypodermically to the extent of $\frac{1}{100}$ and even $\frac{1}{80}$ gr., at first every eight, later every twelve hours. He had no alcohol after admission. When taken home he was still delirious, but was beginning to realise his surroundings. Six months later, however, he had not recovered his sanity.

Some would class this case as one of polyneuritic

psychosis or Korsakow's disease. To me, however, it seems preferable to speak of it as a case of *chronic delirium tremens*. The *mental* symptoms were indistinguishable from those of ordinary delirium tremens: they commenced quite definitely, and long after the development of the neuritic paralysis; and they were obviously precipitated by the sudden cessation of the large quantities of alcohol in regard to which the patient had for years established a high grade of tolerance (compare the proximate causation of delirium tremens) (p. 145 *et seq.*).

Only one other similar case has occurred in the sanatorium. In it, however, the neuritis was hardly more than incipient (it was purely sensory); and the mental symptoms, though lasting some two or three weeks in all, completely cleared up before the patient left.

While severe cases of peripheral neuritis have been rare, very mild or incipient cases have been fairly common. They have occurred almost solely in chronic inebriates or chronic alcoholists, more especially in the latter, in whom intoxication rarely happens. The symptoms are slight—often so slight as barely to attract the patient's attention. They are usually sensory only, consisting of slight and occasional fleeting pains and pricking sensations referable to the limbs, especially to the lower limbs, and in my experience, more often than elsewhere to the soles of the feet: such pains always become exaggerated at night. Also there may be patches of anæsthesia over the area of distribution of some special cutaneous nerve, and more rarely a sensation of coldness, usually subjective, but sometimes objective also.

Now and then cases occur in which there are mild tabetic symptoms, such as inability to walk steadily with closed eyes. Less frequently there are symptoms resembling lateral scleroritis with increased tendon-reflexes, and marked intolerance of strychnine.

The prognosis in incipient cases of alcoholic peripheral neuritis is certainly good: all such have undergone marked improvement, even during the short time they have remained in the sanatorium.

ALCOHOLIC ALBUMINURIA.

The subject of alcoholic albuminuria has not apparently attracted very wide-spread attention in the medical profession. In Dixon Mann's last edition of 'The Physiology and Pathology of the Urine,' reference is made to the albuminuria which is due to damage done to the renal epithelium by the passage through it of toxic substances present in the blood, either autogenous as in diphtheria, or exogenous as in poisoning by cantharides, phosphorus and mercurial salts. But no special mention is made of alcohol. Yet on reflection it must be conceded that alcohol is by far the commonest of all the causes of toxic albuminuria. Moreover, it is not difficult to show that alcoholic albuminuria has important clinical significances, especially when viewed from a therapeutic standpoint.

During the years 1909 and 1910, 153* consecutive male cases were systematically examined for albuminuria (women were excluded from the series on

* The 153 male cases examined do not of course include *all* the male cases examined; they represent merely a consecutive series examined especially for statistical purposes.

account of obvious possible fallacies). The urine was well acidulated with nitric acid, boiled, and allowed to stand for twenty-four hours in a graduated test-tube, the amount of deposit then being read off. All the cases were examined on the day of, or the day after, admission. If there was no albumen present, no further test was made. Whenever albumen was found, the urine was tested every day or every other day until it completely disappeared, or until the patient left the sanatorium.

Of the 153 cases, 47 had ceased drinking before admission, while 106 were still drinking.

Of the 47 who had ceased drinking, 17 showed albumen, 30 none. It is significant that the latter had all ceased drinking for five days or more previously, while the former had abstained for not longer than two or three days. Of the 17 cases showing albumen, in 16 the quantity varied from a mere trace up to 2 per cent. : in all but one of these the albumen cleared up in the course of a week or so : in one it was present at the patient's discharge. In one case the quantity present on admission was 30 per cent., and on leaving 10 per cent. ; this was undoubtedly a case of Bright's disease, for there were many casts.

Of the 106 cases still drinking on admission, in only ten was albumen absent. Of these 10, one had been drinking for two days only, having been an abstainer for several weeks previously : one was drinking light ale only, and that moderately : five were drinking for some time, but in some moderation, *but three were drinking spirits heavily.*

Of the 106 cases, 96 showed albumen. In 34 of

these, the quantity was a mere trace which rapidly disappeared. In 53 it varied between 1 and 3 per cent.; and in only one of these was it present at the patient's discharge. In 5 the quantity varied between 4 and 6 per cent., and in all these the urine quickly cleared. In 4 the quantity varied between 6 and 20 per cent.; and only in the one case in which the quantity amounted to 20 per cent. was albumen present when the patient left the sanatorium: it had then, however, fallen to 2 per cent.

From the above statistical analysis, and from large numbers of cases examined less systematically, both before and after the commencement and end of the above consecutive series, certain conclusions (some perhaps only provisional) may be drawn.

(1) In the majority of cases of alcoholism, albuminuria, if carefully looked for, will be found, both during the time that the patient is drinking, and for at least a few days afterwards.

(2) In the majority of cases in which albumen is found, the quantity is small: it varies from a trace to 1 or 2 per cent.

(3) In the *great* majority of those in which it is found, the albumen, even when in large amount, is temporary. As the alcohol is steadily withdrawn the percentage of albumen steadily falls until it ceases to be discoverable. There are a few exceptions, however: sometimes when alcohol is rather suddenly withheld, there is a temporary increase in the percentage of albumen. These cases require further investigation, and might lead to interesting results.

(4) Other things being equal, the percentage of albumen varies directly (*a*) with the amount of alcohol

taken : (*b*) with the duration of the alcoholic habit : (*c*) with its continuousness : (*d*) with the strength of the liquor consumed, spirits of any kind being more potent than ale, or even wine ; and (*e*), I think, with the age of the patient : it seems reasonable to believe that in early manhood the kidney would be more resistant to damaging influences than later, and the facts appear to support this view.

(5) A high percentage of albumen has important clinical significances. It points almost without exception to long-continued heavy spirit-drinking, with few or no intermissions of abstinence, and to the establishment of a high grade of tolerance of alcohol. Eight patients who showed on admission 5 per cent. of albumen and upwards were chronic alcoholists who rarely or never became overtly intoxicated ; and most of them presented other objective evidences of chronic alcoholism. Thus four suffered from peripheral neuritis, one from toxic amblyopia (probably largely caused by excessive smoking), and two from gross acne rosacea.

(6) A high percentage of albumen seems especially to forebode the occurrence of those alcoholic emergencies, alcoholic epilepsy and delirium tremens, which are prone to arise when alcohol is more or less suddenly withheld from the chronic alcoholist. One patient (showing 7 per cent. albumen) had suffered in the past from seven attacks of alcoholic epilepsy, and every attack had followed sudden abstention, whether accidental or intentional. Another (10 per cent. albumen) had a major epileptic attack three days after his admission into the sanatorium. Another (8 per cent. albumen) went through a long and very

serious attack of delirium tremens. Two patients (10 and 5 per cent. albumen respectively) had incipient delirium tremens, which, however, was in both instances cut short by prompt treatment; while three more (about 5 per cent. albumen) suffered during the process of withdrawal from intense muscular tremor, insomnia, and an unusual degree of mental misery.

The presence of much albumen in the urine is regarded by the majority of the medical profession as an additional or special reason for the withdrawal of alcohol. This view is, broadly speaking, correct: an alcoholic who has severe albuminuria is injuring himself physically above the average; and consequently it is specially important for him to become an abstainer. But a very important qualification must be made. In all such cases the alcohol should be cautiously tapered off according to the principles laid down later (p. 212), never suddenly withheld. In certain cases in which a high grade of tolerance has been established, the alcohol has been withheld suddenly, or what comes to the same thing, has suddenly ceased to be absorbed through the onset of gastric catarrh and persistent vomiting. And in some of these there has been a marked immediate rise in the percentage of albumen. Concurrently in a few, there has been a marked fall in the amount of urine passed, and it is conceivable that in such circumstances uræmic symptoms might occasionally develop: in fact, I am inclined to believe that in one fatal case which occurred some years ago in my own private practice, uræmia arising under the above-mentioned conditions was the proximate cause of

death, which was at the time ascribed to chronic Bright's disease. One case in which a very marked rise in the percentage of albumen followed the complete withdrawal of alcohol is especially referred to in the chapter on delirium tremens (p. 158). Meanwhile, let it be repeated that a *high percentage of albumen in a case of chronic alcoholism is a special indication for cautious tapering as against sudden withdrawal.*

The phenomena of alcoholic albuminuria are occasionally under certain conditions useful for detective purposes. Take the case of a patient who was drinking on admission and who showed decided albuminuria. In the course of a week he has ceased to take alcohol, and a few days later his albumen has disappeared. A little later still he is at liberty to leave the sanatorium grounds and amuse himself in the neighbourhood. Should albumen reappear in the urine in these circumstances it is nearly certain that he is not "playing the game," and has recommenced taking alcohol in some quantity. In cases in whom the albumen has not quite disappeared, an increase in the quantity may raise the suspicion of renewed alcoholism, but does not justify any certain conclusion in that respect : there are many causes for slight variations in the quantity of albumen passed.

HEPATIC COMPLICATIONS.

In considering the pathological action of alcohol on the organs of the body, it has become natural to look first of all to the liver ; and amongst the various affections of that organ, atrophic cirrhosis at once arises in the mind. But of late doubts have been

expressed as to the real frequency of the disease. Mott, comparing the statistics of hepatic cirrhosis in general hospitals and asylums, finds the disease relatively common in the former, nearly absent in the latter. In the whole of his very large asylum experience he has met with but one example of very advanced cirrhosis associated with ascites. He explains the discrepancy on the grounds that a large number of asylum patients who have been inebriates suffer from intolerance of alcohol, and that such can very seldom drink sufficient alcohol, extended over a sufficient length of time, to produce advanced cirrhosis. Hepatic cirrhosis—the atrophic variety certainly, the hypertrophic probably—is practically restricted to the class of chronic alcoholists. As pointed out by Wilkinson, it is the steady “sober” drinker, not the habitually drunken person who is the victim of cirrhosis. A brain sensitive to alcohol is a safeguard against it; and so, too, is a stomach which is readily irritated into catarrh. Hence the intermittent impulsive drinker who continues drinking until he is unable to retain anything in his stomach is hardly likely to become affected.

During the last five years at the Norwood Sanatorium atrophic cirrhosis has been extremely rare; there has been no case of ascites, and in only one case did I feel justified in concluding that the liver was contracted. It may be, of course, that many cases of incipient cirrhosis were overlooked, but against this must be placed the absence of distinctive symptoms of the disease. Now, whatever the real cause, this infrequency of the complication cannot be explained, as in asylums, by any preponderance of

patients who suffer from a natural or inherent intolerance of alcohol, for a very high proportion of the patients admitted suffer from the opposite condition, namely, a very sedulously acquired tolerance of alcohol; and it is just amongst such patients that we should expect to find atrophic cirrhosis. One can only conclude, therefore, that this well-known, and constantly looked for, alcoholic complication is considerably less frequent than is commonly supposed. This is borne out by the statistics of the Inspector under the Inebriates Acts. For ten years, out of 3300 inebriates, no case of cirrhosis of the liver was recorded. During the last year, however, there have been two cases.

There have been five or six cases of chronic symmetrical and quite painless enlargement with induration—cases, no doubt, of hypertrophic biliary cirrhosis; and in all these there have been slight occasional attacks of jaundice. In most of them there has been no perceptible diminution in the size of the organ during the patient's stay in the sanatorium.

The only *common* hepatic affection is slight enlargement with tenderness, due to congestion. This is present during the continuance of the drinking and rapidly subsides when alcohol is given up.

Occasionally, however, cases occur in which the symmetrical enlargement of the liver is marked: in which, consequently, there is imminent danger of concluding that the organ is affected with irreparable structural disease, but which steadily and rather rapidly convalesce in all respects under the influence of abstinence from alcohol, and perhaps other

appropriate treatment. The following case, an extreme example of this small class, may be of interest :

Alcoholic Enlargement of the Liver ; Practical Recovery.

A stout man, aged 50 years, a builder by trade, entered the sanatorium in March. He had been a moderate drinker until three years ago, when he contracted influenza, which was complicated by pneumonia and followed by albuminuria. The illness left him weak and depressed, and resulted in a decided increase in his alcoholism. The amount of alcohol taken thenceforward steadily rose, until of late he was drinking little short of a bottle of whiskey a day: he never became intoxicated.

On admission he weighed 16 st. 4 lb., he was decidedly anæmic and had some œdema of the legs, but no ascites nor any signs of jaundice. He was obviously weak, not being able to walk more than one hundred yards on the level without shortness of breath and general distress. His heart-sounds were normal, pulse 82, blood-pressure 125 mm. Hg. The urine was high-coloured: specific gravity 1018: there was a trace of albumen with a few hyaline casts, a small excess of leucocytes and a few corpuscles: no bile-pigments.

The liver was enormously enlarged, the lower edge anteriorly being nearly down to the umbilicus: the enlargement was symmetrical, the surface of the organ smooth. When the patient was standing the outline was visible, though the abdomen was thickly covered with fat. The patient suffered no pain, nor was the liver tender to pressure.

The ordinary treatment was pursued, except that the atropine was omitted after a fortnight, and the strychnine pushed: for three weeks he had up to $\frac{1}{10}$ gr. of the latter drug hypodermically thrice daily.

Improvement commenced a few days after admission and

was continuous. The albuminuria ceased within five days, and so did the œdema of the lower extremities. The signs of anæmia began to recede, and his power of walking without fatigue steadily increased. But the most marked, because the least looked for, improvement was in the liver. The organ commenced to shrink within a week of admission, and the shrinkage continued without interruption until the end of June, when I last made an examination. It would then have been easy to miss the fact that there was any enlargement. His own medical attendant estimated that in the mid-line anteriorly the lower margin of the organ had retreated upwards $3\frac{1}{2}$ in. Taking a normal liver at, roughly, three and a half pounds in weight, the patient's liver might have weighed on admission eight pounds, whereas, at the end of June, its weight would probably not have exceeded five pounds. At this time the patient himself weighed 14 st. 9 lb. He is now in fair general condition, but his blood-pressure has risen to 144 mm. Hg. This is probably due to the great increase in his intake of food.

The case is of interest from several points of view, but mainly from that of prognosis. On admission it was impossible to differentiate the condition of the liver from the cases of hypertrophic biliary cirrhosis above referred to—cases in which no material improvement was to be expected in a few weeks; and indeed my own prognosis was guarded, if not gloomy. Judging by the outcome, however, it is to be presumed that the hepatic enlargement in this case, although so extreme, was due mainly to passive congestion from heart weakness.

GASTRIC CATARRH AND VOMITING.

Vomiting, retching, nausea, etc., are, of course, common alcoholic symptoms: they are of consider-

able clinical importance, since quite frequently they are the determining cause of an attack of delirium tremens, or alcoholic epilepsy; but they do not always, as is apt to be assumed, depend upon a gastric catarrh, the direct result of continued irritation by alcohol.

Morning dry retching, probably the most prominent symptom of the chronic alcoholic, depends, in my experience, far more upon catarrh of the fauces, pharynx and trachea than of the stomach. Faucial, pharyngeal, tracheal, and even post-nasal catarrh are extremely common in all chronic alcoholists. During the night mucus collects on all the surfaces indicated, and the coughing and other efforts made on awaking to clear the passages set up so much extra congestion and consequent irritation, especially in the faucial area, that reflex retching, often very violent, ensues. (In the case of an elderly man, with high blood-pressure and probably arterio-sclerosis, morning retching was the immediate antecedent of an attack of hæmorrhagic apoplexy, which proved fatal in a few months.) The symptom may continue to recur every morning at approximately the same hour for years in patients who shortly afterwards enjoy a fairly good breakfast and eat two or three other adequate meals during the day without any signs of gastric dyspepsia. It is not intended to deny, however, that some catarrh of the gastric mucosa may be present even in these cases, and that such may be so severe as to affect nutrition.

Probably the gastric condition which most nearly approaches an acute catarrh is that which comes on in dipsomaniacs or pseudo-dipsomaniacs towards the

end of the paroxysm, and which, indeed, appears often to be the actual instrument which terminates the paroxysm. It is characterised by total inability to retain either solids or liquids, and by incessant nausea and retching: large quantities of mucus may be ejected. Even here, however, there is not as a rule much gastric pain; nor anything but slight tenderness on deep pressure over the epigastrium.

The more chronic gastric catarrh dependent on alcoholism is insufficient as a rule to cause vomiting, except in special circumstances: there is merely loss of appetite and discomfort after food. Nausea and vomiting, however, may arise either from a heavier bout of drinking than usual, or from the sudden or too rapid withdrawal of alcohol. The latter kind occur only in chronic alcoholists who have established tolerance. It is not sufficiently recognised. A common history is as follows: a chronic alcoholic, taking something over a bottle of spirits a day, at last makes up his mind to enter the sanatorium; but imbued with the idea that after admission he will be immediately cut off from all alcohol, makes strenuous efforts to reduce the amount during the week previous. Such efforts are always spasmodic and usually far too heroic. Probably the patient takes nothing for twelve hours or so, at the end of which time he is retching, and perhaps unable to retain even spirits. Such has been the history of several cases of delirium tremens.

All such gastric revolts can be prevented by careful tapering. It is better, therefore, that *in all cases of chronic alcoholism, the tapering process should be carried out in the sanatorium, not attempted prior to admission.*

As regards special therapeutic measures to be adopted at the onset of nausea, retching and vomiting, nothing in my experience gives such good results as medical washing out of the stomach. The water used should be comfortably warm and alkalinised with bicarbonate of soda; and as much should be drunk as can be retained. Should vomiting not be at once induced, the fauces may be titillated with a feather or the finger. The procedure may be repeated several times, though this is rarely necessary. The result of emesis is an immediate sensation of gastric comfort attainable in no other way.

CHAPTER V

Abstinence phenomena of alcoholism—Natural tolerance—Acquired tolerance; alcoholic insomnia; tolerance of morphine; tolerance of chloral; tolerance of veronal; tolerance of cocaine—Loss of acquired tolerance—Intolerance; pathological drunkenness; *mania à potu*—Affections arising during and after convalescence from alcoholism; recurrent or periodic anorexia; recurrent or periodic "bilious" attacks; recurrent sick headache; recurrent or periodic diarrhœa; recurrent or periodic migraine; morning headaches; persistent high blood-pressure; acute articular gout.

ALCOHOLIC epilepsy and delirium tremens demand special consideration, both on account of their great clinical importance, and because, in the view of the writer, they stand to the alcoholic habit in a position which differs essentially from that of the complications already referred to. The view here taken is that both these alcoholic emergencies are abstinence, or sudden abstinence, phenomena of chronic alcoholism. They are strictly analogous to the symptoms and complications which arise when a chronic morphinist is suddenly deprived of his long-accustomed drug. They depend primarily, of course, upon long-continued alcoholism, and upon the consequent establishment of alcoholic tolerance; but proximately they depend in all cases upon a *sudden fall in the amount of alcohol circulating in the blood and bathing the brain and nervous system* generally. They occur, therefore, for the most part, though not

exclusively, in patients, who, in spite of prolonged, heavy and regular indulgence in alcohol, have either never or but seldom been overtly intoxicated.

Before bringing forward the evidence and argument in support of this thesis, it will be convenient to clear the ground by referring to the technical use of certain terms, namely, "tolerance, natural and acquired," "loss of acquired tolerance," and "intolerance, natural and acquired."

By "tolerance" is meant the capacity to ingest relatively large amounts of a drug without experiencing its ordinary obtrusive physiological effects. Tolerance concerns many drugs, mostly narcotic: it may be to some extent innate, but is far more commonly acquired.

NATURAL TOLERANCE.

Natural tolerance is not of any special interest in this connection. It is a matter of observation that some individuals, ordinarily abstainers or quite temperate, are able to consume large amounts of alcohol without showing the usual alcoholic symptoms. The condition is spoken of as "constitutional," though that term does not seem to add very much to our knowledge.

ACQUIRED TOLERANCE.

This is, on the other hand, of extreme interest and importance, clinically and otherwise.

Tolerance of alcohol.—In the case of alcohol it arises in all cases through a long course of steady, uninterrupted drinking, the amounts taken being for the

most part inadequate to produce even incipient drunkenness, adequate only to cause marked, or perhaps merely mild, euphoria. The subjects of this form of drinking *attain satiety at this stage*: they are not tempted, therefore, to proceed further, except perhaps on very special occasions. But as time elapses, the amount of alcohol necessary to produce euphoria progressively increases, until eventually, in the course of years, very large quantities (25 to 35 fluid ounces of spirits) may be daily absorbed, and the patient be suffering from chronic alcoholic poisoning. Even then he may never have been intoxicated, and may still be conducting his business with some success. But he is in constant danger of severe nervous complications. For a *corollary of acquired tolerance is intolerance of sudden abstinence, or even, in some cases, intolerance of any sudden large reduction in the amount of alcohol circulating in the system*. A mere temporary abstinence, or large reduction, may give rise to an epileptic convulsion: a more sustained abstinence or sustained large reduction may cause an attack of delirium tremens. And the consequences *may be serious*. I know of two patients admitted into institutions who died suddenly shortly after sudden withdrawal of alcohol. In one case the patient cut his throat in an early stage of delirium: in the other sudden heart failure occurred apparently without the intervention of delirium.

Delirium tremens resulting from sudden withdrawal is very clearly illustrated in a case which recently came under notice.

An energetic man of business, very successful, aged

47 years, who had rarely been out of sorts in his life and never intoxicated, commenced to suffer from gall-stones, although he had always been, and still was, of exceptionally active habits. He was lean and muscular, constantly in hard condition, and to all appearances extremely temperate. Operation was advised: to this he consented. Accordingly he entered a nursing home on a Saturday afternoon. On the Sunday morning the operation was performed without a hitch and with entire success. On the Monday morning there was no rise of temperature, he was very well, and comfortably reading his newspaper. On Tuesday morning he became a little irritable and made trivial complaints against his nurse: throughout the day he did not improve. That evening he became delirious: when his wife called to see him he asked her to sit on the bed and keep all other people away from him, although there were no others present. At 11 p.m. he became violently delirious, fighting with his nurses, who numbered five, and continually calling for whiskey and soda. His mental condition remained unaltered until 6 a.m. on Wednesday, when he died from heart failure.

The operator was probably not fully acquainted with his patient's habits as regards alcohol; but these were well known to his personal friends—especially perhaps his male friends. He never took alcohol before breakfast. During the forenoon, he would take one or two stiff glasses of whiskey and soda: for lunch, one or two more, followed by a glass or two of port. In the late afternoon he would have more than one whiskey and soda: at dinner, wine; and in the evening whiskey and soda again. To sum up, he would take from 16 to 20 fluid ounces of whiskey *per diem*, and in addition "appetisers" such as gin and bitters, sherry and bitters, before, and wine (champagne, hock) during, his dinner. This course he had pursued for from fifteen to twenty years: that he presented so strikingly healthy an appearance he ascribed to his unusually active habits, wherein he was probably right.

The patient clearly died from "post-operative delirium tremens." Concerning such cases, which constitute a well-marked group, Mummery says: "I think in these cases the partial starvation or alteration in diet necessitated by the operation is more often the cause of the delirium than the operation itself."* Whether this is so, or not, it is certain that in the case described the delirium commenced at almost the exact time—namely, seventy-two hours later—that might have been anticipated had the patient's usual allowance of alcohol been suddenly withheld when it was withheld, and without any subsequent operation.

In operations on drug cases (morphine, cocaine, etc.), it is conceded that the risks are greatly enhanced if, at the same time, the drug be stopped. It is advised, therefore, that the drug be continued throughout the operation period and convalescence therefrom in *undiminished doses*.† This plan may be permissible, and even expedient, in morphinism, cocainism, etc.—cases in which the drug can be introduced hypodermically; and it is, of course, unavoidable in *all cases in which the operation is one of emergency*. But in chronic alcoholism there can be no certainty of preventing disaster in this way. In severe cases of this drug habit, very large amounts of alcohol are often required to prevent the onset of delirium; and after general anæsthesia, it may be quite impossible to get the stomach to retain even small doses of alcohol. Vomiting, whether merely nervous or dependent on gastric catarrh, is the com-

* 'After-treatment of Operations,' 1909, p. 22.

† *Ibid.*, P. L. Mummery, 1909, p. 15.

monest determining cause of delirium tremens in all those cases in which this complication supervenes *during the continuance of drinking*.

There remains, therefore, so far as I know, only one means whereby in chronic alcoholists post-operative delirium tremens may be prevented with absolute certainty, namely, a preparatory period of total abstinence enduring sufficiently long to cover the possible onset of this complication. Five or six days of complete abstinence should be enough for this purpose; and where alcoholic tolerance is known to exist, the period of abstinence should be led up to by cautious tapering, not instituted by sudden withdrawal. In these circumstances post-operative delirium tremens would be impossible.

It is unfortunate, as well as somewhat strange, that in the case of alcohol the establishment of tolerance, along with its corollary *intolerance of sudden withdrawal*, has attracted practically no attention from the medical profession. This acquired pathological condition is well recognised with regard to other drugs; yet in alcoholism, by far the commonest of all drug habits, its existence and pathological bearing are all but ignored. "What are your habits as regards alcohol? Are you moderate?" "Quite moderate. Why, I have never been the worse for liquor in my life." Such an answer, so far from being considered satisfactory—as I know is often the case—should instantly raise the suspicion of tolerance. For it is only when tolerance has been acquired that delirium tremens, post-operative or other, need be feared.

Stress has been laid on the kind of drinking

required to establish tolerance of alcohol: it must be regular, and insufficiently rapid to set up physical illness, especially gastric revolts. Irregular heavy drinking leading to frequent attacks of gastric catarrh, vomiting, and prostration, of necessity leads to frequent periods of abstinence, whereby any degree of tolerance already established is lost. Patients so affected are continually starting afresh. Hence dipsomania, pseudo-dipsomania, and even chronic alcoholism, which is frequently interrupted by a day or two of abstinence, do not tend to establish tolerance. Also, it may be pointed out that the possession by a patient of a particularly irritable stomach readily incited to catarrh is a safeguard against tolerance, and therefore against delirium tremens and perhaps against alcoholic epilepsy. Obviously, too, it is some safeguard against all the common tissue degenerations which depend upon long-continued alcoholism.

Short of the grave emergent complications, alcoholic epilepsy and delirium tremens, which may arise, whenever the supply of alcohol is inadequate in patients who have established marked alcoholic tolerance, a series of easily recognised symptoms (which are indeed common antecedents of an attack of delirium tremens) are apt to occur. Amongst these are nervousness and restlessness, anorexia and retching, extreme tremor on voluntary muscular action, and especially insomnia.

Alcoholic insomnia.—Insomnia presents itself in two forms: (a) an inability to go to sleep: (b) an inability to remain asleep. Alcoholic insomnia, that is, the insomnia which especially affects the chronic

alcoholist who has acquired alcoholic tolerance, is usually of the latter variety. Rarely does the patient experience any difficulty in going to sleep, no doubt because he never attempts to do so without taking several "night-caps." But for years he has awoken early in the morning. This tendency increases. As time passes, his initial sleep—the sleep into which he falls on going to bed—becomes shorter and shorter: when he awakes, he is driven to take more alcohol if he is to have any chance of returning to sleep. Eventually, he finds himself with a bottle at his bedside, taking "nips" every few hours throughout the night. And it may be that even then he has never been frankly intoxicated. The treatment of alcoholic insomnia is the treatment of alcoholic tolerance.

Tolerance of morphine.—No one questions the acquisition of tolerance as regards morphine; and the sudden or too rapid withdrawal of this drug has often led to a series of dangerous symptoms. Collapse has ensued and occasionally proved fatal. Profuse and uncontrollable diarrhoea leading to collapse is another not infrequent result: I know of two cases in which death followed this complication. But perhaps the commonest sequela is delirium, which may last a considerable time. One such case occurred in the sanatorium a few years ago, and it became necessary to send the patient to an asylum for some weeks. In this instance it was discovered afterwards that the patient had taken far more morphine than he confessed to, and suffered in consequence from the results of a far too sudden reduction of the drug. Clifford Allbutt, though he does not specifically state that morphine delirium

is an abstinence phenomenon, clearly infers as much in the following two passages :

“ Except on withdrawal of the drug we have never seen the excitement of violence to which the name morphinomania would be properly applied.”* And again: “ Its (morphine delirium) duration is rarely more than thirty-six hours: a morphine injection will probably give prompt relief.”†

Tolerance of chloral.—Cushny says: “ Prolonged abuse of chloral leads to a condition somewhat resembling that seen in chronic alcoholism or morphinism. The sudden withdrawal of the drug in these cases has sometimes led to symptoms resembling those of delirium tremens, which are specially dangerous here, owing to the fatty degeneration of the heart which may be present.‡ In consequence, no doubt, of the present unfashionableness of the drug as an hypnotic, there has been but one case of the chloral habit admitted into the sanatorium during the last six and a half years. And curiously enough, the patient was suffering at the time from “ chloral delirium tremens.”

The patient, a married man, aged 44 years, who had resided until quite lately in New Zealand, had been accustomed to take from 120 to 240 gr. of chloral hydrate, along with an equal amount of potassium bromide, in each period of twenty-four hours; and this for nearly six months continuously. He had also taken some alcohol—8 or 10 fluid ounces of whiskey. Four days before, he had come under medical treatment, and both drugs and whiskey had been largely reduced. On admission in the evening he

* ‘ System of Medicine,’ 1906, vol. ii, p. 956.

† *Ibid.*, p. 955.

‡ ‘ Text-book of Pharmacology,’ fourth edition, p. 192.

was inclined to wander. During the night he became very delirious and violent, threw his water bottle through the window, and tried to wreck things generally. Hyoscine in dose of $\frac{1}{100}$ gr. gave him an hour or two of sleep. Next day he was quiet. But hallucinations of sight were present (caterpillars, cockroaches, etc.), and only subsided gradually in the course of four or five days. The hallucinations were absent in the morning towards the end, returning in the late afternoon and evening. Throughout, his physical symptoms caused no anxiety: his appetite and digestion remained good.

Tolerance of veronal.—Of modern hypnotics probably veronal is most in use at the moment, and three cases in all of the veronal habit have been admitted. In one of these admitted last year, the effect of the sudden withdrawal was seen to be almost identical with that of sudden withdrawal of alcohol where a high degree of tolerance had been established.

The patient, a man, aged 50 years, had been for years a paroxysmal inebriate, indulging in methylated spirit and eau de Cologne when unable to obtain other kinds of alcohol. Under medical treatment, however, he had recovered and had abstained from alcohol for six months. Unfortunately, he had learned that veronal had the power to reduce irritability and to give mental comfort when taken in doses short of those necessary to cause sleep; and for some months he continued to take this drug throughout the daytime in amounts varying from 30 to 60 gr. His friends noticed that he was drowsy at times, and, suspecting a return of alcoholism, sought medical advice. In consequence he was kept in bed in charge of a nurse and was unable to indulge further in veronal. For the succeeding week he was sleepless, nervous and excited, and found he had lost his

power of speech to some extent. At the end of a week he appeared to be improving, but quite suddenly became maniacal, struggling to get out of bed, and obviously suffering from hallucinations of both sight and hearing. As his medical attendant said, his condition was one of typical delirium tremens. At the end of three days he suddenly became convalescent and has remained well now for over twelve months.

Tolerance of cocaine.—It is quite common for morphinists to “fortify” or “sweeten” their injections with small or medium-sized doses of cocaine, but *cocainism* pure and simple seems rare in this country. Only three or four cases have been admitted into this sanatorium during recent years.

The experience of these, however, suggests that cocainism occupies a somewhat exceptional position. Obviously, the possibility of the acquisition of tolerance as regards cocaine is a fact, since patients may take 30 gr. *per diem* and upwards. But the corollary, intolerance of sudden withdrawal, does not seem to be markedly true. In the few cases of this uncomplicated drug habit admitted the cocaine has been very rapidly withdrawn with no more serious result than discomfort: certainly nothing resembling delirium has occurred. It must be remembered that unlike some other narcotic drugs liable to set up habits, delirium is often a *direct result of each cocaine injection*. Possibly this fact may give the key to the comparative absence of delirium from sudden abstinence. On the other hand, it may be that the cases of pure cocainism admitted were altogether exceptional.

Only one case of the paraldehyde habit has been

admitted. Here the drug was withdrawn in two days without results other than discomfort. The case was a mild one, however.

LOSS OF ACQUIRED TOLERANCE.

It is essential, in their own interests, that drug *habitués* should understand the full significance of the acquisition and loss of tolerance. A chronic alcoholic who perhaps for many years has daily absorbed large amounts of alcohol without betraying himself, enters the sanatorium and is tapered off. In six or eight weeks' time he has recovered to the extent that he is eating and sleeping well, and enjoying life generally without alcohol. Such a patient has largely, if not completely, lost his acquired tolerance of alcohol. Later, perhaps, through some more or less accidental circumstance, he takes some alcohol. He is then prone to argue that, having broken his resolution, he may as well be "killed for a sheep as a lamb." If he does, and is ignorant of the loss of his tolerance, he may drink to the extent he was accustomed to do previously. In this event he becomes violently intoxicated—it may be for the first time in his life; and his relatives report that not only has he relapsed, but that he is much worse than he ever was before. And this result is ascribed, not infrequently, though of course quite unfairly, to the drugs used in the treatment in the sanatorium. I have known even medical men to argue from this that drugs, such as strychnine, can so permanently alter the nervous constitution of patients as to render them thereafter intolerant of alcohol. Were

it necessary to refute this contention, it could be shown that such intolerance of alcohol frequently follows a period of detention in a retreat in which no medicinal treatment is in use.

The *comparative* intolerance of alcohol which succeeds a period of abstinence has led occasionally to death from acute alcoholic poisoning.

A well-known American journalist had established tolerance to the extent that he habitually took from one and a half to two bottles of whiskey a day, and that without neglecting any of his journalistic duties. But he began to suffer in his physical health, and determined to become an abstainer. He was treated, and the treatment was a success. For a time (six months) he was an enthusiastic temperance advocate, and eventually wrote a most brilliant article on alcoholism. On the night of the publication of this article, however, he was found comatose in a third-rate saloon: he died within forty-eight hours from acute alcoholic poisoning. The exact quantity of whiskey which he drank was uncertain, but it was known not to have exceeded what he was accustomed to take before his treatment six months previously.

Morphinists as a class seem to appreciate more fully the significance of the acquisition and loss of tolerance, this probably because they are conscious throughout that they are dealing with a dangerous drug, not, as many still regard alcohol, an every-day article of diet. Nevertheless, accidents happen :

A priest had been weaned from morphine, of which he had taken 10 gr. daily, and remained free for two years. He contracted a severe cold, and became much depressed. He visited the chemist who had previously supplied him with the drug, and requested the usual dose. The chemist,

ignorant of the fact that he had ceased taking any, supplied him. The dose proved fatal.

In another case an ex-morphinist nearly lost her life through sheer ignorance. She had been weaned from morphine, which she had taken to the extent of thirty grains daily, and had taken none for some months. But on the occasion of an emotional upset she injected a grain or more and remained comatose for many hours.

Tobacco smoking is now classed by some as a drug habit, and although tobacco can hardly be regarded as a narcotic, there is no doubt that tolerance of it is established, and that sudden withdrawal is apt to be associated with discomfort. Also, though this is not so widely known, the acquired tolerance of tobacco may be lost.

A merchant seaman commanding a large sailing vessel cleared from Boston to Calcutta. The second day out it was discovered that no tobacco had been taken on board for the men. Various substitutes were tried, but nothing suitable was found; and the crew were mutinous and troublesome throughout the entire voyage, which, owing to head winds, occupied nearly six months. For the last fortnight, the men talked of nothing but the smoke they were going to have on arrival. Immediately they were safely tied up in Calcutta all the crew purchased tobacco and started to smoke. In practically every case, however, the effect was to make them extremely sick.

INTOLERANCE.

A natural intolerance of various drugs is met with occasionally. Three patients have been treated in the sanatorium who showed this condition in regard to strychnine: hypodermic doses of $\frac{1}{20}$ gr. caused in

them marked physiological effects, spasms, stiffness of the lower extremities and difficulty of walking. One or two cases of intolerance of ordinary doses of atropine have occurred, and one in which the bromides had to be abandoned.

Intolerance of alcohol leading to what is termed "pathological drunkenness" has attracted considerable attention of late in Germany, mainly from the point of view of criminal responsibility. It seems most commonly an inborn or natural condition, but in some cases has undoubtedly followed head injuries. It is found also in the insane, weak-minded and epileptic, and some neurasthenic and hysterical subjects. The subject is discussed in a leading article of the 'British Medical Journal' for January 1st, 1910. Therein reference is made to the work of Kraepelin and his school, who have demonstrated by means of an apparatus capable of estimating differences of one thousandth of a second that there is, after even small doses of alcohol, a shortening of the reaction period which intervenes between a stimulus and its motor response: the normal intervening period corresponding to psychic elaboration is expunged or nearly so. In the words of Kraepelin, "This facilitation of motor reaction is the source of all the unconsidered and aimless, as well as impulsive and violent, actions which alcohol has notoriously produced."

Several typical examples of intolerance of alcohol and consequent "pathological drunkenness" have been observed among patients admitted into the sanatorium. In one very marked case the patient is a hard-working and very successful tradesman, aged

48 years. Possibly as a result of long-continued over-work he is very subject to insomnia; and after a sleepless night, the least worry of any kind causes intense mental irritability with depression. In this condition he is driven to take alcohol. But any alcoholic drink, even in quite moderate amounts, exerts a pathological influence. On one occasion he had taken but three small (reputed pint) bottles of beer, when he committed what might have been a fatal assault upon his son, to whom he is much attached.

It is a question whether a majority of those who find themselves in the police station on Saturday night are not examples of alcoholic intolerance and consequent "pathological drunkenness." This, of course, applies especially to those who are charged with being drunk and *disorderly*, and with particular force to those who are frequently and regularly arrested. Such persons are not generally overburdened with wealth, and frequent "physiological drunkenness" is by no means an inexpensive amusement. Certain it is, at any rate, that very many of the cases entered in the receiving books of the police station as delirium tremens are nothing of the sort: most probably they are cases of "pathological drunkenness" depending on alcoholic intolerance, and would be more correctly described as *mania à potu*, or as hysterical or maniacal drunkenness. For whatever the exciting cause of delirium tremens, it is certain that the essential predisposing cause of that affection (acquired tolerance of alcohol) is a long and expensive process, quite beyond the financial resources of the ordinary police-court drunkard, except in the

few who have special facilities for indulgence, such as barmen, barmaids, potmen and hotel employees generally. *Mania à potu* depends upon intolerance of alcohol, inherent or acquired, and is a direct result of the consumption of alcohol, often in quite small quantities: *delirium tremens* depends upon a tolerance of alcohol which is always acquired, and is a direct result of a sudden inadequacy in the regular supply of alcohol to the blood and nervous system. Further distinguishing features are*: In *mania à potu* (acute alcoholic mania, maniacal or hysterical drunkenness) the onset is sudden, without warning, and without previous muscular tremor: the pulse is strong and bounding: hallucinations are rare: there are furious but short-lived rage and homicidal impulses, with a *complete absence of terror*: physical signs of illness, such as white tremulous tongue, nausea and vomiting, are absent, or extremely rare, and the patient rapidly recovers his sanity without complications. *Mania à potu* is extremely unlikely to be complicated by albuminuria.

When it has become generally recognised that *delirium tremens* occurs only in those who have established alcoholic tolerance, and is a direct result of an inadequacy in the supply of alcohol to the nervous system, there will be no further danger of mistaking this affection for *mania à potu*, or conversely.

Branthwaite divides chronic alcoholists who eventually come under the care of the State into two classes: (a) Degenerates, imbeciles, and epileptics; and (b) moral and social defectives.

* 'Inebriety or Narcomania,' Norman Kerr, 1894, p. 84 *et seq.*

“A marked intolerance as regards the action of alcohol is present in both the refractory and quiet class of defectives, very small quantities of drink, no more than is taken daily without apparent physiological effect by an ordinary individual, being sufficient to cause disorderly and violent behaviour. Our experience in this direction has led us to accept the view that intolerance of the exciting effects of small quantities of alcohol may be considered a fairly certain sign of impaired mental equilibrium.”* And Mott, who quotes the above, argues “that a person who can drink to a condition of advanced cirrhosis of the liver has inherited an inborn stable mental organisation.”† That is to say, hepatic cirrhosis excludes intolerance of alcohol, and conversely.

The signs of alcoholic intolerance have been thus summarised by Tomaschny:‡ Objective—marked finger-tremor, increased knee-jerks and other deep reflexes; inequality of the pupils, and immobility to light stimulation. Subjective—the unusually rapid appearance of the usual picture of acute alcoholism, with false recognition of objects, actual hallucinations, powerful emotional disturbances, with their corresponding motor expressions, followed by complete recovery and total amnesia for the events of the period of intoxication.§ I am not able to verify or dispute these observations; many of the signs have certainly been absent in some of my cases of intolerance of alcohol.

* ‘Report on Inebriate Reformatories for 1905,’ p. 10.

† ‘Brit. Med. Journ.,’ November 5th, 1910, p. 1404.

‡ ‘Allg. Zeitschr. f. Psych.,’ Bd. lxxiii, Heft 5.

§ Quoted in ‘Brit. Med. Journ.,’ January 1st, 1910, p. 37.

AFFECTIONS ARISING DURING AND AFTER CONVALESCENCE FROM ALCOHOLISM.

Delirium tremens, alcoholic epilepsy, and many minor affections, insomnia, muscular tremor, some forms of mental depression, anorexia, etc., may be regarded as some of the *direct results* of the withdrawal or sudden retrenchment of alcohol. But there are many affections which are apt to arise later on when convalescence is beginning to be established, and some which appear only after prolonged convalescence. Both may be regarded in a sense as *indirect results* of abstinence.

It is practically only in cases who have suffered from chronic as distinguished from intermittent alcoholism that these affections occur, and the explanation is simple.

The majority of chronic alcoholists suffer eventually from partial or complete loss of appetite, and from chronic gastric catarrh or some dyspeptic condition which interferes with the due absorption of food and with nutrition. When the loss of appetite becomes marked the patient becomes alarmed; and in fact it is this alarm which not rarely drives him to seek treatment. Within a few days after he has ceased to take alcohol the appetite returns, and usually, perhaps a little later, the power of digestion and absorption. Real appetite being an almost forgotten sensation, the patient enjoys it. Partly through this enjoyment, but more perhaps through some crude idea of making up for lost time, he is very prone to over-eat. Moreover, he is especially prone to indulge to excess in those articles of diet, the taste

for which alcoholism is well known to destroy, namely, sweets, puddings, and rich carbohydrates generally. He may suffer in consequence from ordinary dyspepsia after each meal, with acidity, flatulence, etc., in which case he probably recognises the need for, and practices, adequate moderation. But it is rather astonishing to note how frequently the ex-alcoholist rapidly recovers his digestive power. Suffering from no post-prandial discomfort, he continues to exceed. It may be that a rapid increase of weight is all that occurs, which is no doubt the most physiological result. But very commonly—and this especially in those who do not quickly accumulate fat—he commences to suffer, often at regular intervals, from what must be regarded as a strike or revolt on the part of the whole metabolic apparatus. Such metabolic revolts take various forms in accordance with the varying pathological proclivities and capacities of different individuals. Perhaps the commonest—certainly the simplest—is what I have ventured to call recurrent or periodic anorexia.

Recurrent or periodic anorexia.—After some days of excellent appetite and complete digestive comfort, the patient suddenly—and usually on waking in the morning—finds that he has not the slightest desire for food. His tongue may be a little furred, his liver slightly enlarged, and there may be a sensation of fulness in the head, not amounting to headache. Otherwise he is quite well. The condition lasts for twelve, eighteen or twenty-four hours, and then ceases, leaving the patient as he was before the attack. Should there be no change in the patient's dietetic or hygienic habits, the attacks continue to recur at

intervals which are occasionally remarkably uniform.

Recurrent or periodic "bilious" attacks.—These are a slight extension of the above. To the anorexia are added nausea, and perhaps some vomiting, which is apt to assume a bilious character. The tongue tends to be more furred; and there may be some diarrhœa.

Recurrent sick headache.—To the symptoms of the bilious attack add a rather severe headache of a throbbing character, which may be either pancranial or hemicranial, and the attack may well be termed a sick headache.

Recurrent or periodic diarrhœa.—Here the prominent symptom is sudden, severe, but short-lived diarrhœa. Any or all of the symptoms above enumerated may be present. The diarrhœa usually wakes the patient during the night: it is always self-curative.

Recurrent or periodic migraine.—Sometimes, but not frequently, except in those who already have a migrainous habit, the symptoms of the metabolic revolt are typical of true migraine. The headache may be severe, throbbing and unilateral; and I have noted in two cases respectively hemiopia and slight aphasia.

Obviously it is impossible to draw a sharp line of demarcation between any two of these affections: they all graduate by imperceptible degrees into one another. Hence the names here applied are very largely, if not purely, arbitrary. Elsewhere* I have argued that *all* of them *in some cases* are preventable or dispersible by the same

* 'The Food Factor in Disease,' 1905, Longmans Green & Co.

dietetic and hygienic measures, in that they depend upon one and the same fundamental factor—the symptomatic differences between them depending for the most part upon differences in the individual. The fundamental factor is the absorption from the alimentary canal into the blood and lymph of carbonaceous material, especially carbohydrate material, in amounts which are beyond the capacity of the organism for physiological disposal—in more detail, beyond the aggregated capacities of combustion (carbonaceous katabolism) and fat formation, etc. (carbonaceous anabolism). The inferable result is a steadily increasing accumulation in the blood, lymph, liver, and doubtless other metabolic organs, of carbonaceous material, which eventually demands and calls into action *pathological or semi-pathological functions* adapted to disperse, directly or indirectly, the accumulated load. The affections above briefly described are some—probably the commonest—of such pathological functions.

To the blood state which necessitates these functions I have applied the term “hyperpyræmia” (Gr. *pureia* = fuel); but the exact chemical constitution of the accumulated load remains uncertain. As regards the accumulation in the liver (and perhaps some other parts of the organism), this is in all probability simply glycogen; and the distension of this organ with this material, though pathological, is merely an exaggeration of a well-known physiological condition. It seems to be present, and to account for many of the symptoms, in all the affections above described.

The theory of hyperpyræmia (which includes the recognition of glycogenic distension of the liver) is naturally rejected by those who hold, with Bernard, that the fractional percentage of sugar which exists in simple solution in the

blood-serum is the sole blood representative of the large carbohydrate intake and absorption which takes place after each meal; for on this view a carbohydrate accumulation in the blood is impossible, since any carbohydrate excess in solution would rapidly drain off by the kidneys and appear as glycosuria. On the other hand, for those who believe with Pavy* that by far the larger part of the absorbed carbohydrate is concealed in the blood-stream by being incorporated with the proteid molecule, the theory of hyperpyræmia presents no difficulties: it becomes, indeed, almost a natural corollary.

In any case, however, it is certain that the theory of hyperpyræmia directly points to the only correct therapeutics of the affections we are discussing. A carbonaceous accumulation, whether in the blood, lymph-organs or tissues generally, may be, conveniently and in a physiological manner, dispersed (1) by increasing the amount of physical exercise; or (2) by special dieting, that is, reduction of the purely carbonaceous articles of diet. In the former case the rate of combustion is greatly increased, and, consequently, the output of carbonic acid: in the latter, the rate of combustion and output of carbonic acid remain almost unaltered, but the deficiency in the fresh fuel supply permits of the rapid burning off of the offending accumulation: in other words, the income being reduced, the arrears of expenditure are made up.

In practice it is preferable and easier, because less irksome to the patient, to operate in both ways. The food generally should be reduced, more especially the sugars and starches, and regular muscular exercise enjoined between meals. A comparatively slight change in these two directions is always sufficient to put an end to the recurring paroxysm.

As regards the treatment during a paroxysm, the

* 'On Carbohydrate Metabolism,' 1906, J. & A. Churchill, p. 34, etc.

less the better. Simple abstinence from food should be practised until the appetite returns: if headache is present and severe, antipyrin or some similar drug may be given.

Morning headaches.—I have designedly left this variety of recurrent attack to the last, because it is best managed by a special variation in the dietetic and hygienic change. These headaches occur every morning on awaking, or very shortly afterwards: when severe they wake the patient early. Anorexia may be present, but is often absent. They are rather common during convalescence from chronic alcoholism, especially perhaps in women; but they occur, of course, under many other conditions. Most of them—at least of those in the sanatorium—are hyperpyræmic, and their treatment is simple and nearly always quickly successful. It is only necessary to make the last meal of the day at 7 p.m. a small one, and to cut out from it the sugars and most of the starchy articles of food. After dinner, some exercise (preferably outdoor) must be taken, and no food—not even a glass of milk—indulged in subsequently. Nearly always the patient on the succeeding morning is free from all trace of headache.

The affections above dealt with, all predominantly metabolic in character, frequently arise *for the first time* during convalescence from alcoholism. But there is apt to re-arise at the same period and in the same circumstances a long and varied list of affections to which the patient has been liable in the past, but which have remained in abeyance, or perhaps sometimes been merely obscured, during the period of alcoholism. Among such recrudescient

disorders may be mentioned asthma, angina pectoris and skin disease of various kinds, especially acne and eczema. Asthma, acting as an exciting cause of, and alternating with, alcoholism, has been referred to (p. 48). So, too, have acne and eczema during convalescence from alcoholism, while in a case of angina occurring in the sanatorium, the fatal paroxysm was almost certainly determined by a hearty breakfast, which was one of the first meals the patient had enjoyed since recovering from an attack of delirium tremens.

Persistent high blood-pressure.—Whether alcoholism *per se* is, or is not, a factor in high blood-pressure is a moot point. My own belief is that it is not—at least not an important factor. Though a far greater number of observations are required before a definite conclusion can be drawn, chronic alcoholists have seemed to me to have pressures if anything lower than the average for their age; and this would accord with the action of alcohol as a vaso-dilator, and as a promoter in the long run of malnutrition and fatty degeneration of the myocardium. Another fact seems consistent with the view that alcohol is a depressor agent. Several patients who when chronic alcoholists had low blood-pressures, have steadily developed high pressure during the succeeding years of complete abstinence. The following is a case in point:

Case of High Blood-pressure developing after Convalescence from Chronic Alcoholism.

A country clergyman, aged 43 years, had never been an abstainer. He had steadily increased his allowance of

alcohol, and finally arrived at something over a bottle of whiskey a day—this without ever having become in the least degree intoxicated: as he said, “spirits never got into his head.” Two months before admission he had had an attack of delirium tremens lasting four days.

On admission he was rather pale, and, though fat, very flabby: he had some neuritis in the legs; and his pulse was small, soft and compressible. The pressure was not measured, but it was obviously low, certainly below 120 mm. Hg. As he improved he developed a healthy appetite, and his digestive power becoming excellent, he commenced to suffer from a series of “bilious” attacks or sick headaches: undoubtedly these were largely due to his neuritis precluding adequate physical exercise.

Nearly four years after leaving the sanatorium he called to consult me about several attacks he had recently suffered from; according to his description these were of the nature of *angina sine dolore*. He had remained an abstainer until two or three months before, since when he had taken a glass of light hock with his lunch and another with his dinner. He had put on over 2 st. in weight and had become florid. His pulse was now large, more sustained, and not very compressible: measured, the pressure was 152 mm. Hg. He was advised to restrict his diet and take more exercise; also to take calomel occasionally and iodide of potassium in 5-gr. doses thrice daily. Three months later he wrote to say he had had no further attacks, and was in excellent health generally.

Acute articular gout.—Amongst patients treated in the sanatorium recurrent articular gout has several times ceased under abstinence: this has occurred most often when the liquors abandoned have been essentially gout-producing, for example, ales, and port wine. In one case, however, articular gout, which had been frequent when the patient was a

fairly moderate beer-drinker, ceased altogether for some years during heavy whiskey drinking, but returned when the patient became a total abstainer. In this case general restriction of food, especially the total abolition of luncheon, completely succeeded in keeping him free.

CHAPTER VI

Alcoholic epilepsy and delirium tremens—Alcoholic epilepsy; cases occurring in sanatorium; cases which occurred before admission; conclusions—Delirium tremens; cases occurring in sanatorium; cases which occurred before admission; conclusions, special and general; differences in incidence between alcoholic epilepsy and delirium tremens—Alcoholic epilepsy and delirium tremens combined—Abortive treatment of delirium tremens—Some fallacies as to pathology of delirium tremens—Theories of delirium tremens—Prognosis of delirium tremens and alcoholic epilepsy—Treatment of delirium tremens and alcoholic epilepsy.

Norman Kerr, by implication, refuses to admit the possibility of alcoholic tolerance and its corollary, intolerance of sudden withdrawal. Concerning the medical treatment of inebriety, he says: "The alcohol should be at once withheld, and there should be no compromise with the patient on this point. The writer has never seen any injury resulting from this 'heroic' step. 'Tapering off' is inadmissible with alcohol."* Many medical men hold similar views.

On the other hand, the general public, including practically all inebriates and quite a number of medical men, continue to believe that the sudden withdrawal of alcohol is fraught with the danger of producing grave nervous complications. On this point I place myself, with certain reservations, on

* 'Twentieth Century Practice of Medicine,' vol. iii, p. 51.

the side of the general public and the sufferers from alcoholism.

I propose here to review briefly that part of my experience during the last six and a half years, which bears upon the proximate causation of alcoholic epilepsy, of delirium tremens, and of the two combined.

ALCOHOLIC EPILEPSY.

Since September 26th, 1905, the following cases of alcoholic epilepsy have occurred in the sanatorium :

Cases of Alcoholic Epilepsy occurring in the Sanatorium.

(1) Married woman, aged 39 years, somewhat obese, with acne indurata. A heavy drinker of stout, with some whiskey and brandy. Three days before admission her liquor was stopped by her medical attendant, with the exception of a single glass of whiskey as a nightcap. She was admitted during the forenoon. One hour later while sitting at luncheon she had a severe attack of major epilepsy. She had never so suffered before, nor has she done so since.

(2) Medical man, aged 36 years. For some months had been taking about 2 oz. of laudanum and nearly three quarters of a bottle of whiskey a day : never became intoxicated. On admission all his whiskey was suddenly stopped—this at the patient's own request and repeated insistence, and in spite of the advice tendered to continue it in moderation for a time : simultaneously his allowance of laudanum was reduced. Thirty-six hours later, while at dinner, he had a severe attack of major epilepsy, biting his tongue rather badly. This was his only attack : it was not repeated.

(3) Banker, aged 38 years. A heavy spirit drinker for last six years : rarely intoxicated, and then but slightly :

on a few occasions he had been an abstainer, but not for more than a week. He gave a history of two "fainting attacks" which might have been of an epileptic nature. The first occurred after thirty-six hours of almost total abstinence following an unusually heavy debauch: the second after fifteen hours of total abstinence following another heavy debauch. On his admission alcohol was cut off absolutely. Seventy-two hours later he had a violent major epileptic attack, biting his tongue severely.

In addition to the above three cases, in which the epileptic attacks occurred in the sanatorium, patients have been admitted who had suffered in the past, and who were able to give clear accounts of the circumstances in which the attacks occurred.

Cases of Alcoholic Epilepsy occurring before Admission into the Sanatorium.

(4) Independent gentleman, aged 49 years. A heavy spirit drinker for many years: had suffered from seven attacks of alcoholic epilepsy. On every occasion the fit had come on when, for one reason or another, he had been without, or nearly without, alcohol for from twenty-four to thirty-six hours. On admission he had been taking about a bottle of whiskey (26 fluid ounces) a day. This was reduced to 16, 12, 8, 4 and 2 fluid ounces respectively on successive days. He escaped a fit on this occasion.

(5) Independent gentleman, aged 35 years. For the last seven or eight years a heavy spirit drinker, rarely becoming intoxicated, but always taking from 8 to 25 fluid ounces of whiskey in the day. Two months before his admission he had an attack of major epilepsy. This occurred on a Sunday afternoon in Scotland, where he had arrived by train the same morning, and where he had been unable to obtain any whiskey. At the time of the fit he had been without alcohol of any kind for sixteen hours.

(6) Medical man, aged 46 years. Heavy and steady

spirit drinker for the last ten years or so. Only abstained five or six times in all, and then only for about a week at a time. He never became perceptibly intoxicated. His average consumption was a bottle or a bottle and a quarter a day. Eighteen months ago about, he had three attacks of major epilepsy, the first and second separated by a month, the second and third by about three months. Previous to each attack he had cut down his allowance of alcohol severely for from two to four days: he was, in fact, making endeavours to give up the habit.

(7) Gentleman of means, aged 44 years, had been "soaking" continuously to the extent of one bottle of whiskey a day for many months, never, however, becoming the least intoxicated. He had neuritis in both lower extremities, and absence of knee-jerks. On Saturday he raised his allowance of whiskey to one and a half bottles. On Sunday he reduced the amount to half a bottle so as not to exceed his weekly allowance of seven bottles. On Monday at 9.30 a.m. he had a severe attack of major epilepsy, biting the left side of his tongue rather badly: a second fit occurred in the evening of the same day.

(8) Clerk, aged 38 years, a moderate or moderately heavy drinker with intermittent outbreaks of drunkenness, lasting one day only. Had suffered from two epileptic fits of moderate severity. Prior to the first he had been drinking much more than usual for two days, but on the day of the fit, which happened in the forenoon, he had, contrary to custom, gone without any alcohol at all—circumstances had, in fact, precluded him from obtaining any. The second fit occurred ten months later. He had been drinking "moderately" on Thursday, Friday and Saturday—at least, on none of these days had he become intoxicated. On Sunday he abstained completely all day—he was compelled to, alcohol being inaccessible. Going for a walk in the evening, he sat down suddenly and lost consciousness for some minutes.

(9) A married woman, aged 38 years, had been a steady drinker of wine and spirits all her adult life. She had had two major epileptic attacks. The first occurred ten months ago at a flower show: whether or not she had cut down her alcohol previously is not now remembered. The second occurred one month before her admission at 8.30 a.m.: just before this attack she was noticed to be very tremulous: her husband had withheld all alcohol for forty-eight hours previously.

(10) Married woman, aged 36 years, had been for five years a steady drinker, but had always been worse—taken more—on the day before the commencement of the menstrual period. On the Sunday before her admission she had gone, quite contrary to her usual custom, all day without any kind of alcohol. In the evening, without warning, she became suddenly unconscious, falling down and injuring her head. No similar attack has since occurred.

(11) Miller, aged 27 years, had been in business for himself for last six years. During that time he had been a steady drinker, but had not become intoxicated more than once a fortnight. His usual daily allowance had been eight to ten glasses of beer, and eight, ten or even twelve nips of whiskey, the former during the morning and afternoon, the latter in the evening. Twelve days before his admission to the sanatorium he had made a sudden and serious attempt to cease drinking. While on the day previous he had consumed his usual allowance, he now succeeded in going all day with nothing but a single bottle of cider. At 9 p.m. he had a major epileptic fit during which he bit his tongue. The fit has not been repeated.

Taking the attacks which occurred in the sanatorium, and adding the attacks which occurred previously, we have in all 22 fits in 11 patients. All were undoubtedly of the variety known as alcoholic epilepsy: all the patients belonged to the class of

continuous alcoholists; and all had established a moderate or high degree of tolerance.

The conditions as regards the approximate amount of alcohol taken prior to the fit were unknown in one case. In the remainder they were known. In most of the known cases the fit occurred after periods of suddenly commencing complete abstinence varying from ten to seventy-two hours; in some, after periods of suddenly commencing *almost* complete abstinence, varying from twenty-four to ninety-six hours; and in one, after a period of twenty-four hours, during which the patient had reduced his daily allowance of whiskey to something less than half.

The incidence of alcoholic epilepsy *after*, rather than *during*, a period of drinking, though not often insisted on, would appear to have been observed. Gowers, speaking of the uncomplicated convulsions which are due to alcoholism, says that "in most cases the attacks occurred *after* each alcoholic excess."* And Wernicke states that in his clinic, "alcoholic epileptic seizures almost always occur only *on the first days following admission.*"† (The italics in both the above quotations are mine.) Obviously it is on admission that the supply of liquor is largely retrenched, if not wholly withdrawn.

DELIRIUM TREMENS.

Since September 26th, 1905, eleven cases of delirium tremens uncomplicated by alcohol epilepsy

* 'Epilepsy,' 1901, p. 22.

† Quoted by Cutten in 'Psychology of Alcoholism,' 1907, p. 249.

have occurred and been treated in the sanatorium. But in the following list three of these cases have been omitted, because in them strychnine and atropine injections of moderate size had been administered from the time of admission, and it is an open question whether the delirium which followed was not, in great part, atropine delirium, or at least delirium tremens precipitated and modified by atropine (and strychnine?). There remain, therefore, eight cases for consideration.

(1) Business man, aged 40 years. Heavy spirit drinker for some years. Took approximately same amount of alcohol every day: never abstained even for a day: rarely intoxicated. Admitted on October 2nd, 1905. Next day very tremulous and nervous. Allowed half an ounce of whiskey every four hours. Went to bed at 10 p.m., and slept until 4 a.m. on October 4th. Then he awoke in violent delirium necessitating restraint. Became rational in forty-eight hours.

(2) Business man, aged 47 years, admitted on September 5th. Had been drinking spirits to excess for many months, and heavily and continuously for three weeks: often intoxicated. Refused to take any alcohol after admission. On September 6th and 7th was fairly well, though tremulous: appetite moderately good. On September 8th he became nervous and restless during the day, and in the evening delirious. Became rational in five days.

(3) Shopkeeper, aged 56 years. Had been taking about a bottle of whiskey a day for two months. Admitted on October 9th, having suddenly stopped alcohol two days previously. Became delirious the same evening, and rational three days later.

(4) Retired man of business, aged 57 years. Had been

taking at the rate of between two and three bottles of whiskey a day for three months, and this up to the very hour of admission: often intoxicated. Admitted on April 27th. Then his allowance of whiskey was immediately reduced to six ounces a day. Two days later he became violently delirious, but recovered in three days after a hard struggle.

(5) Married woman, aged 37 years. Had been drinking heavily for some weeks, often to the extent of two bottles of whiskey a day. Admitted drunk on August 2nd, 1907. Allowance of whiskey immediately reduced to three ounces a day. Next day this was stopped. On August 5th delirium supervened, and this passed imperceptibly into symptoms of uræmia, from which she died on August 19th. There was advanced Bright's disease in this case.

(6) Shopkeeper, aged 47 years. For some months had been taking three quarters of a bottle of whiskey a day, together with several glasses of ale: never intoxicated. Admitted on November 9th, when his allowance of whiskey was straightway reduced to three ounces a day. On November 12th developed a mild form of delirium tremens, which passed off in twenty-four hours.

(7) Business man, aged 38 years. Heavy and continuous spirit drinker for some years: intoxicated but rarely: drinking up to day of admission, November 13th. On admission his allowance was reduced to six ounces of whiskey daily. Next day uncontrollable vomiting came on: he was unable to retain even small doses of champagne. On November 15th violent delirium supervened: this passed off in three days.

(8) Business man, aged 43 years. Heavy spirit drinker for some months. Never intoxicated. On the day preceding admission he had two small whiskies only: on the day of admission, April 4th, none. That night he became violently delirious, but recovered in twelve hours.

In addition to these eight cases, in which the attack

of delirium tremens occurred in the sanatorium, nine patients have been admitted who had suffered from attacks in the past, and who have been able to give clear accounts of the circumstances in which their attacks occurred.

Cases of Delirium Tremens occurring before admission into the Sanatorium.

(9) Retired army officer, aged 57 years, gave the following history. He had been a heavy spirit drinker for many years, and had suffered from seven attacks of delirium tremens. All these attacks came on when, in consequence of some slight accident or indisposition, he was unable, without giving himself away, to procure his usual allowance of alcohol. During the latter part of his army career he lived in constant dread of, and took infinite pains to avoid, being so placed. He was often intoxicated, but never more than slightly.

(10) Single man, aged 43 years, weighing over twenty stone. For many years a heavy and steady drinker of spirits, when able to afford them: at other times, of draught ale: he often became a little "fuddled," but never intoxicated. He had suffered from three attacks of delirium tremens: the first, two or three days after being suddenly cut off alcohol by the medical man who was attending him: the other two, when both cash and credit ran out, and he was unable to obtain either beer or spirits.

(11) Medical man, aged 37 years, for some years a heavy and steady drinker, usually of spirits, but sometimes of beer: never became more than a little "fuddled." Had suffered from one attack of delirium tremens, and narrowly escaped a second. The developed attack commenced three days after suddenly ceasing to take alcohol—he had been taking nearly a bottle of whiskey a day for some months. The threatened attack occurred about three days after being

cut off spirits by the medical man who was attending him : on this occasion, however, he stipulated that he was to be allowed Burgundy, and to this—of which he took about a bottle a day for some days—he ascribes his escape.

(12) Single man, aged 31 years, a heavy and steady spirit drinker who frequently became “fuddled,” but never intoxicated. Suffered from two attacks of delirium tremens. The former occurred during “abortive” double pneumonia, when he was being kept in bed and strictly allowed as regards alcohol: the latter, six weeks later, after he had re-commenced drinking, and was making a futile attempt to abstain.

(13) Married man, aged 36 years, a heavy and continuous spirit drinker, who rarely became intoxicated, but often “fuddled.” Had one attack of delirium tremens: this commenced on the third day after the onset of gastric catarrh and vomiting, which precluded the taking of either solids or liquids.

(14) Married man, aged 32 years, for years a heavy and steady spirit drinker. At first he often became intoxicated, but this had not happened for some years, although he had, if anything, increased his amount of alcohol. Had one attack of delirium tremens, the symptoms of which commenced on the fourth day after the onset of severe gastric catarrh, with constant epigastric pain and almost constant vomiting.

(15) A successful man of business, aged 44 years, had gradually in the course of years increased the number of his whiskey and sodas which he took at his club and at home, until he found that he was taking rather more than a bottle of whiskey in the twenty-four hours. The amount frightened him, although he had never been in the least intoxicated. Accordingly he suddenly made up his mind to become an abstainer, which he did on Sunday night. On Monday he was very nervous and retched all day. On Tuesday he went to business, but continued to retch at times: he was

also very restless and nervous. On Wednesday he remained at home in much the same state through the day, but became "queer in his manner" in the evening. On Thursday he was frankly delusional, recovering next day.

(16) Wine merchant, aged 31 years, brought up to take alcoholic drinks with meals : took ale at the age of nine. During last four or five years accustomed to take spirits, and had steadily but slowly increased his daily allowance : he drank to keep himself going and enable him to increase the number of his working hours, especially when overworked, as had often been the case of late years. He had never in his life shown the least signs of intoxication. He thinks the maximum amount of spirits he ever took in twenty-four hours would be under a bottle of brandy.

Last year he had several attacks of rather acute gastric catarrh with inability to retain anything on the stomach : after at least one of these attacks he suffered from a mild form of delirium tremens lasting two or three days. About a fortnight ago he suffered again from delirium tremens, lasting three days : this also followed gastric catarrh and vomiting.

(17) A retail chemist, aged 30 years, had been quite temperate until six years ago. Since then had occasionally been an abstainer for a few months at a time, but had for the most part been a moderate or moderately heavy drinker, with occasional severe outbursts of drunkenness. Has had two attacks of delirium tremens.

The first at the age of twenty-four. After many weeks of rather heavy drinking he had an outburst of drunkenness. This brought on diarrhœa and vomiting, and was followed in a few days by delirium.

The second attack occurred about six weeks before his admission into the sanatorium. For the twelve months previously he had been drinking six pints of beer, with a little whiskey, every day. He was then attacked with right-sided pleurisy, sent to bed by his medical attendant, and

cut off alcohol at once. On the fourth day he became delirious : the delirium lasted three or four days.

We may thus summarise the attacks of delirium tremens, uncomplicated by alcoholic epilepsy, in which clear histories of the conditions as regards alcohol just previously were obtainable :

Occurring in the sanatorium, 8 : occurring before admission (20 in 9 patients), 20 : total number of attacks, 28.

Concerning these 28 attacks of delirium tremens the following points may be noted :

Duration of previous drinking.—In one case (5) the previous drinking is referred to as having lasted “some weeks” : here, however, the quantity taken was unusually heavy, often reaching two bottles of whiskey in the twenty-four hours. In one other case (3) the previous drinking is stated to have lasted two months. These two cases probably mark the minimum duration of previous drinking in the series. In the remaining 26 cases the duration is stated to have been three to many months ; or it went into years.

Character of previous drinking.—Prior to all *twenty-eight attacks* the drinking was *continuous*, that is to say, excluding the two, three, or four days immediately preceding the actual commencement of delirium, there was no day on which the patient was an abstainer, or nearly so ; and in the great majority of cases the quantity taken each day was approximately the same : rarely were there any marked fluctuations in the quantity taken. Of course, the patients had not always been consuming the maximum quantity

noted. But careful inquiry showed that nearly always the daily allowance had steadily, but very slowly, increased from quite moderate amounts up to the maximum: sudden increases were quite exceptional.

The character of drinking described is obviously just that which is calculated to lead to tolerance of alcohol—that acquired condition in which large quantities of alcohol can be taken and absorbed without leading to the ordinary physiological effects of the drug. Hence, it will cause no surprise to find that many of the patients never became intoxicated, and that those who did were only slightly affected.

Of the twenty-eight cases, in only three did it happen that the previous drinking led *often* to intoxication: in these, the continuous or daily drinking was heavy, but frequently varied by paroxysms of drunkenness. In six the previous drinking had led but *rarely* to drunkenness. In seven cases the patients had *never* in their lives been in the slightest degree intoxicated: such at any rate, in spite of being heavy drinkers, cannot be termed inebriates. While in the remaining twelve, the drinking had led frequently to a quite mild grade of intoxication, commonly referred to as “slightly mixed,” or “a little muddled” or “fuddled.”

It may safely be asserted that with the exception of the three cases first mentioned, the degree of intoxication attained could never have led to the patients falling into the hands of the police.

Pre-delirious fall in quantity of circulating alcohol.—Prior to the commencement of the delirium, in all twenty-eight attacks there was a sudden and heavy fall in the quantity of alcohol circulating in the

system: this fall amounted quite often to sudden cessation as far as concerned the absorption of alcohol from the alimentary canal.

Sudden cessation occurred in thirteen cases. In eight of these all alcohol had been suddenly stopped, usually by the orders of the medical man in attendance, but in some cases at the patient's request. In five the sudden cessation of the inflow of alcohol from the digestive tract was not due to cessation of drinking, but to persistent vomiting, whether dependent or not upon gastric catarrh.

In the remaining fifteen cases the patient was supplied with, and no doubt absorbed, a little alcohol. In six of these the quantity did not exceed 6 fluid ounces in the twenty-four hours. In nine the exact amount was unknown, but the patients were probably correct in referring to it as "a very little": one of the nine was suffering from pneumonia, another from pleurisy.

Duration of "incubation period."—The interval between the sudden fall in the quantity or stoppage of alcohol and the commencement of the delirium may be termed the incubation period. The approximately exact duration of this period was known in thirteen cases. In one only was it as short as forty hours: in the other twelve it varied between fifty-six and seventy-two hours: in more than half it was quite seventy hours.

In the remaining fifteen cases the exact duration of the incubation period had been forgotten, but the patients for the most part referred to it as two or three, or three or four, days.

It seems probable that the incubation period repre-

sents roughly the time required for the alcohol to escape from the system.

General conclusion.—I am quite unable to see how the preceding facts can have any interpretation other than that both alcoholic epilepsy and delirium tremens depend, primarily and remotely, upon the acquisition of tolerance of alcohol, and secondarily and proximately upon a sudden fall in the accustomed quantity of alcohol circulating in the system, that is, of course, in the brain and nervous system generally. All the facts without exception are consistent with this view: they are not consistent with any other: above all they are inconsistent with the view held by Norman Kerr and others, that the two complications are due to the *direct* toxic action of alcohol.

I am well aware that these conclusions are not at present accepted by the entire medical profession in this country: many still believe that alcohol may be suddenly withheld with safety even from the most chronic of alcoholists. Bearing on this point an article has quite recently been published by Ranson and Scott in America.* The article is important in that it is based on the study of 1106 cases of delirium tremens, 934 of which occurred in the Cork County Hospital, Chicago, and 172 in the Massachusetts General Hospital, and because the conclusions drawn are definite. The writers state, "As to alcohol, evidence goes to show that while the question of its administration in the second stage (the stage of fully declared delirium) is one still open to discussion, and by no means as yet settled against its use, it should

* 'Amer. Journ. of Med. Sci.,' May, 1911, p. 673, and epitomised in the 'Brit. Med. Journ.,' September 30th, 1911—"Epitome," p. 45.

never be withdrawn from incipient cases (that is, cases referred to in this work as exhibiting premonitory symptoms), as such withdrawal greatly increases the chances of an incipient case becoming delirious."

DIFFERENCES IN INCIDENCE BETWEEN ALCOHOLIC EPILEPSY AND DELIRIUM TREMENS.

Although both are abstinence phenomena, yet alcoholic epilepsy differs in its incidence from delirium tremens in certain important respects.

(1) It does not, like delirium tremens, occur *exclusively* in those who have acquired a *high* grade of alcoholic tolerance: it occurs *occasionally* after a comparatively short outbreak of drinking in one who was previously a more or less moderate drinker, and who consequently is in little danger of an attack of delirium. Such cases are, however, exceptional, and it remains true that fits are far more likely to occur in those who have acquired high tolerance than in others.

(2) It is apt to occur much sooner than is delirium tremens, after the cessation, or reduction of alcohol: for example, it may occur on the first day of abstinence (ten hours was the minimum) whereas delirium tremens rarely occurs before the third day; and is often further delayed. Hence it not infrequently happens that one or more fits herald, and precede by two or three days, the onset of an attack of delirium tremens.

(3) Much less frequently than is the case with delirium tremens is alcoholic epilepsy preceded by tremor, insomnia, fear, and other nervous symptoms. This in all probability depends upon its relatively

earlier incidence after abstention : the more ordinary nervous symptoms have not had time to develop.

(4) When alcoholic epilepsy is associated with marked muscular tremor, insomnia, and other nervous symptoms such as seemingly causeless fear, it is highly probable that an attack of delirium tremens is impending, and that the fit or fits are preliminary symptoms.

ALCOHOLIC EPILEPSY AND DELIRIUM TREMENS COMBINED.

The association of alcoholic epilepsy with delirium tremens is well known. The following three cases have come under my notice since my connection with the Norwood Sanatorium.

(1) Engineer, aged 37 years, a heavy spirit drinker, had been confined to bed under medical advice for three days before admission. During this time his allowance of alcohol had been almost but not quite cut off. On his journey to the sanatorium, while in the train, he had a severe attack of major epilepsy. On admission on November 26th he was semi-comatose, with highly albuminous urine, his skin intensely cold, his radial arteries tightly constricted. He was immediately ordered to bed. Two hours after admission he had a second epileptic (major) attack. On his recovery it was evident that he was in delirium tremens. The delirium typical of delirium tremens passed off during November 30th, but he remained demented for a week. The albuminuria proved to be evanescent.

(2) Journalist, aged 36 years, seen in consultation. Patient had been a heavy and continuous spirit drinker for some years. On June 15th, on having made up his mind that he must reform his habits, he cut down his daily allowance of spirit by about three quarters. On June 17th,

in the evening at his club, he had an attack of major epilepsy. On June 18th he entered a nursing home, and all alcohol was withheld. The following two days were passed entirely without sleep. On June 21st he became delirious and remained so until the 23rd, when natural sleep supervened.

(3) Gentleman, aged 37 years, entered the sanatorium on April 28th. Although he had been for years a steady spirit drinker, latterly to the extent of about a bottle of whiskey a day, he had never in his life been intoxicated. So complete was his tolerance of alcohol that his wife had not until recently suspected that he was other than quite a moderate drinker. Yet there seems no doubt that he had already suffered from two attacks of delirium tremens. The circumstances in which these previous attacks arose are highly instructive. The first followed an injury. He was thrown out of a cab and had very slight concussion. He was kept in bed, alcohol being strictly prohibited on account of the danger of "inflammation of the brain." Within two days he was delirious, and went through what, judging from his wife's description, was a typical attack of delirium tremens. His symptoms were, however, ascribed to the head injury by his physician, who was, of course, unaware of the extent of his drinking habits. The second attack occurred five months later. He had accepted an invitation to a rather important social function, and had ceased taking alcohol for a day before. During a dance he became faint and giddy, and had to be taken to bed, where he was kept next day. Bearing in mind his previous attack of brain symptoms, his physician again interdicted all alcohol. In the course of a day or so he again fell into a delirious condition, which pursued a course similar to that of his previous attack. On this occasion the delirium was ascribed to the excitement of the social function acting on a brain already damaged traumatically in some obscure way. There can be little doubt that on both occasions the delirium resulted directly

from the withdrawal of alcohol. He now began himself to suspect that alcohol was the primary factor of his attacks, and determined to seek special treatment. He made up his mind to enter the sanatorium, but anticipating and dreading that on admission he would be cut off from all alcohol at once, he reduced his allowance for two days previously to about a fourth of what he had been accustomed to take.* He was admitted in the evening and went to bed soon after. At my visit (10.30 p.m.) he was asleep and I hesitated to wake him in order to give him alcohol. Next day, however, it appeared that he had slept for one hour only, and although he had some whiskey with him, he refrained from taking any throughout the night, acting, of course, on the best of motives. He was now intensely tremulous, being quite unable to stand or feed himself: his tremors on voluntary movement were truly convulsive. I should in this emergency have administered very large doses of alcohol: unfortunately, vomiting had set in, and alcohol failed to remain for more than a few minutes in his stomach. He rapidly became worse. In the evening he had a severe epileptic fit, and this was repeated twice during the night. Next morning he was obviously in delirium tremens. This was prolonged and severe. Only after nine days was there some return to consciousness, and the termination of the attack was by slow lysis, not, as is the rule, by crisis. On the seventh and eighth days of the delirium there was marked circulatory failure, which seemed to render the result extremely doubtful. Hyoscine in doses of $\frac{1}{100}$ gr. repeated every six hours gave an hour or two of restless sleep, but seemingly made no difference in the duration of the attack.

The course pursued by the albuminuria in this case was interesting. The marked rise in the percentage which succeeded the onset of vomiting, and the consequent absence

* This it may be mentioned was a much heavier reduction than would have been made had the patient been in the sanatorium at the time.

of alcohol from the system, was especially well marked. On admission, and on the first day of delirium, there was 8 per cent. albumen : on the second day, 40 per cent. : third, 30 per cent. : fourth and fifth, 15 per cent. : sixth and seventh, 10 per cent. : eighth, 4 per cent. : ninth, the day on which the delirium ceased, 3 per cent. : on the next two days, 7 per cent. and 5 per cent. respectively : and on the following day (the twelfth from the onset of delirium) the urine became clear of all albumen, remaining so thenceforward. No casts were discoverable at any time throughout the attack.

The above three cases illustrate all the points already made as regards the causation, remote and proximate, of alcoholic epilepsy and delirium tremens. In all three the patients were continuous heavy drinkers (two were chronic inebriates and one a chronic sober alcoholic), and in all three there was a sudden and heavy retrenchment in the daily allowance of alcohol. The first effect in all was alcoholic epilepsy : the second, typical and severe delirium tremens.

THE ABORTIVE TREATMENT OF DELIRIUM TREMENS.

Further, and to my mind, conclusive evidence that the proximate factor of delirium tremens consists in a too sudden withdrawal of alcohol from the system, is obtained from occasional cases in which it has been found possible to abort completely by means of prompt and adequate doses of alcohol an attack which, though still in an early stage, has actually commenced. Two such cases have occurred in the sanatorium.

(1) An Army officer, retired on a small pension, had been living for the last year or so in a nursing home. He was crippled with peripheral neuritis, and had not been out of

doors for twelve months. He was obese and had granular kidneys. His only occupations were reading and whiskey drinking. For years he had taken exactly six bottles a week, the amount being chiefly determined by the amount of his pension. He had never been intoxicated.

Before entering the sanatorium, which he did in the forenoon, he had taken about 5 ozs. of whiskey. Thereafter he took no more for several hours. At 5 p.m., having had no alcohol since his admission, he became restless and his expression altered : his attention wandered and his eyes had a frightened look. At 6 p.m., after being put to bed, he was brushing imaginary insects from his face. From 6 to 10.30 p.m. he was given whiskey to the extent of 16 or 17 fluid ounces : this brought up his intake for the day to its usual level. At 10 p.m. he was decidedly better. At 10.30 he went to sleep, and had an excellent night, waking in the morning in his usual condition. The further course of the case was simple. His whiskey was cautiously tapered off in seven days without the occurrence of any further disquieting symptoms. In this case the patient's health was so broken down that a severe attack of delirium tremens might easily have proved fatal.

(2) Tradesman, aged 36 years, had for ten years taken about a bottle of whiskey daily with some beer. He frequently got intoxicated, but only slightly so. On admission he was sober, but had taken nearly his usual allowance. On the succeeding four days he was given 10 oz., 7 oz., 5 oz. and 4 oz. respectively. On the night of the fourth day he slept badly for the first time since his admission. On the following morning he was quite delusional. His allowance was promptly raised to 10 oz., and more than half of this was given at once. He had much sleep during the day and succeeding night, and woke the following morning quite rational. He was "tapered off" during the next three days without further trouble.

This subject is again referred to (p. 174).

SOME FALLACIES REGARDING THE PATHOLOGY OF
DELIRIUM TREMENS.

Reference has already been made to Norman Kerr's view that delirium tremens is the direct result of alcoholic poisoning ; and it has been shown in refutation that at the onset of the disorder there is always less alcohol in the system than the quantity to which the patient has been long accustomed. Often, indeed, the system must be quite empty of alcohol at the time.

Rolleston says it was formerly supposed that delirium tremens was due to an interruption in the course of alcoholic stimulation. He regards this view as now exploded, and states that "the attack indeed is often brought on by a bout of harder drinking than usual. *

No doubt this fact is true—I know of several examples myself. But it is susceptible of more than one alternative explanation. A chronic alcoholic who had rarely been intoxicated, and then only when away from home and business surroundings, got very drunk and "gave himself away" badly in extremely awkward circumstances. So disgusted with himself and remorseful was he that he straightway determined to become an abstainer. He carried out his intention to the letter, but was attacked by delirium tremens about the fourth day subsequently. Another patient, also a chronic alcoholic, normally kept strictly within the bounds of sobriety, but at a special banquet exceeded largely. As a result he developed acute gastric catarrh, with uncontrollable

* Allbutt's 'System of Medicine,' vol. ii, Part I, p. 930.

vomiting, so that even small doses of champagne were rejected: this was followed by a sharp attack of delirium tremens. In other cases a drinking bout heavier than usual has succeeded in persuading the patient to submit to medical treatment, which in the majority of cases implies sudden withdrawal of alcohol, the probable result being the same. In all such cases—which are common—it is true that the attack of delirium tremens is brought about by “a bout of harder drinking than usual”; but this serves to establish, not to upset, my thesis.

Many argue that delirium tremens cannot be due to cutting off of alcohol, because patients often “drink themselves into delirium tremens.” Here it will nearly always be found that the patients drink themselves into gastric catarrh, or some other variety of digestive revolt; and that the consequent failure of absorption of alcohol is the immediate cause of the delirium.

Again it is argued that many patients already under careful medical supervision and treatment develop delirium tremens in spite of the fact that their alcohol has been “tapered off,” not suddenly withdrawn. This also is true, and it brings up a very important practical point, namely, the essential principles of successful tapering. This subject will be fully dealt with in the chapter on treatment. Meanwhile, it is enough to point out that tapering, as commonly practised, is almost entirely futile. The initial reduction instituted is practically always far too heavy (*vide* p. 164). I have the less hesitation in speaking dogmatically on this point, in that I fell into, and continued for some time, this error myself.

How do the views of causation here advocated

square with the known phenomena of what is spoken of as "traumatic delirium tremens"—that variety of the affection which is prone to arise after accidents and surgical operations—and the delirium tremens which occasionally complicates acute specific diseases, especially pneumonia? Ordinarily it is assumed with little hesitation that the delirium is determined by the *shock* of the accident or operation, or by some nervous condition analogous to shock in the pyrexial affections, and it may be freely admitted that it is impossible absolutely to exclude the operation of such factors. But is there any necessity for importing their operation into the causation at all? It is certain that in practically all these cases sudden retrenchment or withdrawal is practised concurrently, and many considerations point to the latter as the sole determining factor. For example, delirium may follow quite trivial injuries from which the element of shock is absent. There is no constant relation between the incidence of delirium and the severity of the accident. There is, on the other hand, a very constant relation between the incidence of the delirium and both (a) the severity and duration of the antecedent alcoholism, and (b) the suddenness of withdrawal. Again, there is the significant fact that the onset of delirium is never immediately after the accident, when the influence of shock might be supposed to be at its height, but *two or three days subsequently*: there is, that is to say, the same "incubation period" which is observed when delirium follows the sudden retrenchment or withdrawal of alcohol in the medical treatment of the chronic alcoholic or inebriate who has met with no injury at all.

On reflection there appears to be no room left for the factor of shock.

The argument is applicable equally to traumatic and pneumonic cases. For it will not be disputed that in neither of the emergencies referred to is it usual to allow anything approaching the chronic alcoholic's every-day allowance of alcohol from the time of the accident or operation on the one hand, or from the onset of the initial rigor on the other. At least I can speak from my own experience. I have passed some twelve years *in residence* at general hospitals of some size, and during that time have necessarily had under my care a goodly number of cases in which delirium tremens has supervened in cases of accident, operation, pneumonia, and other acute affections. But I am sure that rarely, if ever, have I ordered in any such case more than 8 or 10 fluid ounces of whiskey or brandy in the twenty-four hours. In so acting I followed the ordinary practice of the profession, and felt comfortably assured that, as regards alcohol, I was dealing with the patient generously rather than otherwise.

And yet, what is the value of such an amount to a patient who, quite probably, has been absorbing for years with comfort and without exhibiting any of the physiological signs of alcoholism 25 or 30 fluid ounces of spirits in every twenty-four hours? It certainly could not be contended even then that there had not been a large and sudden retrenchment of alcohol in case. And this, as I have here argued, is all that is necessary to precipitate delirium tremens in many cases.

It is stated that delirium tremens arises at times

in the moderate drinker (F. H. Pritchard,* H. J. Berkley,† Rolleston,‡ Maudsley)§; and occasionally cases have been published in which it is claimed that the patient was a total abstainer. I have no knowledge of delirium tremens occurring in total abstainers from alcohol and other narcotic drugs. As regards moderate drinkers, it is obvious that "moderate" is a term which is variously interpreted. An exceedingly common definition of a moderate drinker is one who rarely or never becomes intoxicated. And since many sober alcoholists habitually consume upwards of a bottle of spirits a day, they may well suffer from time to time from delirium tremens. As I have endeavoured to show, it is just such alcoholists who are most prone to suffer. The fact is that secret drinking—or rather, drinking, the real extent of which is secret—is exceedingly common. The patient in Case 3 (p. 157), who developed alcoholic epilepsy and severe delirium tremens in the sanatorium, and who had previously suffered from two attacks of the latter affection, was for years a secret drinker—so secret indeed that even his wife regarded him as strictly moderate; and there can be no doubt that similar cases frequently occur. In any case, however, it is certain that the necessity for secrecy determines the exact kind of drinking that is best calculated to establish tolerance of alcohol, the which, it has been argued, is the primary or fundamental factor of delirium tremens in all cases.

* 'Quart. Journ. Inebriety,' vol. xxii, p. 408.

† 'Mental Diseases,' pp. 259 and 262.

‡ Allbutt's 'System of Medicine,' vol. iii, p. 867.

§ 'Pathology of Mind,' p. 485.

THEORIES OF DELIRIUM TREMENS.

Many theories of delirium tremens have been advanced. That of Norman Kerr—that delirium tremens is simply an alcoholic toxæmia—has already been referred to. Ford Robertson suggests that delirium tremens results from some secondary acute toxæmia which is probably bacterial and originates in the intestinal tract. Liepmann thinks there is a more or less constant relation between the albuminuria and the delirium: when the delirium is intense, the albuminuria appears: as it recedes, the albuminuria disappears. I once thought this myself, but increased experience has shown that the inter-relation is by no means constant. It is admitted that albuminuria is common in delirium tremens. Thus Fürstner found it in 40 per cent.: Näcke in 82 per cent.; Liepmann in 76 per cent. or in 56 cases, in 40 of which it was transient, in 16 permanent while under observation: of the latter, 7 proved fatal and the autopsy showed nephritis. In all the cases of delirium tremens treated in the Norwood Sanatorium there has been albuminuria, which, no matter how marked, was usually transient.

The common concurrence of albuminuria has suggested the view that delirium tremens is usually connected with acute nephritis, and that the toxic basis of the delirium is uræmic—due, namely, to deficient renal elimination.* Undoubtedly uræmia may occur in delirium tremens: it was the cause of death in the only fatal case which occurred in the sanatorium (Case 5, p. 147). But in the great majority

* F. H. Pritchard, 'Quarterly Journal of Inebriety,' vol. xxii, p. 480.

of cases there is certainly no nephritis, since the albumen disappears from the urine completely and often quite suddenly towards the end of, or more frequently a day or two after, the delirious period.

There is a weak point in all these theories which seek to throw the blame for the delirium tremens mainly on the renal organs. Those who have advanced them lay stress upon the frequency of albuminuria in delirium tremens. But they seem to have worked and argued without a control series showing the frequency of albuminuria in chronic alcoholists who have entirely escaped delirium tremens. Now the fact is (as already stated, p. 102), that albuminuria is practically just as common, if not on the average quite so severe, in the latter.

It is the chronic alcoholist who suffers from delirium tremens, and it is the chronic alcoholist who shows albuminuria. Other things being equal, the longer and more severe the alcoholism, the more the albuminuria; also, the longer and more severe the alcoholism, the greater the liability to delirium tremens. Hence it is easy to see why patients with delirium tremens should on the average show more albuminuria than those who escape this complication. But there is nothing to show that the condition of the kidney which permits of albuminuria is in any way responsible for the attack of delirium tremens. Both depend upon a common cause: they are not necessarily inter-related as cause and effect.

There is one theory, however, which though at present insusceptible of direct proof, strongly appeals to me in that it fits, without strain, all the known acts of chronic alcoholism and its complications,

alcoholic epilepsy and delirium tremens. That is the theory of *Professor Jauregg*. In a paper read at the eighth International Congress at Vienna in 1901, Professor Jauregg elaborated the theory that the immediately responsible toxic substance is generated by alcohol, and is indeed an "anti-alcohol."* This view is strictly analogous to one which has been formulated to explain the abstinence phenomena of morphinism, but which is now stated to have been disproved† (W. E. Dixon), I know not on what grounds. It is really only a hypothesis, but it cannot be disputed that it is more widely consistent with the facts than any other. By it we can explain :

(1) *The acquisition of tolerance*—the steadily increasing capacity to ingest and absorb large quantities of alcohol without showing symptoms of intoxication or even experiencing much alcoholic euphoria. Just as the frequent injection of small and increasing doses of diphtheria toxin into a horse results in the formation of increasing quantities of diphtheria anti-toxin, so, it may be supposed, the frequent ingestion of small and increasing doses of alcohol results in the formation of increasing quantities of alcohol anti-toxin, or anti-alcohol. In both instances the anti-toxin formed succeeds eventually in antagonising the parent toxin.

(2) *The inability of the chronic alcoholic to do without alcohol* (p. 81).—This requires little insistence. According to Jauregg's theory, it depends upon the anti-alcohol in the system. The chronic alcoholic is

* Cutten's 'Psychology of Alcoholism,' 1907, p. 249.

† 'Practitioner,' 1907, p. 643 *et seq.*

suffering from two more or less mutually antagonising poisons; and he approximates most closely to a normal condition when the two are most accurately balanced.

(3) *The loss of tolerance after a period of abstinence*—This has already been referred to and exemplified (p. 124). Under Jauregg's theory, it is, of course, accounted for by the absence of anti-alcohol, which, with the complete cessation of the alcoholic intake, ceases to be formed, and becomes quickly—probably in the course of a few days—eliminated.

(4) *The characteristic phenomena of alcoholic insomnia* (p. 119).—By common consent alcohol is a narcotic. The hypothetical substance "anti-alcohol" must be, of course, an anti-narcotic. As it becomes formed in increasing quantities, increasing doses of alcohol are required to neutralise its physiological action.

(5) *The special—if not exclusive—proneness of delirium tremens to occur in those who have established a high grade of tolerance of alcohol*.—It would, of course, be in such patients that the largest amount of "anti-alcohol" would have been formed in the system.

(6) *The onset of delirium tremens after a definite interval following the sudden retrenchment or withdrawal of alcohol*.—As the amount of narcotic alcohol in the system progressively falls, the anti-narcotic anti-alcohol becomes less and less neutralised, and consequently exerts more and more pathological influence. During the incubation stage of delirium tremens increasing insomnia is the general rule. Finally the onset of the actual delirium coincides pretty accurately with the time when the system would have been practically cleared of alcohol.

(7) *The symptoms and course of delirium tremens*.—

When we refrain from masking them by alcohol or other narcotic drug, the symptoms peculiar to delirium tremens seem highly suggestive of poisoning by a substance having an action diametrically opposed in most respects to that of alcohol. There is, of course, disordered cerebration in both delirium tremens and alcoholic intoxication. But there the resemblance ends. In intoxication there is euphoria: in delirium tremens extreme misery. Intoxication renders the coward rash, if not courageous: delirium tremens turns the brave man into a poltroon for the time being. He *may* commit violent assaults, but such are always dictated by terror.

Again, the greater the degree of intoxication, the greater the tendency to narcotism or coma: the opposite is true of delirium tremens. Indeed, in this disorder the resistance to narcotics would seem to reach its climax. Hypnotic drugs, to be efficient, have to be given in doses which are little short of dangerous (Norman Kerr).

The course and termination of the disorder are again suggestive of poisoning by an anti-narcotic substance. Left to itself, delirium tremens runs a course of fairly definite duration, and almost invariably ends by the crisis of sleep. On the other hand, there seems to be no doubt that we may greatly modify the violence of the delirium by the giving of alcohol, but at the same time we defer the crisis, and so prolong the duration of the disease. This is, of course, exactly what we should anticipate on the preferred hypothesis. The duration of the attack is concurrent with the elimination from the system of the anti-

alcohol. Roughly this is equal to the duration of the incubation period. Therefore, assuming the truth of Jauregg's theory, the time required for the elimination of the alcohol would be about equal to that required for the elimination of the anti-alcohol.

PROGNOSIS IN DELIRIUM TREMENS AND ALCOHOLIC EPILEPSY.

Nothing in connection with the cases of delirium tremens which have occurred in the sanatorium seems to suggest any new ideas as to the prognosis of the complication. The great majority of cases treated without alcohol or large doses of hypnotic drugs ran a natural course, and ended by crisis in prolonged sleep within four days from the commencement of the delirium. The presence of albumen in great quantity is doubtless an index of severity, and so, too, is a more than quite moderately raised temperature (*e. g.* 100° F.). The state of the heart and circulation is, of course, the chief prognostic feature; and prolongation of the attack beyond four days is certainly serious whether as regards the danger of death, or of prolonged mental alienation.

As regards alcoholic epilepsy, it seems to be undecided whether or not this complication ever leads to ordinary recurrent epilepsy; at least, I have several times been consulted on this point, not only by patients and their friends, but by their medical attendants. Now it is obvious that alcoholism may lead to alcoholic epilepsy in one who has a strong inherent tendency to essential or "idiopathic" epilepsy; and it is conceivable that in such a case alcoholism might

determine the epileptic habit. A few patients suffering from essential epilepsy have been admitted for alcoholism, but in all these the epileptic affection had preceded,—in some it had seemed to determine—the alcoholism. In no case has alcoholic epilepsy led to subsequent fits except when the original causative condition has been reproduced. But the evidence does seem to show that when once alcoholic epilepsy has arisen, there is an increased tendency for the same complication to occur at subsequent relapses into alcoholism. I have felt justified, therefore, in promising these patients future immunity from epileptic attacks, always provided they remain total abstainers.

On reviewing the cases of alcoholic epilepsy above detailed, it seems almost a pity to use the term “epilepsy” at all. Certainly the fits are for the most part indistinguishable from ordinary attacks of major epilepsy, except as regards the circumstances in which they arise. But these circumstances are distinctive. Moreover they seem to suggest that the fits are analogous, not to the fits of “idiopathic” or essential epilepsy, but rather to the convulsions which, especially in children, are apt to take the place of the initial rigor and usher in an attack of pneumonia or any of the acute specific fevers—to which convulsions the term “epilepsy” has never been applied.

TREATMENT OF DELIRIUM TREMENS AND ALCOHOLIC EPILEPSY.

The treatment of delirium tremens may be considered under three heads: (1) preventive treatment,

(2) abortive treatment ; and (3) treatment during the attack.

The preventive treatment has been already indicated. It consists in the main in the careful tapering of the patient's alcohol downwards from the amount of acquired tolerance: the danger of any sudden large fall in the quantity during the first two or three days must be kept in mind (p. 214). Bromide of sodium in drachm doses may be given thrice daily ; and it is usually expedient for the first few nights to administer one of the ordinary hypnotics, such as veronal or paraldehyde. In these circumstances (*i. e.* when careful tapering is carried out) the *ordinary full* dose of any of the hypnotic drugs is always sufficient. The results of such systematic preventive treatment can be clearly shown statistically.

From September, 1905, to April, 1909, a period of three and a half years, neither the importance nor the special method of tapering was fully understood. During this period there arose in the sanatorium eight cases of delirium tremens, or counting the three doubtful cases which might have been solely or mainly due to strychnine and atropine, eleven cases.

From April, 1909, to September, 1911, a period of two and a half years, all patients who had established high tolerance to alcohol and who were still drinking hard on admission were carefully tapered off according to the principles laid down (p. 213). During this period, which *included a distinctly larger number of admissions*, there occurred in the sanatorium but one case of delirium tremens ; and this case undoubtedly arose through a misconception, being clearly due, as were those cases which occurred in the first period, to

a sudden fall in the amount of circulating alcohol. This case has been described in detail (Case 3, p. 157).

It has been claimed that even in heavy continuous spirit drinkers the alcohol may be suddenly withheld without danger, provided that an adequate dose of an hypnotic drug, such as chloral, is given to insure sleep. Possibly this is true. But the dose which is adequate under those conditions is so large that for my own part I lack the courage to prescribe it.

The abortive treatment also has been indicated and illustrated by two successful cases (p. 159). For its success two conditions are indispensable. The attack must be in the earliest stage, the mental symptoms having only just started; and the doses of alcohol must be adequate—the allowance of this drug must quickly be brought up to very nearly, if not quite, the amount of acquired tolerance. Anything short of this will fail and result only in prolongation of the attack of delirium.

Occasionally delirium tremens in the earliest stage may be aborted by *large* doses of other narcotic drugs: half a grain of morphine hypodermically was successful in one case. But this plan has frequently failed, and it is obvious that there is an added and avoidable danger in prescribing very large doses of narcotics to which the patient is unaccustomed.

Chloroform anæsthesia has been suggested as a means of aborting delirium tremens. In one case (brought into the general hospital with which I was at the time connected) there was a fracture of the upper third of the left femur. This was put up in the ordinary way with extension. But the patient was violent and tore off his bandages. Accord-

ingly he was put under chloroform and the whole lower extremity and most of the trunk encased in plaster. For this it was necessary to prolong the anæsthesia for more than an hour. The chloroform unconsciousness passed into natural sleep which endured for some eight or ten hours, and on awaking the patient was entirely rational, remaining so thenceforward.

So impressed by the result was one of the medical men who assisted in this case, that on being called shortly afterwards to attend a patient suffering from uncomplicated delirium tremens, he used chloroform anæsthesia as a means of treatment. The effect was disastrous, however, the patient after a very few inhalations dying of respiratory failure. It is but fair to add that in this case the patient was old, drink-sodden, and permanently diseased beyond the average.

Regarding the general management of the actual stage of delirium, I have little to add to what may be found in any text-book. The great majority of cases occurring in establishments set apart for alcoholism and other drug habits are uncomplicated, and if merely protected from injury, accidental and other, pursue a favourable course of three or four days towards the natural crisis of prolonged sleep and rapid convalescence. In such, therefore, when once the chance of cutting short the attack be passed, it suffices to provide adequate skilled attendants (two at least are always required) who must be instructed not to allow the patient out of sight for an instant, and to see that some fluid nourishment is administered from time to time.

But it may happen that (*a*) the delirium is prolonged; (*b*) the temperature is considerably raised— 101° F. or more; or (*c*) there are signs of circulatory failure. In all such cases it seems essential that sleep should be procured. For this purpose, apomorphine, as already stated, has hitherto proved useless in my hands, nor have I had much success with any of the ordinary hypnotics, except perhaps hyoscine. The last seems, at present, the most efficient drug in the circumstances. Beginning tentatively with $\frac{1}{150}$ gr., I have given up to $\frac{1}{80}$ gr. every six hours for some days. The usual result is to give the patient an hour or two of rather disturbed sleep after each injection. But there is no evidence that by this means the duration of the delirium is abbreviated.

While there is no doubt that alcohol carefully and adequately given almost invariably prevents, and in certain circumstances may abort, delirium tremens, it is at present doubtful whether the drug is of any real use when once delirium is definitely established—whether, indeed, it is not often injurious. Those who have largely used it hold that it modifies the severity but prolongs the duration of the delirium. And my own experience tends to confirm this view.

The preventive and abortive treatments described have, as just stated, been so successful that during the last three years but one case of delirium tremens has arisen in the sanatorium. But there is at any rate one complicating symptom which at present will doubtless operate to prevent such freedom from continuing. I refer to gastric catarrh associated with

uncontrollable vomiting, which effectually precludes due absorption of alcohol from the stomach and upper part of the alimentary canal. In this emergency it has been suggested to give alcohol *per rectum* or hypodermically. But by neither route could an adequate amount be given. There remains the possibility of administration by inhalation. Hitherto I have had no chance of testing this method. But I should certainly not hesitate to do so in the future whenever the opportunity offered.

There is no special treatment for alcoholic epilepsy. Like delirium tremens, its prevention depends upon careful tapering. But preventive treatment is, if anything, less successful in the case of epilepsy, since the warning signs of an attack are much less clear (even when they exist), and the incubation period is often much shorter. When alcoholic epilepsy is a mere symptom of delirium tremens, its treatment, of course, is the same as that of the major disorder. Probably in all cases the majority of physicians would administer bromides in some form. But there is nothing to show that these drugs have any material influence on the disorder; and commonly they are quite unnecessary.

CHAPTER VII

Treatment—Compulsion and Moral Tone—Voluntary restrictions—
Policy in a Free Sanatorium—Diet—Tobacco.

A MEDICAL pioneer whose work has been accepted exercises an abiding influence on the profession ; and this applies to some of his expressed views which have not fully stood the test of time. The late Dr. Norman Kerr is a case in point. No one will dispute his sincerity, or the deserved and commanding position to which he attained in the clinical study of alcoholism. But that some of his conclusions were premature there can be no doubt. For example, the student of his works may be forgiven if he draws the conclusion that, for practically all cases of alcoholism, twelve months' confinement in a retreat where alcohol is inaccessible is the only course likely to be of any real and lasting benefit ;* and it is certain that many medical men continue to hold this opinion at

* "In very few cases should a shorter term than twelve months be recommended. In many cases a term of eighteen months to two years is indicated. In very confirmed cases three or more years are required, while some inebriates need seclusion for much longer periods. . . . In a few cases a period of nine months, or even six months, may be freely suggested. In no case have I ever seen my way to recommend a shorter term than six months. If the circumstances do not warrant more than three months this term can be sanctioned, as a matter of necessity, not of choice."—'Inebriety or Narcomania,' by Norman Kerr, 1894, p. 394.

the present time. No doubt there are patients who require such prolonged seclusion; and it is probable that the number was relatively greater when Dr. Norman Kerr wrote: alcoholism was then only beginning to be regarded as a province of medicine. But at the present time such patients are in a minority—a minority which will become progressively smaller. For with the diffusion of knowledge, alcoholists are applying for medical advice in a stage of their morbid habit which tends to become earlier every year.

Two convictions of the medical profession have done much to throw the management of alcoholism and inebriety into the hands of unqualified and unregistered practitioners: (1) that nothing but prolonged enforced seclusion is of any value; and (2) that it is essential in all cases to insist upon sudden and complete withdrawal of alcohol.

The former simply operates to exclude the great majority of those who are in need of treatment. Quite apart from the question of expediency, the conditions offered are usually impossible, always unacceptable. The patient is often the bread-winner of the family, and a year's absence from his post means ruin: it is, in fact, only those who are independent, or who, on the other hand, are permanently dependent on relatives or friends, who can comply with such conditions. To recommend the ordinary alcoholist to retire into a retreat for a prolonged period is about as reasonable as to prescribe a yachting trip for a pauper.

The practice of uncompromising, sudden, and complete withdrawal of alcohol in *all* cases is un-

necessary, impolitic and injurious to the best interests of both patients and the profession. Whether alcoholism is properly regarded as a disease is still an open question; but that it conforms to one, at least, of the canons which govern disease in general there is no doubt. Other things being equal, alcoholism is remediable inversely as its duration: hence every impediment, real or fanciful, in the way of early treatment should be removed. The chief impediment—compared to which all others sink into insignificance—is the terror of sudden withdrawal. In severe cases, the chronic alcoholic (like the chronic morphinist) lives in constant terror of finding himself so placed as to be unable to procure his accustomed narcotic in adequate amount, feeling assured that in such circumstances he would be more than threatened with some grave nervous complication. How many times has the remark been addressed to me—“Had I known you would not have cut me off suddenly I would have come to you years ago”? And the manifest relief of patients when they find that they are going to be “let down lightly” is at times almost pathetic. Personally, I have no doubt that sudden withdrawal is in some cases often a dangerous proceeding. That, however, is a contentious question which need not again be raised. What I wish to emphasise here is the *gross inexpediency* of the practice. By insisting on it in all cases, the superintendent of a “free” sanatorium would inevitably lose many of his most promising patients.

The Norwood Sanatorium may be regarded as the outcome of the recognition on the part of the medical profession that the licensed retreats, excellently

managed as many of them undoubtedly are, do not meet all the requirements of a very large class—in my view the large majority—of alcoholists. Few can afford the time for prolonged seclusion. Fewer still can be prevailed upon to sign away their liberty under the Act. It may be urged that licensed retreats are not precluded from accepting patients for short periods, whether under the Act or otherwise, and that, in fact, many of the patients in these institutions are so admitted. But there are objections—objections endorsed by the Inspector under the Inebriates Act*—to the mixing in the one institution of long and short term patients; and these objections are especially applicable where some are under the Act—and may be, in reality, serving a term of imprisonment for drunkenness—and others are voluntary patients.

COMPULSION AND MORAL TONE.

In an inebriate retreat in which the majority (or even some) of the patients are remaining through legal compulsion, it is impossible to secure the same moral atmosphere as in a sanatorium where all have entered voluntarily, and where all are free to leave at a moment's notice. In the former there are nearly always some who have given up trying, and who know that most of the remainder of their lives will be spent under supervision of some sort: in the latter all are at any rate hoping for, if not confidently expecting, more or less permanent relief. The difference between the two kinds of institution does

* Report for the year 1902, p. 15.

not depend upon the personnel of the staff in either : it results naturally from the conditions under which the patients are admitted and remain. You cannot employ compulsion, and at the same time be sure of securing the full and hearty co-operation of the compelled in the treatment and management. Sooner or later compulsion breeds the school-boy spirit. Outwitting the management is apt to be regarded as a joke, and the smuggling-in of alcohol with a lenient eye. I do not say the latter often happens, but the tendency is there and has to be combatted. Now, in a voluntary sanatorium the superintendent is *never* faced with this difficulty. In the few instances in which alcohol has been brought in, the patient has been careful to keep his treasure to himself, for he well knows he would obtain no sympathy from the others. Those others would regard him as a general nuisance, and as a common enemy.

Strictly speaking, there is no compulsion in the sanatorium, except in the case of delirium and other mental states in which the patient is irresponsible : compulsion in any other circumstances would be illegal, and therefore impossible. But patients are informed on admission that they are expected to follow in all details the advice which is tendered them, and that in the event of persistent refusal or failure to conform with such advice, they will be requested to leave the institution. Obviously this is in their own interests. The right to discharge an unsuitable patient is the only real power possessed by the medical superintendent, but it is ample in all but a very small fraction of the cases admitted.

Since my earliest connection with the sanatorium,

patients with whom I have discussed the subject have been practically unanimous in expressing the opinion that the plan of putting them on their honour is far more likely to prove effectual against the illicit consumption of alcohol than that of trying to make alcohol inaccessible through legal confinement. Further, patients who have had experience of licensed retreats, perhaps, on more than one occasion, have averred that, in point of actual fact, there was less illicit drinking under the former plan. For a long time—some years, indeed—I paid little attention to these views and statements. They seemed so obviously an example of the wish fathering the thought. Moreover, one has to be continually on one's guard against the tendency of patients to make themselves pleasant to the "powers that be," and against the facile acceptance of evidence that happens to fit in with, and confirm, one's own work and theories.

Of late, however, there have been several patients whose evidence, coming on the top of all that preceded, could hardly be ignored. These patients had all been in retreats, either under the Act, or as voluntary boarders, and all had from time to time taken alcohol, either when away from, or within, the institutions. Yet while in the sanatorium none of them did so, although they were free to come and go after the first week or ten days. How account for the difference? Personally I ascribe *some* of the difference to the regular course of medication pursued in the sanatorium, but the patients explained things otherwise. They said: "I have given my word, and intend to keep it: I am on my honour"; or, "When I entered

I made up my mind to play the game"; or again, "There is no fun in getting a drink when it is so easy." These explanations afford food for reflection.

VOLUNTARY RESTRICTIONS.

An important item in the advice tendered is that the patient from the time of his admission remains within the building or the grounds of the institution, preferably within sight, until such time as it is deemed safe for him to go further afield. This period, whimsically termed by patients "being on the chain," varies in duration. In a few cases it is not necessary to enforce it: this refers to patients who have quite ceased drinking for some weeks previously, and in whom, judging from the history supplied, it is improbable that an outbreak is impending. But usually it lasts a week, ten days, or perhaps a fortnight: very occasionally it is longer.

The restriction is rarely a grievance. Now and then a patient will complain that his loss of liberty is annoying. But this feeling ceases at once when he is reminded of the fact that there is, and can be, no loss of liberty: he is merely following the medical advice and undergoing the medical treatment, to obtain which he entered, and for which he is paying.

Regarding such voluntary restrictions of liberty, the sanatorium course may be divided into two, sometimes three, periods, all of which vary in length according to the necessities of the case. The first period, "on the chain," has been referred to. During the second period, the patient, usually in company,

goes for short country walks, or to the village, returning, however, for each dose of medicine and each injection, and missing no meal, not even afternoon tea. Like the first, the second period varies in length, but commonly lasts much longer, and, indeed, often continues to the end of the course. But the restrictions need not be so severe throughout: in the latter part a meal may often be missed, and a tablet taken in place of an injection, etc. The third and last period is usually short and not invariably allowed: it covers the final week, perhaps the final fortnight, and is only common in those who prolong their stay in the sanatorium beyond the period of six weeks. The patient may then go occasionally to London, attending matinées or other *afternoon* places of amusement, having made special arrangements, so as not to miss his medicinal treatment. Visits to theatres, music halls, etc., *in the evening*, though permitted at one time, and even yet allowed in some cases, are not now encouraged. With the majority of patients the incidental risks are too great. Of late years there has been an increasing tendency for wives to remain in the sanatorium while their husbands are undergoing treatment. And in most such cases no doubt the rule against evening entertainments in London may be safely relaxed. The same applies, perhaps, to others who have passed a certain age, or who go accompanied by someone in whom the management have confidence. But for the rest the immediate surroundings of the sanatorium are regarded as the expedient limits for wandering between late dinner and bedtime.

All the above remarks apply to the minimum course of six weeks. In those cases—all too few, but steadily increasing in number—in which patients accept the advice to prolong their course to eight, twelve or more weeks, the sub-divisions of the course are modified accordingly.

POLICY IN A "FREE" SANATORIUM.

It is manifest that the policy expedient in a free sanatorium differs widely from that which can be pursued in a licensed retreat with patients who have signed away their liberty under the Inebriates Act. In the former patients are of necessity largely on their honour: this follows naturally from the absence of legal compulsion, just as a debt of honour takes precedence of a debt for which one can be sued. The superintendent can never forget this fact: he is forced to act in accordance with it at every turn. Wherefore he has to avoid the slightest suggestion that patients are *deliberately planning* to obtain alcohol. This is easier than may appear at first sight. A patient who is obviously unsafe to be left alone in the proximity of an hotel requests leave to go down to the village shortly after his admission, and offers to give his word of honour to take nothing while away. His sincerity must not be questioned for a moment; but it should be pointed out to him, that although he is ignorant of the fact, he is at present unsafe: that although he would doubtless start out with quite admirable intentions, he is still liable to be assailed, at any moment without any warning, by an uncontrollable impulse: that a single

drink taken in these circumstances wipes out what he has already gained and means starting over again ; and so involves loss of *his* time and *his* money. It would then be open, and indeed justifiable, for him to blame the superintendent for an error of judgment, etc.

This line of argument rarely fails: the patient sees the point at once, his face is saved, and he is content to wait, seldom making a second similar request. Later, in such cases, it is always advisable for the superintendent to take the initiative and himself suggest that the time has arrived when it is safe for the patient to *grant himself* a greater degree of liberty. Then, curiously enough, it not very infrequently happens that he has changed his mind. Realising his liberty, he takes no advantage of it. He will often remark: "There is plenty of room here, and really I think I am safer inside. I now see it is silly to take unnecessary risks, and am glad you advised me not to go out before." The fact is his brain is returning to a normal state, and he is beginning to see things in their real proportion. Further, he is ceasing to regard the sanatorium as a kind of reformatory where personal liberty is restricted—a view entertained on their entry by *new* patients almost without exception. Question any fresh patient a week or so after his entry as to his preconceived ideas of the sanatorium. It is no exaggeration to say that quite often he entertained visions of separate cells, low diet, enforced exercise, perhaps occasionally a strait-waistcoat, and generally a more or less penal *régime*. How such ideas originated he cannot, nor can anyone, say: possibly

they are a survival from the times when inebriety was regarded as a demoniacal possession to be starved and driven out of the human being by penances. !At any rate, it is certain that the continued existence of these and similar ideas still preclude many from seeking efficient institutional treatment. The fact is that life in the sanatorium is indistinguishable from life in a large boarding-house or small residential hotel, with the exception that there is no wine or other alcoholic liquor on the dining table.

No effort must be spared to avoid wounding the patient's *amour propre*. He must be treated as a responsible and honourable individual. He must never be *ordered*: he must be *advised*. But naturally it is essential to see that the advice is followed; and it is but common-sense so to arrange matters that this is not fraught with unnecessary difficulties. For example, a patient who is still drinking hard is admitted in the late afternoon or evening, and having been prescribed for is advised to go to bed at once. Also he is strongly advised to remain in bed on the following morning until the superintendent's visit. Now this advice is not nearly so easy to follow as might be imagined by the temperate reader: the patient in such circumstances is apt to suffer from an almost intolerable restlessness in the early morning. It is expedient, therefore, to smooth the way for him. It may be that on his arrival he is badly groomed and sadly in need of valeting. But the brushing and pressing of clothes takes time; and since the patient is to remain in bed, there is no need for hurry on the part of the rather busy domestic staff. A clean suit of

pyjamas and handkerchief are all that need be left in the patient's room.

There are many means of divesting restrictions of their irksomeness. For instance, in the systematic course of treatment by strychnine and atropine the injections steadily rise to a maximum in dosage, and then steadily fall; and it may be suggested to the patient who is constantly worrying to go out, that he will be safe in doing so only when the dosage is reaching its climax or thereabouts; and such climax may be quite slowly attained, if thought advisable. In some such way it is possible to eliminate the personal element—to prevent the patient thinking that *he* is being treated unduly harshly, or made an exception of, the which he is prone to resent.

The policy adopted is to give the maximum of liberty consistent with safety. For example, often two patients may be allowed out together, when it would be inexpedient to allow either out alone. The safety of the two results from the moral tone engendered by the absence of compulsion. A patient by himself might take alcohol, but he would not for anything be seen doing so by another patient: he would as soon be seen by the superintendent. Of course there are exceptions: one patient some years ago seemed to delight in trying to persuade the others to drink: his stay in the sanatorium was short. Such cases are extremely rare: in fact, I know of no other.

Every endeavour is made to explain to each patient on his admission what the sanatorium can do for him, and what he must not expect from it.

The term "cure" is never employed, not because there are not many patients on the books who have remained well since leaving the institution, but because the term is used in so many different senses as inevitably to lead to misconception. It is explained that while in the sanatorium the craving for alcohol will almost certainly cease and remain in abeyance; and further, that except in very special circumstances, it will not re-arise *unless the patient takes alcohol again*. When that has happened, however, all further security will have disappeared.

The majority of patients are on admission fully prepared for these limitations. But some few have anticipated more definite results—that after treatment they would be able to do what had been beyond their power for years, namely, to indulge in alcohol in moderation. Others, again, have imagined that after leaving the sanatorium they would be unable to take any kind of alcohol without immediate distressing symptoms, such as nausea and vomiting. All these have been undeceived, with the result that in some cases they have changed their minds as regards undergoing treatment.

The assertion that the craving for alcohol can be counted upon to remain in abeyance indefinitely unless some alcohol has been taken does not of course apply to the small class of true periodic dipsomaniacs (p. 61).

Undoubtedly the most important, as well as the most difficult task devolving upon the superintendent of a sanatorium for alcoholism, is to see to it that the alcoholicist is allowed no chance of escape from the conclusion that total, and *permanent total*

abstinence is absolutely essential in order to avoid relapse. The superintendent himself may or may not hold the view that total abstinence should be the unvarying rule for the whole of the human race; but if he does it will be highly inexpedient for him to impart this view into his argument. Should he do so he will certainly weaken his case: his patient will regard him as an extremist, and consequently discount all he says. For he, doubtless, has many acquaintances who have taken alcohol in strict moderation for many years with no perceptible harm, and certainly with no temptation to exceed. Far safer will it be for the superintendent to take the position that the patient is an individual with one special weak point to which it will always be necessary for him to live down. It may even be admitted that he will lose some enjoyment in life through his inability to take alcohol in moderation, but it can be pointed out that there are numerous compensations: he may be likened to an enthusiastic tennis player, who, having become lame, is obliged to forego tennis, but may yet make a big success at croquet or billiards.

In endeavouring to persuade the patient of the inevitability of the relapse into excess which follows even slight indulgence, stress should be laid upon the statistical argument. Thus Norman Kerr in his very large experience knew of but two cases in which the cured inebriate after a prolonged term of abstinence became *and remained* a very moderate drinker.* For myself, I am not sure that I know of one such case. It is true that in the statistical

* 'Inebriety or Narcomania,' 1894, p. 400.

statement of results (p. 253) cases are set down as improved but not abstainers. But the last information concerning most of these cases is not very recent; none of them can yet be regarded as permanent; and the exact meaning of the term "improved" is not stated. The most striking testimony, however, to the inevitability of the relapse which follows the consumption of alcohol is the statement of Dr. Branthwaite, inspector under the Inebriates Acts, that "after thirty years experience of inebriates, embracing a knowledge of some 10,000 cases (he) does not know a single instance where a typical inebriate, who has become sober, has remained sober as a moderate drinker."*

Stress must also be laid upon the full meaning of total abstinence. Everything the patient takes, whether liquid or solid, must be *chemically* free from alcohol. Many so-called "temperance" and "non-intoxicating" beverages, even some described as "non-alcoholic," do contain an appreciable amount of alcohol. The term "non-alcoholic" would seem to be used sometimes to imply free from *added* alcohol. But, as is well known, all fermented beverages necessarily contain alcohol, although the percentage may be low. And all such must be avoided by the ex-alcoholist. For observation shows that in some patients the constant ingestion of fluids containing even low percentages of alcohol is capable of keeping alive, or even re-creating, the alcoholic craving. A patient, who was intensely anxious to remain well, limited himself to ginger-ale of a well-known and deservedly popular brand: it

* 'Brit. Med. Journ.,' September 2nd, 1911, p. 518.

was fermented, but contained no added alcohol. Shortly, however, he seemed to become dependent on it; and in the course of a few months was taking more than a dozen bottles a day: this, although he was ignorant of the fact that it contained alcohol. Eventually he reached the limit of his capacity for fluid, and yet remained unsatiated, whereupon he fell back upon whiskey and soda. I honestly believe he would have remained well had he restricted himself to non-fermented beverages. It should be pointed out that even were it possible to take alcohol and refrain from excess, the ex-alcoholist so acting would be much worse off than the abstainer. For he would be one of those who remained sober through constant exercise of will, and whose mental condition is incomparably less comfortable than that of those who remain sober through absence of temptation (see pp. 7, 8).

In spite—perhaps in consequence*—of the frequent change in the personnel of the patients there is very real *esprit de corps* in the sanatorium, the which is shown in many ways. Those who have “turned the corner” and “are feeling fit” in spite of abstinence are always ready to sympathise with, and cheer up, the new-comer, who, not having even arrived at the “corner,” is irritable and despondent. It is a never-ceasing source of wonder to note how tactfully kind and considerate to one another are patients suffering from alcoholism—a class, it may

* There is a tendency, when people are long and exclusively associated together, for them to become mentally stale, bored, and irritable. This is often noticed in long voyages in sailing ships, where there are few or no passengers.

be remarked, which is often charged with consistent untruthfulness and loss of all moral sense.

It has been said that the association of many patients suffering from alcoholism and inebriety has a bad influence. This may be—and probably is—true of retreats where patients are detained involuntarily and for long periods. But it certainly is untrue of a free sanatorium. Here the association of many patients is not only not injurious, it is distinctly beneficial: it is beneficial in many ways. For it can be shown that patients obtain the full benefit of both good examples and bad examples, without the drawbacks attaching to either. The influence of good examples may be illustrated by the following case:

A clergyman of the Church of England had resided for some weeks with a medical man—he was the only resident patient. Though put through practically the same medicinal treatment as is used in the sanatorium, he failed to break himself from taking alcohol—he never, indeed, obtained a clear start. Then he entered the sanatorium and quickly recovered. I may say he was deeply grateful to the medical man with whom he stayed, and who treated him with extreme kindness and attention. To me he explained both his failure and success in these words: “There I was praying alone: here I have been praying in church amidst a sympathetic congregation.”

It must not be inferred that the social atmosphere of the sanatorium at all resembles that of the inner precincts of a cathedral city: that would be a serious error. The reverend patient simply meant that an effort to attain a given object is easier, and more likely to be rewarded by success, when made in con-

junction with others sincerely striving towards the same end. His analogy was, I think, unquestionably true, though it must not be forgotten that in any case loneliness and boredom are serious obstacles, social surroundings and interesting occupations of great assistance.

The influence of a bad example is, if anything, more efficacious than that of a good example. By turning to the chapter on results it will be seen that something under 50 per cent. of the patients treated are known sooner or later to relapse. Now a high percentage of these come back for a second course of treatment; and quite a number of such returned cases remain well subsequently. Hence it happens that during the six or eight weeks' course of treatment of any one patient, there are always some relapsed patients admitted. These relapsed patients are in a way a class by themselves: they are regarded by the others as specially experienced in sanatorium methods and results. And it is natural for patients undergoing treatment for the first time to consult such "old hands" as to their experiences. Now, what the new patient learns from the old is, I have reason to know, of special value—often of greater value than the advice he obtains from the superintendent. Most important of all, the new patient begins to believe what he has hitherto been only told, although he probably even now does not fully realise the truth and significance of the fact, that a single alcoholic drink of any kind will inevitably involve relapse into his previous condition. For all these relapsed patients (omitting the rare cases of true dipsomania) will assure him that, after leaving the sanatorium, they

were never annoyed by any craving for alcohol *until after they had taken some*: that the first drink, whether taken through carelessness, forgetfulness, or otherwise, was *not taken in response to any craving*, but that craving rapidly followed the taking of the first drink. It seems a little curious that the statement of a patient, who has hitherto been more or less of a failure, should have a greater convincing value than that of a physician with special experience of alcoholism; but so it undoubtedly is in many instances.

In other ways the admission of patients, whether old or new, who are obviously alcoholised, if not intoxicated, is apt to operate beneficially on the residents. Very often, when everything in the sanatorium has been for a time proceeding smoothly—perhaps too smoothly—one may notice a tendency to general slackness, a tendency to treat the whole subject of alcoholism with insufficient seriousness, if not levity. It is at such times that the patients will be found missing occasional doses of medicine, being a little late for meals, etc.; and it is at this stage that the humorous side of alcoholism, never allowed to sink entirely into oblivion, is apt to assert itself in the smoking room. Then suddenly a new arrival, not sufficiently intoxicated to be sent to his room, joins the small community and attempts to make himself generally agreeable. The impression he makes is excellent, though hardly what he intends. Perhaps never before have those who have now “turned the corner” realised how deadly uninteresting is the conversation of the semi-intoxicated individual, what a terrible bore he can be, and what

an ass he commonly makes of himself. Always before, when associating with a person in such a state, they have themselves been more or less attuned. Now, however, they see him from the real outsiders' point of view—from the standpoint they themselves have so often been seen—and this gives them much food for serious thought. At any rate, all slackness in the sanatorium suddenly ceases, and drink yarns go quite out of fashion for the time being.

The kindness and consideration shown to each other by the patients is never more noticeable than in the case of the very few patients who are socially somewhat below the average. Occasionally I have felt a little doubtful as to the expediency of accepting such a patient: I have questioned whether it was fair to the others. But I can conscientiously state that never yet (except in one solitary instance) have I had reason to regret doing so. The alcoholic—most certainly the male alcoholic—is very rarely a snob. Possibly, through an abiding consciousness of his own weaknesses, one of his most distinguishing traits is tolerance—a very broad tolerance indeed. And so it happens that the socially inferior patient is commonly made more of than any other, and has not infrequently ended by becoming the most popular member of the community.

The facility with which patients are weaned from alcohol, and the freedom from the insistent desire for alcohol which soon ensues, are undoubtedly due, in part, to the efficiency of the regular course of medicinal treatment which is pursued in the majority of cases. But the ultimate results—the duration of

the period of abstinence which follows—depend upon a multiplicity of factors. It goes without saying that much depends upon the personality of the patient and upon his subsequent environment; but much depends also upon the appeal which is made to him during his stay in the sanatorium. Having regard to inebriety generally, such appeals are, of course, extremely varied in accordance with the wide diversity in the temperaments of patients; they vary also of necessity with the personality of the physician. But speaking only *for* myself and chiefly *of* the chronic alcoholic, the most generally efficient is the appeal to the patient's common-sense. For the chronic alcoholic—more particularly, of course, the chronic sober alcoholic—is probably more often than any other class of alcoholic a shrewd, hard-headed man of business: temperamentally he is the least neurotic of alcoholists; and he is consequently more open to persuasion through his reasoning faculties than his emotions. He should therefore be taken fully into the confidence of the physician. It should be pointed out that the acquired capacity for ingesting large quantities of alcohol without showing signs of intoxication of necessity carries with it the more than compensating incapacity to remain even temporarily on a normal level of comfort and wellbeing in the absence of alcohol—in short, that tolerance of, connotes continual slavery to, alcohol. The chronic alcoholic may well be encouraged to take an intelligent interest in the pathological tissue changes to which he, more than alcoholists generally, is subject. One telling demonstration can nearly always be made.

The most constant evidence of tissue damage is in the kidneys: with rare exceptions chronic alcoholists have albuminuria while they are drinking and for a time thereafter; and it is decidedly impressive to take patients daily into the laboratory and show them the steady fall in the amount of albumen passed during successive days of abstinence.

Worry, more than any other single cause, operates to defeat the objects of treatment. This is equally true whether the patient be suffering from alcoholism, morphinism, or other drug habit.

Consequently every endeavour is made to shield the patient from worry of all kinds during his course of treatment, especially during the tapering stage. With this object, the following italicised paragraph has been inserted in the prospectus of the sanatorium :

“ It is earnestly requested that relatives and friends will refrain from inditing correspondence likely to cause worry, business or domestic, to the patient.”

It might be thought that relatives or friends who had for many months, perhaps years, endeavoured in vain to persuade the patient to enter an institution, would have been only too anxious to lend their full assistance in the management, or at least to avoid errors of commission calculated to neutralise the effects of the treatment. Yet experience shows that such is by no means always the case. Too often it would seem they allow their feeling of resentment to over-ride their reason. Recognising that all their well-meant advice in the past had been wasted through the lack of receptivity of the more or less

narcotised patient, they seize on the period of treatment in the sanatorium as the golden opportunity for impressing upon him the misery and disasters he has brought upon his family. Shortly after his admission, when perhaps he is suffering somewhat acutely from the want of his accustomed narcotic and from remorse generally, I have seen the patient flooded with correspondence full of bitter upbraiding or cheap and entirely futile advice. It can safely be asserted that in no single instance has this practice done any good, whereas in some it has rendered abortive all the efforts of those in charge of the patient; in any case, it never fails to make the management of the case more difficult than it need be. During the *early days* of treatment in the sanatorium, no effort should be spared to save the patient from worry of all kinds. With each succeeding week he becomes increasingly able to appreciate well-meant advice and to forgive tactlessness for the sake of sincerity. And it is *towards the end of*, if at all, during his period of treatment, that he will be found responsive to reason and fitted to face the problems of his future.

There is a point of policy which may perhaps be referred to most appropriately in this connection. Though quite illogical, there exists a wide-spread idea that residence in a sanatorium for alcoholism, whether free or other, leaves behind it something of a stigma. Many patients, therefore, wish to avoid recognition while in residence; nor are they anxious for publicity subsequently. Hence it is a common, and in my view, an eminently justifiable plan to enter under an assumed name. The plan is especially

expedient in the case of professional men, such as lawyers, medical men, and clergymen, in whom loss of income or position might easily follow detection. It is expedient also in the case of titled persons, whose identity is so easily established.

Medical men commonly enter with the idea of concealing their profession. But experience shows the attempt to be always futile. Invariably within a few days their occupation is known to all: by some chance scientific expression they have "given themselves away." I have been in the habit, therefore, of advising medical men frankly to admit their profession, but to change their surname to some moderately common name of the same initial letter. So they are relieved from the necessity of constantly acting a part—in itself a great advantage. And even if in the end, through some slip on their part, their real name comes out, that is of comparatively little importance. The custom of name-changing is well recognised in the sanatorium, and any acquaintances they have made therein well remember them (if at all) under the pseudonym.

DIET.

Various systems of diet have been claimed as cures for alcoholism. The system most persistently advocated is vegetarianism or that modified form of vegetarianism which permits milk and cheese, perhaps eggs. It is said that the stimulation caused by meat extracts (and other uric-acid forming materials) is followed by a reactionary depression which in turn demands stimulation by alcohol. (In passing it may be mentioned that some of those who

thus argue maintain elsewhere that alcohol has no stimulant properties, but is merely a narcotic.) In any case the question can be decided only by experience, and Norman Kerr, who himself confesses to a partiality to the vegetarian idea, was driven to acknowledge eventually that the claims of vegetarianism with regard to alcoholism were baseless.* He points out the constant association of whiskey and porridge in Scotland, and that of enforced vegetarianism and extreme drunkenness in some oriental nations. The South Sea Islanders at home probably eat less animal food than any other race, yet their craving for alcohol when accessible is usually uncontrollable. There seems a somewhat obvious fallacy underlying the claims of the various diet cures. The alcoholic who lives on an ordinary mixed diet naturally finds any special system unpleasing. Yet when strongly recommended by a physician in whom he has confidence, he may be ready to abide by it. And the patient who follows most strictly his physician's advice is the good patient, and, other things equal, the patient most likely to remain an abstainer. On the other hand, the patient who disregards the physician's advice in one thing, say diet, is he who is likely to disregard it in others and so relapse. It is then easy to explain the relapse by laxity of diet.

Nevertheless, I am myself inclined to believe that a diet which is largely, but by no means exclusively, vegetarian has a place in the treatment of alcoholism. And certainly a diet consisting mainly of lean meat is injurious in so far as concerns the alco-

* 'Inebriety or Narcomania,' 1894, p. 320.

holic habit itself. Unless specially contra-indicated by complications, there should always be at every meal a fairly generous allowance of carbohydrates, perhaps especially sweet carbohydrates. This conclusion has been arrived at through observation.

With most alcoholists there are certain periods in the day when the craving is at its worst, when consequently the patient is accustomed to drink most freely, and when after withdrawal he is most likely to relapse. In the sanatorium breakfast is at 8.30 a.m., luncheon at 1 p.m., afternoon tea at 4 p.m., and dinner at 7 p.m. And assuming he has slept well through the night, the ordinary patient will begin to crave for alcohol most insistently an hour or more before luncheon and dinner, that is, about 11.30 a.m. and 5.30 p.m., and this will continue until the evening meal. The early morning craving, of course, is common, but chiefly at the commencement of treatment; also it is usually the first to cease. The craving is referred to the epigastrium, and is described as a sensation of "sinking" or "emptiness." It seems to be connected with the end of gastric digestion, for it is contemporaneous therewith and ceases after meals. Moreover, it can be relieved at any time by a little food, preferably a glass of hot milk, to which has been added a teaspoonful of powdered ginger, or a drop or two of any fluid preparation of capsicum. Now a lean meat meal undergoes rapid digestion in the stomach, which is left empty long before the succeeding meal is due, and in these circumstances the craving for alcohol returns simultaneously. But by an adequate admixture of starch foods, potatoes, puddings, etc., the process

of gastric digestion is considerably prolonged, and by so much the dangerous period postponed, if not altogether evaded. It is for this reason that afternoon tea, together with some solid food, is insisted on. And patients who are spending the time between luncheon and dinner away from the sanatorium are always instructed not to miss this small meal, which, if possible, should be taken at or near the usual hour.

Sugars and sweet things generally have a special inverse relation to alcoholism. It is well known that chronic alcoholism kills the desire for sweets, the taste for which, however, nearly always returns—even after remaining for years in abeyance—within two or three weeks from the final withdrawal of alcohol. Hence obvious enjoyment of the sweet course is accepted in the sanatorium as a satisfactory index of recovery. But the inverse relation does not end here. There is a converse. It is certain in some cases that the ingestion of sweets of any kind is capable of controlling for a time, at least, the craving for alcohol. One patient, a mild but true dipsomaniac, whose outbreaks occurred at irregular intervals and quite without warning, had discovered this fact for himself. When walking along the street he would suddenly be attacked with a craving for spirits, and would make his way without further thought to the nearest hotel. Sometimes, however, he would pass a confectioner's on the way, and if he could make up his mind to enter and eat some chocolate creams or other sweetmeat, all desire for alcohol would immediately leave him. The occurrence or otherwise of a dipsomaniac paroxysm would thus sometimes depend upon whether he first came

across an hotel or a confectioner's. But I am afraid it must be admitted that most often he first happened on the hotel, perhaps on account of its greater conspicuousness.

TOBACCO.

The relations between smoking and alcoholism remain unsettled. For my own part I am unable to see any real connection between the two drug habits. Certainly most male alcoholists smoke; but in some the two habits alternate rather than concur: smoking is indulged in mainly, if not solely, during the intervals of abstinence from alcohol. Norman Kerr, who proclaims himself no defender of tobacco, which he regards as a pure luxury, injurious to the health of many even when used in moderation, is driven to conclude that there is no true tobacco inebriety or mania.* Further, he has little doubt that the contention that the tobacco habit conduces to alcoholic inebriety is in general untenable.† He regards the frequent association of the two habits as accidental,‡ and he mentions some instances in which the sedative influence of tobacco successfully subdued the alcoholic craving for the time being.§

At the present time the hostility of a large section of extremely well-meaning temperance philanthropists is directed mainly against the cigarette habit. It has even been said in public by a well-known temperance protagonist that he would sooner see his son an alcoholic inebriate than a confirmed cigarette smoker. All such over-statements may be allowed

* 'Inebriety or Narcomania,' 1894, p. 148.

† *Ibid.*, p. 207. ‡ *Ibid.*, p. 208. § *Ibid.*, pp. 209, 378.

to pass. And we may still proceed to weigh the evidence.

As regards the toxicity of tobacco, there can be no doubt that, other things being equal, cigarettes represent the minimum. Some few years ago the 'Lancet' stated that hitherto the only form of the tobacco habit which had not caused tobacco amblyopia was cigarette smoking. Chewing strong tobacco is probably the most toxic form, after which comes pipe smoking of strong tobacco, and strong cigars. The writer is himself a cigarette smoker for the reason that pipe smoking still exerts toxic effects, such as cold skin, and a tendency to nausea: he has for some years lost his full tolerance of tobacco taken in this form. And in a few patients who were obviously suffering from tobacco toxæmia, the symptoms have been promptly relieved by substituting cigarettes for the pipe. Pipe smokers dislike new pipes as a rule, and it may be supposed that a pipe becomes increasingly toxic with continued use.

It must be admitted, however, that there is one great disadvantage connected with cigarettes. They conduce to excess, and this in many ways. They are convenient to carry, they do not scent one's clothes because they are always thrown away when once lighted; and unlike pipes and cigars, they can be smoked on almost every conceivable occasion, even in many drawing rooms. Nor are they any trouble. Consequently the cigarette smoker finds himself lighting cigarette after cigarette in mere absence of mind, often when he really does not care whether he smokes or not. There is an obvious remedy for this tendency. Let the cigarette smoker learn to roll his

own cigarettes. Let him carry a pouch of good cigarette tobacco and a book of papers. He will then know what kind and quality of tobacco he is smoking, and he will be automatically precluded from smoking when he is really indifferent to it. This plan has been recommended on many occasions, and as a rule, the immediate result has been a reduction in the daily number of cigarettes of about two thirds, and that without any inconvenience or discomfort. The smoker will not go to the trouble of rolling a cigarette unless he really feels inclined for a smoke. So much for mere excess.

As regards the widely spread view that cigarette smoking conduces to the alcoholic habit, there is a series of facts which seem to me conclusively contradictory. All middle-aged persons can readily call to mind the time when cigarettes were almost unknown in this country: cigarette smoking in the street proclaimed the foreigner or one who had resided abroad. Since then the habit has become ubiquitous. Yet will anyone assert that alcoholism has increased meanwhile? Again, take those countries where cigarettes have been in common use for much longer than in the United Kingdom. In Spain, Portugal, Sicily, Southern Italy, Greece, Turkey, on the north coast of the Mediterranean, and in all the provinces on the northern seaboard of Africa, cigarette smoking is comparatively an old institution. Yet all these are sober countries—therein is no temperance question.

CHAPTER VIII

Treatment (*continued*)—The withdrawal of alcohol; cases suited for sudden withdrawal; cases suited for tapering; principles of successful tapering—Special drugs used; apo-morphine hydrochloride; bromide of sodium; special hypnotics; strychnine, atropine, cinchona rubra, and gentian; morphine tartrate; rationale of the action of drugs used in alcoholism—Duration of treatment; after-treatment; parting advice.

THE WITHDRAWAL OF ALCOHOL.

THE inadvisability of insisting on the sudden withdrawal of alcohol in all cases has been dwelt upon (p. 115). Even in patients admitted into licensed retreats under the Inebriates Acts, it is found expedient occasionally to allow a little alcohol as a *placebo* for a day or so after admission. And it is easy to see that in a voluntary sanatorium, where patients may leave at any time without notice, the pressure of expediency is felt more frequently and more insistently. In this chapter, however, I am considering cases in which alcohol should be at once withheld, or, on the other hand, cautiously tapered off, from the sole standpoint of the patient's recovery without unnecessary suffering and without avoidable complications.

As a general rule, the question of tapering *versus* sudden withdrawal must be decided by the existence

or absence of acquired tolerance to alcohol. In most cases of dipsomania and pseudo-dipsomania the patient has been drinking for a few days only, and no degree of tolerance worth considering has been set up.

In such it is important to avoid even a *single dose of alcohol*. Alcohol here gives only momentary relief: indeed, in most cases it is patent that a marked increase in the dipsomaniac craving follows very shortly after each dose. The history of many of these patients who have been treated during the outbursts in their own homes, by their own medical attendants, shows clearly that by giving alcohol in moderate doses—doses insufficient to cause gastric catarrh or other kinds of physical illness—the dipsomaniac or pseudo-dipsomaniac paroxysm may be prolonged almost indefinitely. When this line of treatment is pursued—and it is often the only line which is possible in private practice—one of two events nearly always happens: (1) The patient is persuaded or morally forced to enter some institution like the Norwood Sanatorium; or (2) he takes matters into his own hands, drinks alcohol of some sort in enormous amounts, and quickly brings on physical prostration of some kind, and with it the end of the paroxysm.

Cases suited for sudden withdrawal.—Reference has been made to differences in the character of the dipsomaniac and the alcoholic cravings respectively (p. 89). These differences have an important bearing upon therapeutics. As will have been already gathered, the administration of alcohol in the dipsomaniac craving is not merely futile—it is positively harmful, in that it inevitably prolongs the

condition of mental unrest. Alcohol, therefore, should be at once withheld, and nothing short of the certainty of driving the patient to leave the sanatorium allowed to interfere with this practice. The dipsomaniac craving can, and should, be immediately quenched by apomorphine, as will be pointed out presently.

There are a few exceptions to the rule that alcohol should be suddenly withheld in pseudo-dipsomania. As stated previously (p. 86), there are cases classed as pseudo-dipsomania, which approximate to chronic inebriety or even to chronic sober alcoholism. In such the paroxysms are comparatively mild and proportionately prolonged, and consequently there may be established a certain degree of tolerance. If so, it is advisable to taper, but the tapering rarely requires to be extended beyond two or three days.

Cases suited for tapering.—In chronic alcoholism, whether inebriate or sober—but much more particularly in chronic sober alcoholism—tapering is usually advisable, often essential, and never injurious. This does not mean that all chronic alcoholists who enter the sanatorium are tapered. Some, impressed by the common belief that medical men always insist upon sudden withdrawal, and dreading the effect thereof, have tapered themselves off during the week or so before entering. Others have been tapered off by their own medical attendants as a preparation for entry. And a few—a very few—have themselves insisted upon sudden withdrawal after entry. The last have made a definite resolution not to touch alcohol of any sort after crossing the threshold of the sanatorium; and it has been

usually considered best not to interfere, although, as a matter of fact, an attack of delirium tremens has resulted in more than one of these cases.

The special necessity for tapering in cases of chronic sober alcoholism is seen in the previous histories as regards drunkenness of twenty-eight cases of delirium tremens, referred to on p. 152.

It is not always possible to estimate accurately the degree of tolerance set up. Many patients are honestly ignorant of the amount of liquor they have been accustomed to take. And others, through a sense of shame, deliberately practise concealment. The latter are not uncommon: they may be a source of danger to themselves; and they are responsible for the prevalent view that delirium tremens may arise in the moderate drinker, and, indeed, even in the abstainer. Hence after admission, it is frequently advisable to institute a short tentative period of abstinence, watching the patient carefully the while. In those who have acquired much tolerance, unmistakable symptoms soon make their appearance. Most of these are well known. Such are nervousness and restlessness, insomnia, muscular tremor, and anorexia, with vomiting or retching. It is important that those should not be allowed to continue.

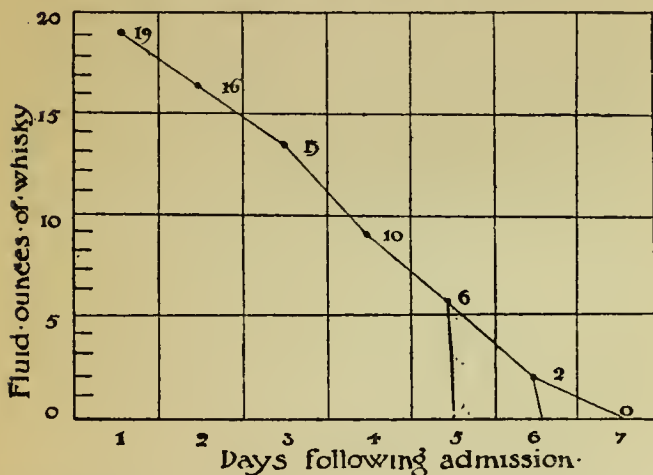
Especially is this true of the digestive symptoms. Vomiting and retching are commonly attributed to gastric catarrh, from the direct irritant action of alcohol on the gastric mucosa, and no doubt often correctly so. But it is not, I think, widely recognised that these symptoms may (and very often do) arise directly from the sudden or too rapid withdrawal of alcohol. Many chronic alcoholists are quite unable

to face food (even the sight or smell of it sometimes) during a short period of abstinence. In them, alcohol given on a quite empty stomach restores for the time being, not only the appetite, but the power of digestion. On the other hand, if the complete abstinence from alcohol is prolonged, the anorexia not infrequently passes into constant retching and total inability to retain anything on the stomach, even alcohol given in its most tempting form, for instance, iced champagne. Then the possibility of satisfactory "tapering" is practically lost. This is the immediately antecedent history of many an attack of delirium tremens and alcoholic epilepsy. It is important, therefore, to prevent the onset of the gastric revolt, and this can practically always be done by giving alcohol in appropriate doses. The onset of many of the symptoms above referred to, extreme restlessness, muscular tremor, etc., should be accepted as an indication for tapering. And the same is true, as already mentioned, of the existence of marked albuminuria.

The principles of successful tapering.—When tapering is carried out with perfect success there are not only no complications, but no symptoms—that is to say, no additional symptoms—nor indeed, any added suffering or even discomfort. It is, therefore, necessary to formulate certain general rules for tapering. With this aim in view I have made a series of tapering charts, and selecting only those in which the withdrawal of alcohol was unaccompanied by symptoms, have combined these into a single composite chart. This chart, which explains itself, is represented below.

In the case represented there is supposed to be a tolerance of whiskey of about one bottle (26 fluid ounces) a day; that is to say, the patient has for a considerable time taken approximately that amount of spirits without obvious symptoms other than odour of breath. He may, or may not, have been

CHART 2 (ALCOHOL TAPERING)



intoxicated at times, but only when the amount stated was exceeded, or taken with unusual rapidity.

It will be observed that the curve formed is practically a straight line. There must be no sudden fall in the amount given; and this is especially important during the first *two or three days*. On the other hand, after the fourth or fifth day, when the amount of alcohol has fallen to four or six ounces, further tapering is often unnecessary: indeed, some patients at this stage themselves suggest complete

and final withdrawal. The tapering curve then becomes convex with the convexity upwards.

Undoubtedly the most important point from the standpoint of avoiding symptoms and complications is the cautious reduction from the amount of acquired tolerance during the first three or four days. Failure to recognise this is accountable for many cases of delirium tremens. From such cases it is apt to be argued that tapering does not prevent the occurrence of this complication. I think I am correct in saying that in private practice and general hospitals during recent years it is rare for a patient, even one who is obviously a chronic alcoholic, to be ordered more than eight fluid ounces of spirit during the twenty-four hours. At any rate, this is true of those general hospitals with which I have been connected for many years. Yet, in those who have acquired high tolerance, this amount of alcohol may be quite inadequate to prevent complications, especially, perhaps, in severe traumatism and acute pneumonia. As already asked, what is the value of eight fluid ounces of whiskey to a patient who has for many weeks or months regularly absorbed into his system twenty-six to forty fluid ounces with but slight signs of intoxication? The subject is of more vital importance in general hospitals than in a sanatorium for alcoholism. In the latter, delirium tremens is rarely complicated: it is very unlikely to be fatal; and convalescence, especially from a first attack, is almost always followed by a prolonged period of abstinence from alcohol. On the other hand, in severe compound fractures or acute febrile diseases, it is obvious there can be no more unfortunate complication than an

attack of delirium tremens: even when the patient survives, its onset may easily turn the scale in favour of amputation as against conservative surgery. With a view to its prevention, it should not be lost sight of for a moment that in those who have established tolerance, a certain amount of alcohol—often a very large amount, when measured by ordinary standards—has, for the time being, become an essential of “normal” existence, and it need not be argued that mid-stream is an unwise place in which to change horses. As was to be expected, acquired tolerance of alcohol presents many features in common with acquired tolerance of morphine. In both tolerance is established by means of small, regular, but ever-increasing doses. In both the euphoria which at first followed each individual dose, and which led to the formation of the habit, soon ceases: the continuance of the drug is then necessitated by the misery caused by its omission. And in both the degree of tolerance is a very accurate measure of the intolerance of its sudden withdrawal.

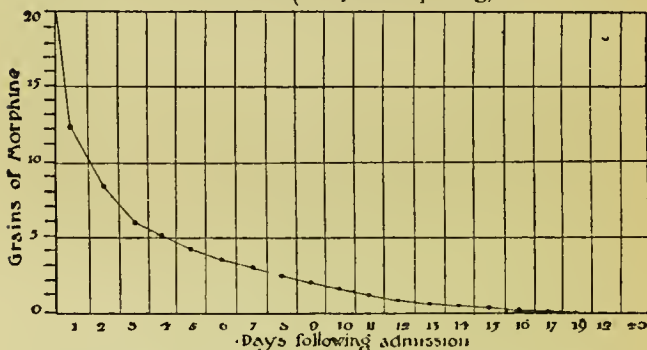
But when we come to treatment, there is at least one important point of contrast. The tapering curves differ essentially. In morphinism it is almost always easy to commence with a sudden large reduction in the daily allowance: as a general rule, the dose may be nearly halved at once, without causing more than discomfort. Such a reduction, as above pointed out, may lead to complications in alcoholism. On the other hand, while the smaller amounts are easily got rid of in alcoholism, the reverse is the case in morphinism. In morphinism, as is well known, there is often more difficulty in getting rid of the

last grain than in, say, the first 19 gr. These differences in the two drug habits are an interesting subject for speculation: at present, however, they are matters for observation, not explanation.

The following is a composite chart, constructed from a series of charts of morphine cases treated by tapering, without complications, and with comparatively little suffering.

It will be observed that the curve has its concavity upwards. The first reduction in dose is always the

chart 3 (Morphine tapering)*



largest that can be made without causing suffering. Thenceforward the daily reductions become smaller; while towards the end of the tapering process, the most insignificant reductions may become matters of real moment to the patient. It is not rare at this time to find that the administration of $\frac{1}{20}$ or even $\frac{1}{40}$ gr. renders the patient quite happy for some hours.

Comparing the two charts (alcohol and morphine),

* This chart somewhat understates the average time required in the withdrawal of morphine.

one may say roughly that the curves represent an arithmetical and geometrical progression respectively.

The rapidity with which alcohol may be tapered off varies with the amount taken, but especially with the length of time during which it has been uninterruptedly taken, and the consequent degree of tolerance established. In no case is it necessary, however, to spend more than eight or nine days over the process; and there are very few in which six or seven days are not ample. But often it happens that a patient has not so much time to spare: he has important appointments which cannot be deferred. Then it is necessary to taper rapidly and conduct him to the "corner" in the three or four days. In such cases a certain amount of risk—not much—must be incurred, which is no doubt greatly minimised by appropriate hypnotics. But the most important point in rapid tapering is the *avoidance of all physical exertion*, to ensure which end the patient should be kept absolutely in bed for several days: even the muscular effort of dressing must be avoided. Alcohol is eliminated mainly by combustion, and the rate of combustion (estimated by the output of carbonic acid) during hard muscular exercise and complete physical rest respectively is as 3, 4, or 5 to 1. And clinically the physiological influence of a dose of alcohol is proportionately enduring when the body is at complete rest. The same is true of morphine.

SPECIAL DRUGS, OTHER THAN ALCOHOL, USED IN THE TREATMENT OF ALCOHOLISM.

These are apomorphine hydrochloride, bromide of sodium, various hypnotics (*e. g.* veronal, trional,

sulphonal, paraldehyde, chloral hydrate, and hyoscine hydrobromide): strychnine nitrate, atrophine sulphate, red cinchona bark, and gentian; and, very rarely, morphine tartrate.

Apomorphine hydrochloride.—This drug is always used hypodermically, and the most convenient solution has been found to be 1 to 200. Apomorphine is probably the most useful single drug in the therapeutics of inebriety: no other acts so promptly and certainly, and is so free from counter-balancing disadvantages. In the sanatorium it is used in three different sets of circumstances: (1) in maniacal or hysterical drunkenness: (2) during the paroxysm of dipsomania, in order to still the insistent craving for alcohol; and (3) in essential insomnia of a special variety.

In maniacal or hysterical drunkenness, also termed *mania à potu*, the effect of a full dose of twenty minims of the solution given hypodermically is startling: there is probably nothing in the whole practice of therapeutics quite so striking. Just previously the patient may have been shouting for alcohol and wildly uproarious, necessitating restraint by two or more attendants. Within ten or fifteen minutes, usually much less, he is quietly asleep. Given in this full dose the drug is always strongly emetic, but the vomiting quickly ceases. The emetic action is, of course, incidentally advantageous in the circumstances. The hypnotic action is no less certain and hardly less rapid than the emesis. Indeed, in some cases, the patient is fast asleep before the intermittent spasms of the diaphragm have ceased: hence there is a possible danger of asphyxia

if the patient is left too soon. The further course of the case varies little. Practically always the sleep induced lasts two or three hours: it is light, however, for the patient is easily roused. In some cases he remains asleep for seven or eight hours. When he awakes his mental condition is entirely altered. He may be sober and rational. If not, he is at least quiet and easily managed.

Although there is no fatality recorded from the use of the drug, it is stated that apomorphine given in full emetic dose (*i. e.* $\frac{1}{10}$ gr. or 20 m of the 1 to 200 solution) has occasionally been followed by severe collapse. In the sanatorium, however, no symptoms have ever occurred which gave rise to the least anxiety, except perhaps in the following case:

An athletic gentleman, aged 34 years, was brought in in an advanced stage of intoxication, and after being put to bed with much difficulty, was given 15 m of the apomorphine solution hypodermically. He vomited several times, and promptly went into a sound sleep. During the succeeding hour his pulse fell steadily in frequency until it numbered only 36 beats to the minute; but there was no change in his appearance, or any other symptom which caused uneasiness: his pulse was of good quality, and quite regular. I then roused him, and immediately the pulse-rate rose to 80 or more.

It may be well, therefore, to administer the drug in smaller doses, say, 10 or 12 m of the solution, although I should myself never hesitate to use 15 m in a violent case. In my hands 10 m has *occasionally* failed to cause emesis, but never to cause sleep. It has been stated that apomorphine fails of its emetic effect in alcoholism. This presumably refers to the

deep coma caused by acute alcoholic poisoning; for in ordinary alcoholic conditions it is difficult to avoid the production of emesis. Certainly 15 m of the solution is always efficient both as an emetic and as an hypnotic.

During a paroxysm of dipsomania, even in the absence of intoxication, apomorphine is of great utility. In minute doses it is much more rapidly efficient in stilling the dipsomaniac craving than strychnine and atropine. Four or even 3 m of the solution usually checks for some hours the incessant demands of the patient. Commonly the first effect observable is a slight sensation as of the commencement of sea-sickness, accompanied by a little facial pallor. Any feeling of nausea, however, is evanescent, and is followed by an hour or so of sleep. This result is almost unfailing. The first case in which apomorphine was used for the dipsomaniac craving is illustrative :

A gentleman, aged 40 years, was brought to the sanatorium in a state of very advanced intoxication. He slept well throughout the night. In the morning he was quite sober, but craving for alcohol, which craving continued all day. Had he not been supplied with some whiskey he would have bolted. In the evening he became more insistent, ringing his bell every ten minutes, and imploring for whiskey. At 10 p.m. he told me that unless he were liberally supplied with whiskey he would be tramping about the house all night. I then gave him 6 m of the apomorphine solution hypodermically. In a few minutes he suddenly became a little pale, and his manner entirely altered. He said, "That seems to have made me a little squeamish, but I am quite sure I am going to have a good night's sleep. You need not trouble about that whiskey."

I remained for half an hour talking to him on commonplace subjects, then, as he was obviously drowsy, I said "Good-night." I heard no more of him until the morning, when his dipsomaniac paroxysm was over.

A single injection of apomorphine will not by any means always terminate a dipsomaniac paroxysm in which the patient has already commenced to drink. When he awakes from the apomorphine sleep he may still be demanding alcohol, though he is never then so insistent as before. Accordingly it may be necessary to repeat the dose, and even to continue to give it twice or three times a day—occasionally even more frequently—for a day or two. Such repeated doses, however, do not require to be so large: 4 or even 3 m is usually sufficient.

In dipsomaniac attacks which are only impending, the action of the drug is much more efficient and lasting: often one non-emetic dose is enough to avert the whole paroxysm. This was shown very clearly in the case of a gentleman who remained for three months in the sanatorium. The attacks occurred with great regularity, at first every seven, later every ten days, usually in the morning or early forenoon. He would then say of himself that he was "seething with excitement." On each occasion he was directed to lie down for an hour and have 5 m of the apomorphine solution hypodermically. After this he would usually doze for about ten minutes, and the effect was always most marked when this happened. When he arose he would be mentally stable and apparently safe until the onset of the succeeding attack, seven or ten days later. In this case, the paroxysms, having been successfully aborted

for seven or eight weeks, ceased to recur; and six months later the patient remained well. Unfortunately so lasting a result is by no means the rule in cases of true dipsomania.

In one form of insomnia, a minute dose of apomorphine—4 to 5 or perhaps 6 m of the solution—is an ideal remedy if given under the right conditions. The form of insomnia referred to is that in which the patient is unable to go to sleep. He may have felt more or less drowsy all the evening, and yet immediately he lies down he is wide awake, and remains so for hours. On the other hand, whenever with some assistance he can once go to sleep, he remains asleep, and puts in an excellent night's rest. Apomorphine seems to be just the assistance required in such cases. The patient must not only be in bed, he must be in the exact position in bed in which he is accustomed to sleep. Then the injection is given, and he must make no movement subsequently. Otherwise he may miss his opportunity; for the effect of the drug is evanescent. Usually he is asleep within a quarter of an hour, often much sooner. But should he still be awake in half an hour, the injection should, I think, be regarded as a failure. The apomorphine sleep does not in my opinion last more than two or two and a half hours, though the patient may remain asleep all night. Consequently, the majority of the hours during which he has slept have been passed in *natural* sleep. This doubtless accounts for the fact that the patient on awaking in the morning is far fresher than he would have been after sleep induced by any other drug.

What has been described as "alcoholic insomnia" (p. 119) is the insomnia which affects chronic alcoholists while they are still drinking: the patient can go to sleep by taking alcohol, but he soon wakes and can return to sleep only by taking more alcohol. In this form apomorphine alone is useless, unless the physician is prepared to repeat the injection once or twice during the night. But when he is being tapered the chronic alcoholic often develops the other form of insomnia. In addition to being unable to remain asleep, he may now find it impossible to go to sleep in the first instance. Here apomorphine is of use; but to make it of *much* use it should be combined with some other hypnotic of more enduring action. Hyoscine may be given in the same injection; or veronal, etc., given by the mouth at the same time as the injection. In this latter case, the veronal or other similar drug begins to act before the apomorphine has ceased acting, and a very satisfactory night's sleep is obtained. But there often arises a practical difficulty in following this course: the apomorphine may cause emesis, and so lead to the partial or complete loss of the more enduring hypnotic. Undoubtedly a great desideratum is a slowly acting hypnotic with an enduring influence, which could be given hypodermically and so in combination with apomorphine. Morphine is a bad hypnotic, and is, moreover, objectionable in alcoholism on many grounds.

In all cases of insomnia the advantages of quiet cannot be over-estimated. And much of the success met with in the sanatorium is certainly due to the site and surroundings of the institution. The house

is in the centre of the grounds, and the grounds occupy ten or eleven acres in the centre of a large private park, through which there is no general thoroughfare. Consequently there are no night noises, such as motor horns and motor buses: the worst night sound is that of a distant railway whistle.

Apomorphine has been recently recommended as a hypnotic in delirium tremens. I cannot myself confirm its value in this complication. In the one or two cases in which I have used it, it has proved of little or no use. But the fact is that by the time the hypnotic action of apomorphine had been fully recognised, cases of delirium tremens had ceased to occur in the sanatorium: the recognition of the causation of the complication had resulted in effectual prophylaxis.

Bromide of sodium.—In all cases, except those who have ceased taking alcohol for a week or more before entering—cases, that is, which have already “turned the corner”—the bromides are useful. They are especially indicated in patients who are undergoing tapering. By counteracting the tendency to exaggerated reflex activity, always present in these circumstances, they enable this process to be accelerated; and if taken systematically throughout the day, go far towards ensuring a restful sleep at night. Formerly the potassium salt was used in combination with ammonium carbonate, but in a few cases signs of cardiac weakness followed the rather prolonged administration of large doses, the only doses of any material value in alcoholism. Consequently the sodium salt is now exclusively employed. It is given according to the following prescription :

℞ Sodii bromid.	gr. lx
Choloformi	ʒj
Liq. capsici conc. (Fletcher)	ʒj
Aquæ ad	ʒss

To be given every eight, six, or even four hours in water.

The addition of capsicum tends to afford some immediate relief from the sensation of epigastric "sinking" which is so often complained of and which in so many cases constitutes an essential item in the alcoholic craving.

After a day or two the dose of the above mixture is halved, and later reduced to a quarter; but this is continued until the patient is sleeping moderately well throughout the night without the aid of alcohol or any special hypnotic.

Patients intolerant of the bromides are rare: in only a few has acne developed, and the eruption has quickly subsided on the withdrawal of the drug.

Special hypnotics.—In addition to apomorphine and bromide of sodium (the latter hardly a hypnotic), the list includes veronal, trional, sulphonal, paraldehyde, chloral hydrate, and hyoscine hydrobromide. It is a long one, and my clinical acumen is insufficient to judge of the respective values of these drugs, and to state definitely which is the best. Nor can I say that this one is most efficient in this case, or in this set of circumstances, that one in that case, or in that set of circumstances. Nevertheless, there is a reason for the length of the list. The above does not, however, refer to hyoscine, for which there are special indications.

It may be stated as a general rule in alcoholism that hypnotics, unless given in adequate doses, are injurious. To insure sleep the largest dose *compatible with safety* is indicated. Now idiosyncrasy plays so dominant a part in the action of all these drugs that in prescribing one for a new patient it is impossible at once to hit on the largest safe dose. This difficulty is usually obviated by giving him his accustomed hypnotic drug; for in many cases the patient has had such prescribed for him by his own medical attendant, and he knows, not only the name, but the dose of the hypnotic used.

Incidentally reference may be made to the inexpediency of allowing patients—more especially inebriate or alcoholic patients—to learn the names and doses of hypnotic drugs. Practically all of these can, and do, set up drug habits; and all such drug habits could have been prevented by concealment. It seems to me that medical men, even those who do not dispense, could easily prevent this dangerous knowledge. Nearly all hypnotic drugs are prepared in tablet form, and such could be supplied by the physician himself with but slight inconvenience.

Indirect suggestion is markedly valuable in many cases of insomnia; and a 5-gr. tablet, specially manufactured to be indistinguishable in appearance from one of veronal, etc., but consisting merely of sugar of milk, has proved of great practical utility in the sanatorium. It is sometimes used in conjunction with the hypnotic tablets mentioned in order to mask decreasing dosage: sometimes alone in patients of a certain temperament. Many have slept excellently every night for weeks together provided they took

two of these tablets on going to bed, but suffered promptly from insomnia whenever their "sleeping tablets" were omitted.

Strychnine, atropine, cinchona rubra and gentian.—The first two of these drugs are given both by hypodermic injection and in the form of a mixture, the last two in mixture only.

The solution of strychnine for hypodermic use is :

Strychnine nitrat. gr iv

Aq. distillat. ad ʒj

Dose, ʒ ij to ix or x.

The solution of atropine for hypodermic use is :

Atropin. sulphat. gr. j

Aq. distillat. ad ʒj

Dose, ʒ j to viij or ix.

The prescription for the mixture, commonly spoken of as the "tonic," is :

Liq. cinch. conc. (Fletcher) . . . ʒ xxiv

Liq. gentian co. conc. ,, . . . ʒ viij

Sol. strych. nit. (gr. iv ad ʒ j) . . . ʒ j

Sol. atrop. sulph. (gr. j ad ʒ j) . . . ʒ j

Glycerini ʒ j

Aquæ ad ʒ ss

To be given three to five times daily diluted with water.

The injections and mixture may be used in two different ways, and with two partly different objects.

(1) They may be used for the purpose of breaking the patient off from drinking, as well as for maintaining him for a time in a state of indifference as regards alcohol. This was their original mode of use in the sanatorium. On admission the patient was at once put on the injections and the mixture. Five minims

of the strychnine solution and two or three of the atropine solution were administered in the one injection immediately after breakfast, luncheon and dinner: at the same time the mixture was commenced and given three to five times a day and continued throughout unchanged. Every two or three days the doses of strychnine and atropine solutions in the injections were raised by m j , until the physiological effects of the drugs—slight muscular twitchings, increased reflex activity, dilatation of the pupils and dryness of the mouth and fauces, were apparent. The maximum doses of the two solutions would vary, but they would rarely exceed m x of the strychnine and m viij of the atropine solution.

Having arrived at the maximum, the dosage would be steadily reduced each day, but the atropine would be reduced more rapidly than the strychnine, so that at the end of from eighteen to twenty days the patient would be having strychnine only injected. This would then be continued in doses which varied with circumstances.

Under this plan the desire for alcohol steadily subsides. Indeed, upon its success depends most of the evidence which goes to show the efficiency of these drugs in alcoholism. Moreover, there is no doubt that the plan leaves a deep and rather lasting impression on the patient. But it has counterbalancing disadvantages. In some few cases delirium results (three in this sanatorium). As to the exact nature of this delirium—whether it is to be regarded as atropine delirium, or as delirium tremens modified by atropine—there remains some doubt. Also it is uncertain which of the two factors—the strychnine

and atropine injections, or the rapid cessation of drinking which results from these injections—is chiefly responsible for the delirium.* The majority of cases, of course, escape delirium; but even then there are apt to arise distressing nervous symptoms, such as increased tremulousness of the muscles, insomnia and a vague, but none the less real, feeling of apprehension, especially at night, which last may demand the constant services of a special attendant for a time. These unpleasing effects seem inseparable from the use of moderately large doses of strychnine and atropine *in patients who are still drinking*, and whose nervous system has been for some time weakened and disarranged by continual soaking in alcohol: they have always arisen in some degree whenever the above method has been revived in the sanatorium. Nevertheless, they are a source of worry and anxiety to the staff rather than of danger to the patient; and I am inclined to think that in private practice, where the patient remains in his own home amongst his accustomed surroundings, and where, consequently, the physician has little to depend upon but the drugs and his personal influence exerted at intervals, this bolder method will in most cases yield the better results. Many medical men are using strychnine and atropine for alcoholism in the patients' own homes, and are kind enough to keep me informed from time to time as to their results. And I have been struck by the fact that in the unsuccessful cases (which are, of course, quite frequent) the almost uniform cause of ultimate

* In one of the three cases mentioned the delirium was undoubtedly an atropine delirium.

failure has been failure to obtain a satisfactory start: patients who have been successfully weaned from drinking have done, on the average, well. It may be better, therefore, in private practice to risk discomfort and additional trouble, even the chance of an attack of delirium, in view of the greater probability of tiding the patient over the most critical period in his treatment.

But in a sanatorium specially organised for the management of alcoholism such considerations have little weight. Patients are surrounded by so many safeguards, they can be influenced in so many different ways, that the danger of failing to make a satisfactory start is negligible. Besides which we have a much more rapidly efficient, though less enduring, drug in apomorphine. One can well afford, therefore, to avoid all risks of complications, and at the same time to consider the comfort and convenience of those concerned, both patients and staff. All these objects have been attained during recent years by adopting the plan now to be described.

(2) Only in patients who have quite ceased to take alcohol for a week or several days before admission, and who are eating and sleeping without artificial aids, are the injections and cinchona mixture commenced at once. In all others the preliminary treatment is as already described under various heads. Only after two or three days of complete abstinence, and then only when the patient has enjoyed one good night's sleep without hypnotics—in fact, only when the patient has already “turned the first corner”—is the systematic course of injec-

tions and cinchona mixture commenced. Moreover, other precautions are taken: the mixture is commenced on the first day, the injections only on the second: the initial doses of strychnine and atropine are much smaller, the rise in dosage more gradual, the maximum lower. At the same time the whole course extends over a longer period. *Under this revised plan—which is equally efficient as regards results—complications and distressing symptoms are unknown.*

The following scheme represents the dosage of an average case:

First week.—Gradual rise up to $\text{m}\nu$ strychnine solution and 4m atropine solution.

Second week.—Continued rise up to $\text{m}\nu\text{ij}$ strychnine solution and $\text{m}\nu\text{j}$ atropine solution.

Third week.—Doses maintained at about $\text{m}\nu\text{ij}$ strychnine solution, and $\text{m}\nu\text{j}$ atropine solution.

Fourth week.—Dose reduced to $\text{m}\nu\text{j}$ strychnine solution and $\text{m}\nu$ atropine solution.

Fifth week.—Dose reduced to $\text{m}\nu$ strychnine solution and miv atropine solution.

Sixth week.—Gradual reduction of dosage down to mij and mj respectively on the day of leaving.

In the case of patients who remain in the sanatorium for eight, twelve, or more weeks—cases recently becoming much more numerous—the graduation scheme is modified and extended accordingly. Sometimes the injections are then omitted for a week and then recommenced, or they may be given on alternate weeks; or again, less frequently during the day.

With the dosage described, it is rare for idiosyncrasy to call for any modification. Theoretically,

atropine might conduce to glaucoma; and it is well, therefore, to test the tension of the eyeball in elderly persons. The larger doses of atropine occasionally cause cutaneous irritation: when this is so severe as to cause loss of sleep (the irritation is always worse at night) the atropine is omitted from the *evening* injection. Again, some patients are unusually intolerant of strychnine: in them the drug, even in quite moderate doses, may cause so much increase of reflex irritation that sleeplessness results. In such it is necessary, and nearly always sufficient, to omit the strychnine from the evening injection, and there are other less common occasions calling for modification in the composition of the injections. For example, in a *few* patients anything but a quite small dose of atropine causes temporary confusion of thought, forgetfulness, and occasionally mental depression. It may be as well to point out also that given *just before* meals this drug interferes materially with the digestion of starch, through its action in checking the secretion of saliva. Finally, it is to be remembered that strychnine is cumulative and may have to be omitted occasionally. Atropine, on the other hand, seems to lose its influence somewhat through continued use.

As regards the tonic mixtures there is, so far as I am aware, only one idiosyncrasy which may call for its omission or alteration. There are a few persons in whom cinchona (or even quinine) in any form always produces dyspepsia. Three such patients have come under notice in the sanatorium in the last six and a half years.

Reference may here be made to the great

superiority of the hypodermic over other methods of drug administration. Absorption is rapid and certain: one knows exactly when the physiological influence of the drug will have reached its maximum, and when it will, for all practical purposes, have ended. Were the drugs given by the mouth, one would often be constrained to omit them for a day or two, instead of for a few hours. A final advantage is the suggestive effect: this is by no means inconsiderable.

There is a prejudice amongst some members of the profession against the use of the hypodermic needle in the case of alcoholists: one medical man is accustomed to state as his opinion that anyone giving a hypodermic injection to an alcoholic inebriate deserves to be shot! There is no need to question the sincerity of those who hold these views, but it is open for us to ask for justification. Does not the whole argument arise from a confusion of thought? It is, of course, admitted by all that morphine euphoria comes on more rapidly and is more intense (in proportion to the dose) when the drug is administered hypodermically. And it may further be admitted that morphinists do "fall in love" with the needle. But it is silly to contend that the same occurs in patients whose experience of hypodermic medication is limited to drugs like strychnine and atropine, which, so far from causing euphoria, act, if anything, in an opposite direction. And, indeed, experience teaches that such patients tend to acquire a dislike to the hypodermic needle.

Apomorphine, on the one hand, and strychnine and atropine on the other, have both their places in the treatment of alcoholism. The outstanding ad-

vantage of apomorphine is the exceeding promptness of its action, whether given in large emetic, or merely small and perhaps barely hypnotic, doses. To alter completely the whole mental aspect of the case by means of apomorphine injections is only a matter of minutes, and this whether emesis and sleep are induced or not. Now, in order to afford relief from the alcoholic craving by means of strychnine and atropine injections, two or three days at least of steady medication are required. The difference is remarkable. Nevertheless, there is something to be said on the other side. As against the unfailing promptness of its action must be placed the evanescence of the effects of apomorphine. Although in some cases six or even eight hours' sleep follows an injection, yet, as I have said, I do not believe that the hypnotic effect endures for more than from two to three hours. Hence its utility in insomnia is limited to those cases in which the difficulty consists in an inability to go to sleep—not to remain asleep. And the *freedom from the dipsomaniac craving* conferred is equally fleeting. Hence the necessity for frequent repetition. On the other hand, the steady diminution in the desire for alcoholic narcotisation set going by strychnine and atropine is much more enduring. Generally speaking, however, the more the patient's craving approximates to the dipsomaniac craving, the more is it expedient to rely on apomorphine as against other drugs.

Morphine tartrate.—Rarely, indeed, can there be any valid excuse for prescribing morphine, especially hypodermically, in cases of alcoholism, whether

inebriate or sober: the dangers inseparable from the use of this drug are too great. But emergencies do arise in which a morphine injection may fairly be regarded as the lesser of two evils, one of which is inevitable. Such emergencies, I imagine, are less frequent in sanatorium than in private practice. A medical practitioner may suddenly be called upon to look after a dipsomaniac, who for the time is highly dangerous to others, or, again, to a patient suffering from *mania à potu* who is always more or less dangerous; and it may be that adequate assistance in the shape of male attendants is not available. Again, a dipsomaniac or pseudo-dipsomaniac patient may suddenly fall into a state of acute melancholia, in which condition he is highly dangerous to himself; and here also adequate protection by others may be unattainable. In such emergencies full doses of morphine, given hypodermically, combined or not with other drugs more efficient as hypnotics, may save the situation, and even avert a tragedy. I believe it is a fact that suicide in a patient who is fully under the influence of an opiate of any kind is practically unknown; and, from my own observation, I have little doubt that the homicidal inebriate can be rendered temporarily harmless to others by adequate morphinisation. Probably, however, apomorphine is in this case more prompt and temporarily efficient.

But it is obvious that morphine should be regarded solely as a *pis aller* in emergencies. And when so used the name or nature of the drug must never be divulged. In the few cases in which I have been driven to use it, I have usually combined with it in

the one injection a slightly emetic dose of apomorphine. The green colour of the mixed solution as well as the immediate unpleasant effects of the injection suffice to prevent suspicion of the character of the drug from leaking out. Moreover, such injections have always been given by myself: I have refrained from trusting the name of the drug even to the trained nurse, male or female, in charge of the case.

Rationale of the action of drugs used in alcoholism.— It is assumed by some that drugs are necessarily useless for the purpose of combating the alcoholic craving, which they consider essentially a moral disorder. Such a standpoint seems unscientific. Alcoholism cannot be proved to be solely a moral affection. Nor would it of necessity follow that drugs are useless if it could be so proved. At any rate, it is certain that, without the unrestricted right to the use of drugs, any attempt to carry on a sanatorium in which all the patients retain the full rights of citizenship would be futile: the institution would shortly be empty, or nearly so.

The beneficial action of most of the drugs employed is quite obvious, even to the unskilled and superficial observer. This applies to alcohol, apomorphine, bromide of sodium, capsicum, the various hypnotics, and to morphine. But it is questionable whether their action in any instance can yet be fully explained on physiological lines. On the other hand, the beneficial action of the course of strychnine and atropine injections, as they are at present given, is not so obvious—though it was obvious enough when these drugs were given from the commencement according to the first of the two methods described

(p. 227). I can only say that I ascribe an appreciable part of the freedom from the wish for alcohol which patients undoubtedly experience while in the sanatorium, and especially in the latter stages of their course of treatment, to the physiological influence of these drugs systematically administered. And in making this statement I do not ignore the influence of the regularity of attendance incidentally necessitated by the injections, nor the influence of the patient's belief in the efficacy of the injections. Deprived of these influences, physiological and psychological, I am convinced that nothing like the amount of personal liberty which patients now enjoy, could be safely permitted.

DURATION OF TREATMENT; QUESTION OF AFTER-TREATMENT; PARTING ADVICE.

One of the primary objects of the Norwood Sanatorium is to induce patients to enter as early as possible in the progressive development of the habit or disease of alcoholism; a short term in an early stage is more likely to be of permanent benefit than a longer term subsequently. To this end, no effort is spared to meet and defeat in advance the objections to institutional treatment which are inevitably proffered by alcoholists, more especially incipient alcoholists. Prominent amongst such objections is the plea that the necessary time cannot be afforded. Hence, it happens that the duration of treatment in the sanatorium rarely approaches the ideal. It is regulated far more by the time at the patient's disposal than by the advice of the physician. And

generally it must, I think, be regarded as inadequate : at any rate, inadequate for the best result we should be justified in anticipating. Nevertheless, it is expedient to have a *minimum period*, and this of recent years has been fixed at six weeks. Of course, many patients are accepted for shorter periods ; but always more or less under protest, and after full explanation.

After a very few days (the number of which varies within narrow limits), counting from the date on which he received his last dose of alcohol, the patient will express himself as absolutely well, and entirely free from all desire for alcohol. Further, he is then convinced in his own mind that he will always in future remain a total abstainer ; and often some difficulty is met with in persuading him that further residence is necessary. Obviously, were the patient's judgment on this point sound, further residence *would* be unnecessary, and the average duration of treatment in the sanatorium would be something between a fortnight and three weeks. But his judgment is wrong, for it is a matter of experience that patients who leave at this stage almost invariably relapse, and relapse quickly ; whereas he who remains for several weeks subsequently, although he may exhibit no obvious alteration in his condition, has an average chance (see statistics) of remaining an abstainer after leaving.

For a considerable time I failed to discover the reason for the discrepancy. Something had to be allowed for the extended experience of alcoholism which the patient gained through remaining in the sanatorium and associating with others of his kind ;

but this alone seemed inadequate. Now the reason, though not very manifest, is simple. On close inquiry, it will be found that the complete freedom from the desire for alcohol which begins—often quite suddenly—a few days after absolute abstinence has been instituted, is *not entirely continuous*. A patient may have two or three days on which he wonders why he ever “touched the beastly stuff,” and yet on the fourth he finds himself regarding an alcoholic drink of some sort as decidedly less undesirable: he has, in fact, a renewed “hankering” after liquor. This does not last long, however; and next day, perhaps even later in the same day, he reverts to his previous attitude of entire indifference. Subsequently, perhaps in a week, he may again find himself pondering on the subject of alcohol. On this occasion, however, he recovers more rapidly. And later, again, he may experience a third, or even a fourth, attack of this mild kind of desire. But each will be less severe, less prolonged, and separated from the preceding one by a longer interval. It is no doubt on one of these recurring days of weakness that the patient would have relapsed had he left the sanatorium when he first felt free from the alcoholic craving; and it is on their account that it is essential for him to prolong his treatment for several weeks. Incidentally, it may be mentioned that the same recurrence of the craving, but in much more marked degree, occurs in morphinists who have recently been weaned from their accustomed drug.

An exception to the rule that patients should remain at least six weeks is made in the case of some true periodic dipsomaniacs. In those rare examples

of this variety of alcoholism in which the intervals are exactly equal, and in which consequently it is possible to fix beforehand the exact date on which the succeeding paroxysm will commence, it is often expedient for the patient to leave after a fortnight and re-enter for other fortnights as often as may be necessary. After a fortnight's residence, the patient, though not perhaps at his best, is probably safer from the danger of relapse than he will be subsequently. He is certainly safer than he will be at the near approach of the time when his next paroxysm is due. By entering just before the time of the expected paroxysm, or on the earliest indication of the commencement of the premonitory stage, he can count upon each attack being completely aborted. And it is conceivable that, after he had remained free from paroxysms for a certain time, the tendency to recurrence would be broken.

Even in true periodic dipsomania, however, it is an open question whether the patient on his *first* admission to the sanatorium should not remain for a full course of six, or even more, weeks. For several cases have occurred in which this plan has resulted in the omission of his succeeding attack, or even his two succeeding attacks. It would seem from this that the periodicity of dipsomania is not always so inevitable as we are inclined to think. At least, it encourages the hope that this rare affection will not always be so hopeless as now appears.

Question of after-treatment.—How it has arisen it is difficult to say, but there is a very general idea that, on the completion of the course of treatment in the sanatorium, there should succeed some sort of

“after-cure.” Apparently it is thought that the sanatorium course is in some way debilitating, and requires to be followed and counteracted by a further tonic course. The “after-cures” thought of vary widely. Sometimes prolonged residence with a medical man, or in an institution where no drugs are used, is suggested; or a trip to the seaside or some inland watering place. Others, again, seem to have great faith in a long sea voyage. This last may be straightway condemned without hesitation or qualification. I speak here from ample experience. Only in one instance have I known a sea voyage result in anything but failure and retrogression. Except in the case of a strictly teetotal ship, now by no means easy to find, the patient is always worse at the end of his voyage than at the beginning—a result which could be safely predicted by all who are familiar with the social conditions of life aboard ship. Indeed, many a moderate drinker habitually indulges to excess whenever he travels by sea.

The fact is that the sanatorium course of treatment requires no “after-cure”: the course itself is tonic in effect. And I am convinced that, on the average, that patient does best who, on leaving this institution, goes straight back into harness and starts at once, *con amore*, to regain some of the leeway for which his habit has been responsible. It is unfortunate in many cases that no harness is awaiting him. He has lost his billet, and on leaving the sanatorium is forced to start anew. In all such cases it is in the last degree important that the arrangements for his future *should be completed as far as possible while he is still in the sanatorium*. Far better is

it for the ex-alcoholist that, while subject to this most severe of tests, he should still be protected in so far as is possible, by continued residence in a sanatorium; for there is no doubt that he is much less prone to relapse there than elsewhere.

Parting advice.—Originally it was customary to arrange for a somewhat prolonged interview with the departing patient. Much well-meaning advice was tendered him on these occasions, and the details of his subsequent daily life were rather closely gone into. But it is to be doubted whether much was ever gained by this. When all has been said, there is but one point which it is essential for the ex-alcoholist to have always before him, *which is to avoid the first drink*. This sentence should stand out before him in the very boldest relief. And it would seem that to dwell on any other point is but to blur the importance of this one essential. Long experience shows that practically all ex-alcoholists (except some true dipsomaniacs) have sufficient will-power to avoid the first departure from strict abstinence, for the antecedent craving—if it can be called a craving—is but trifling. This is the all but unanimous verdict of those who have relapsed. On the other hand, experience shows with equal clarity that practically no ex-alcoholist has sufficient will-power to avoid the second drink (although, of course, he may defer it). The inference is obvious. And I think it is expedient that the last word of the medical superintendent should be—“Never forget for a single instant the vital necessity of avoiding the first drink.” Moreover, in order to impress this the more deeply, I have quite seriously suggested that should he at any

time be so unfortunate as to have taken this first glass, he will be well advised to return to the sanatorium by the first train if possible, and remain for a time, if only for a few days.

In this way he will save much worry to his friends and much misery to himself. Besides which, this will almost certainly be the most economical course. Occasionally, I am pleased to be able to report, this advice has been acted upon and fully justified by the results.

CHAPTER IX

General results—Fallacies: incomparability of results; incomparability of data—Statistics: percentage of relapses, of cases stated to be improved, and of abstainers; known duration of abstinence following treatment; results in individual patients—Some factors bearing on prognosis: heredity; sex; age; form of alcoholism.

ONE of the chief sources of fallacy in medical statistics, namely, *paucity of data*, does not materially affect statistics of alcoholism: the data offered are practically always sufficiently numerous. Two other sources of fallacy, however, do interfere seriously with the conclusions which might otherwise be drawn. These are (1) incomparability of results, chiefly dependent on varying interpretations of the word "cure"; and (2) incomparability of data or clinical material, dependent in the main on the varying conditions under which different series of patients come under treatment.

To the intending patient or patient's friend making preliminary inquiries at the sanatorium, it seems a simple matter to answer the inevitable question, "How many do you cure?" In reality this question is unanswerable except with numerous reservations, and then only after prolonged explanation. A celebrated divine once delivered a sermon

entitled, "The terrible imposture and force of words." I do not know that he selected the word "cure" as one of his illustrative examples, but I am sure he could have chosen none better for his purpose. Applied to any disease or accident, the term bears numerous interpretations, while in the case of alcoholism, it is used in so many different senses that it is always doubtful whether any two parties to an argument on this subject have in mind anything like the same result. A few of the different interpretations of the word may be mentioned.

(1) The term is often used to indicate a system of treatment irrespective of the result of that treatment, as in the "grape cure," the "water cure," etc. I am often asked to describe the nature of the "sanatorium cure." Obviously the inquirers mean *treatment*.

Used in this sense the proportion of patients "cured" in the Norwood Sanatorium would, of course, be 100 per cent.

(2) A patient, who for many months or longer has been drinking hard, and is quite unable to cease doing so, enters the sanatorium. In the course of a few weeks (six or eight) he has not only ceased to take alcohol, but is enjoying his food, and is sleeping well throughout the night without hypnotics; and that even in spite of the use of drugs, the tendency of which is rather to prevent sleep. The albuminuria present on admission has cleared up, all his functions are being normally performed, and he has regained his pleasure and interest in life. Moreover, he confidently states that he has not the least inclination to resort to alcoholic stimulation, and

intends never to do so again. A few patients even at this stage state that they have acquired an actual distaste for alcohol in any shape or form.

Many refer to such a case as a "cure," meaning thereby that the patient has been "cured" of his craving for alcohol. Should he later on relapse into drinking, they say he is suffering from another attack of alcoholism, or has re-created his craving and requires to be "cured" again. No doubt, in a sense, this is true. Those so using the word point to cases of rheumatism, gout, eczema, and other recurrent affections. They argue that no one would refuse to apply the term "cure" to successfully treated attacks of these disorders, simply because the patient might probably suffer subsequently from a second or third attack.

Used in this sense of the word the proportion of patients treated in the Norwood Sanatorium for periods varying from six to eight or more weeks, and "cured," would be over 90 per cent.—an excellent advertisement in its way.

(3) Many hold, however, and with reason, that it is comparatively easy for a patient to remain an abstainer while he is in the sanatorium surrounded by safeguards, moral and other. They maintain, therefore, that it is not correct to consider him "cured" until some time after he has left the institution—until, that is to say, he has shown that he can withstand the influences which originally conduced to his habit. The question then arises: what further time should be allowed to elapse before it is fair to pronounce him "cured"? Herein no two seem to agree. Some say three, others six, nine, or

twelve months. Others, again, hold out for two years, and yet others for three, four or five years. Obviously, the duration of this observation period is purely arbitrary. Consequently the statistical statements of different physicians, lay observers and institutions are rarely, if ever, comparable. What is quite certain, however, is that, other things being equal, the longer the period of observation accepted as adequate, the smaller the percentage of "cures." Thus, in the statistical results of the Norwood Sanatorium, it will be seen that there is a wide variation in the percentages of those who remain abstainers at three, six, nine and twelve months respectively, counting from the date on which they left the institution.

(4) The three definitions above indicated depend upon the simple fact of total abstinence for a shorter or longer period: they take no notice of the patient's feelings or frame of mind during his abstinence. He might, for example, crave for alcohol more or less every day or from time to time, and yet remain an abstainer through the exertion of his power of will. Nevertheless, he would be entitled under the definition to be written down a "cure." Now it might reasonably be claimed that such a result hardly deserves the term. Therefore we should have to add to the fact of abstinence a note to the effect that all craving, or even desire, had been, and still was, in abeyance.

I am unable to give figures showing the percentage of "cures" under this more limited definition of the term. No doubt, however, it would be smaller than the percentage of all those who remain abstainers

It would not be *much* smaller, however, for certainly in the great majority of instances in which he is attacked by the craving for alcohol, the ex-inebriate abstainer succumbs thereto. Fortunately, in point of fact, he is quite rarely so attacked, so long as he continues to abstain.

(5) In all the four definitions above indicated, it is assumed that a patient who remains a total abstainer is convalescent from the habit or disease of alcoholism: it is admitted that his continued freedom depends absolutely upon the condition that he never takes alcohol in any form. But it may well be questioned whether we have any real right to consider such sharply conditioned freedom from alcoholism as a *cure* of alcoholism. For my part, I think we have no such right. To my mind, an alcoholic could be said to be cured only (a) if he has fully recovered from the numerous tissue degenerations and physical and psychical weaknesses which he had acquired: (b) if he remained free from any special desire for alcoholic euphoria; and further (c) if he had re-acquired the capacity to indulge in alcoholic beverages in moderation from time to time, *without the least desire to indulge therein to excess, or even to continue the indulgence.*

Accepting this last definition of the term, it can safely be asserted that no alcoholic is ever cured—the proportion of patients “cured” in the Norwood Sanatorium at any rate is 0 per cent.

It is clear, therefore, that the term “cure” is used in such extremely diverse senses that, when applied to the sanatorium results, the proportion of “cures” is found to vary from 100 per cent. to 0 per cent. Could there be

any stronger reason for abolishing the use of the term *in toto*? I think not. At any rate, that is the course which has been adopted in compiling the statistics which follow.

At the same time, many other of the terms applied to the results of treatment in alcoholism seem even more objectionable: examples of these are words like "improved" and "doing well." Such have really no clear meaning at all. For with the *rarest* exceptions, alcoholists after treatment either remain abstainers or frankly relapse into their former condition, if, indeed, they do not always become worse.

The only remaining course, therefore, is to abandon all qualifying terms and divide all past patients into two classes, namely, (1) those who were still abstainers at the date of the last information; and (2) those who have relapsed at a certain date. This is the course which has been followed, with the exception that it has been found necessary to retain a third place for those who are *stated* to be improved. This third class, however, is so small as hardly to affect the results, and it may be regarded as due in the main to inadequate or imperfect information.

The statistical fallacies arising from varying interpretations of the term "cure," may be looked upon as *fallacies due to incomparability of results*. The other equally serious source of fallacy arising from *incomparability of material or data* may now be considered.

Whether a disease or not, alcoholism (as already pointed out) obeys at least one of the canons which govern disease in general: other things being equal, it is remediable inversely as its duration. Now it is always recognised that alcoholists as a class are very

averse from admitting that they have acquired a craving for alcohol. It is not until they have made several futile attempts to cease drinking that they begin to admit their condition, even to themselves. And there may be a long interval between that stage and the next at which they are prepared to make the same admission to others. Even when they have arrived at the latter stage, they may still be unprepared to consult a medical man, more especially the family medical man. They may perhaps be willing to take some much-advertised nostrum which they can obtain through the post without disclosing their identity. But only when this also has failed will they consent to see a physician. And even then they will usually insist upon being treated in their own home.

Treatment, in these circumstances, may or may not be successful. But it is certain that, until it has failed, most patients will not consent to enter any kind of institution, even one where they are under no legal compulsion. Finally, if it takes so much time, so much consideration, and the experience of so many failures, to induce them to enter a voluntary sanatorium, it stands to reason that the time when they will consent to sign away their liberty under the Inebriates Act and enter a licensed retreat will be still further deferred.

Hence it happens that series of patients treated respectively by advertised nostrums, by private medical men, in free sanatoria, and in retreats licensed under the Act, are, on the average, in very *different stages of the habit or disease*. *There is, therefore, a wide variation in their respective prognoses ; and it is*

entirely futile to compare these different series with each other, at least with the object of determining the efficiency of the different methods of treatment adopted in each.

In the statistics which follow, therefore, no attempt is made to compare the sanatorium results with those of other institutions, or with those following other methods of treatment.

STATISTICS.

The figures are arranged with the object of showing as clearly as possible what may fairly be expected from a short period of residence, plus medical treatment, in the sanatorium.

In order to avoid any possible charge of unfair selection of cases, all the admissions into the institution since its re-organisation under the Advisory Medical Committee in 1905 have been included.

Total admitted between the middle of 1905, and December 31st, 1911 .	868
Remaining in the sanatorium on December 31st, 1911	18
Number discharged or died (847 and 3 respectively)	850
Number of non-alcoholic cases	106

The 106 non-alcoholic cases may be classified as follows: Morphine 72, morphine and cocaine 3, cocaine 2, opium and laudanum 4, chlorodyne 1, veronal 2, paraldehyde 1, chloral 1, tobacco 1. The remaining 19 cases were not cases of drug habit. They comprised psychasthenia and neurasthenia 8, neuralgia 2, insomnia 1, dementia, hypochondriasis

and delusional insanity 3, atypical epilepsy 1, gastralgia 1, dyspepsia 1, colitis 1, and chronic bronchitis 1.

Number of alcoholic cases discharged or died (741 and 3 respectively)	. 744
Number of these not treated by the special course for various reasons	. 293

Such reasons were as follows: 186 were cases admitted as emergencies in a condition of more or less acute alcoholism: all these left within a week or two of admission, after having recovered from the outbreak. Most of them were dipsomaniacs or pseudo-dipsomaniacs, and many of them were admitted on several occasions: 39 left prematurely for a variety of reasons, such as business necessities, domestic worries, or lack of means: 23 turned out to be insane and therefore not suited for special drug treatment—many of these were transferred to more fitting institutions: 7 were suffering from serious physical illness on admission, which illness was held to render inexpedient or unnecessary the administration of the special course—2 of these 7 died in the Institution: 4 were requested to leave through refusing to conform to the regulations: 1 was arrested: 12 refused any medicinal treatment: 12 were abstainers on admission—these were old patients who had remained well since treatment and who elected to spend some of their vacation in the sanatorium, partly, no doubt, from precautionary motives; while 9 were more or less permanent boarders.

Number of alcoholic cases more or less fully treated by the special course and discharged 451
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Number lost sight of immediately on leaving	11
Number followed up more or less recently	440

There remain, therefore, 440 cases by which to test the efficiency of sanatorium residence plus the special course of treatment in use during nearly six and a half years ending December 31st, 1911. These 440 cases may be divided into the following three classes :

(1) Cases which are known to have relapsed. These are 200 in number, or 45 per cent. of the whole. In 22 the relapse occurred during the course of treatment in the sanatorium (strictly speaking these cases should be described as failures to cure, not as relapses): in 11, almost immediately on leaving: in 32, in one month: in 13, in two months: in 18, in three months: in 14, in four months: in 12, in five months: in 18, in six months: in 8, in seven months: in 5, in eight months: in 8, in nine months: in 4, in eleven months; and in 11, in one year. In 9 cases the relapse occurred in between one year and one year and a half: in 10 in between one year and a half and two years; and in 5 not until after two years.

(2) Cases stated by their medical attendants, employers or friends to be improved or much improved, but not total abstainers. The number is 12, or 2.7 per cent. of the whole. The reports concerning these 12 cases have been received at the following periods since the patients left the sanatorium: 1 case, three years: 1, one year and eight months: 1, one year and seven months: 2 cases, one

and a half years : 1 case, one year and five months : 1, one year : 1, eleven months : 1, nine months : 2 cases, three months ; and 1 case, one month.

(3) Cases which remained total abstainers when last heard of. These are 228 in number, or 51·82 per cent. of the whole. The most recent reports concerning these cases have been received at the following periods since the patients left the sanatorium : 49 cases, two years and over : 29, between one year and a half and two years : 21, between one year and one year and a half : 20, one year : 2, eleven months : 4, ten months : 8, nine months : 2, eight months : 5, seven months : 12, six months : 4, five months : 10, four months : 14, three months : 14, two months : 24, about one month ; and 10, less than one month.

The above figures call for some explanatory remarks. For the sake of simplicity the term "cases" has been used in the sense of admissions. It happens, therefore, that some patients appear more than once in class 1 : in other words, some patients account for more than one relapse. It also happens that some who appear in class 1, appear again in class 3 : in other words, some patients account for both a relapse and a success. *But it is obvious that no patient can appear more than once in class 3, since all the results there set down are drawn from the last information supplied and from that only.* So far, therefore, the system adopted tends to make the results of the treatment appear a little worse than they really are. On the other hand, many of the patients in class 3 have not been heard of, or from, for some considerable time ; and it is, of course, highly pro-

bable that some of these have already relapsed. To this extent, then, the system adopted tends to make the results of treatment appear somewhat better than they really are.

Class 2 is unimportant, and should not, in my opinion, be regarded very seriously. Some would contend that it should be incorporated with Class 1, —my own sympathies would be with these. But there are some who are prepared to maintain that some of the cases included in Class 2 are more properly to be regarded as “cures” than any of the cases which constitute Class 3. I am always doubtful, however, as to the accuracy of the information supplied in the majority of the cases in Class 2. Since the statistician is altogether dependent on the information supplied—on hearsay evidence, that is to say—it is obvious that the results in this class should be received with caution.

The statistical system adopted is open to many objections, but so undoubtedly in even greater degree would be any alternative system which could be selected. It can at least be claimed for the chosen system that the terms are accurately defined, and that fallacies due to the operation of the personal factor—the personal factor of the statistician—are largely excluded.

Known duration of abstinence following treatment in 428 cases.—By adding together classes 1 and 3 we obtain some idea as to what may be reasonably expected from a single course of treatment in the sanatorium. This is shown in the subjoined column :

No time	22
Less than one month	21

About one month	56
Two months	27
Three months	32
Four months	24
Five months	16
Six months	30
Seven months	13
Eight months	7
Nine months	16
Ten months	4
Eleven months	6
One to one and a half years	61
One and a half to two years	39
Two years and over	54

In considering these figures it must be remembered that in none of the cases has a period of much more than six years elapsed since the treatment terminated: that many cases have been lost sight of, though still abstainers when last heard of; and that many more have not long left the sanatorium.

Obviously it is safe to infer that in any series of 100 consecutive cases fully treated for a period of from four to six weeks, 70 would remain abstainers for *at least* three months, 53 for *at least* six months, 42 for *at least* nine months, and 35 for *at least* one year. The percentage of patients lost sight of after one year increases so rapidly that no useful purpose would be served by proceeding further.

The above figures indicate the *very least* we have a right to expect; for they would remain true even if all the 228 cases embraced in Class 3 and reported as still abstainers, had relapsed immediately after the information was received. This is, of course, a con-

tingency which is not to be entertained. It follows that the actual results are *very much better*—how much better, however, there are no means of determining.

Results in individual patients.—Up to this point the term “cases” has been used in the sense of admissions. The 440 admissions are found to represent 390 separate patients. Of these, 137, or 35·1 per cent., were drinking when last heard of: 10, or 2·6 per cent., were said to be improved; while 243, or 62·3 per cent., were abstainers. It is understood that several of these patients had undergone treatment in the sanatorium on more than one occasion.

SOME FACTORS BEARING ON PROGNOSIS.

A very large number of factors enter into the causation, and hence have a bearing on the prognosis, of alcoholism. Many of these are elusive in their nature, and attempts to deal with them in detail lead merely to psychological tangles. Others are so indeterminate as to make their statistical management impracticable. In a small minority of cases, however, there has been a definite pathological condition which has clearly been the starting-point of the habit. The best known and commonest of these is dysmenorrhœa. Others are asthma, dyspepsia, the innumerable varieties of mental depression, and all the functional disorders which have their starting-point in eye-strain arising from some uncorrected error of refraction. Obviously the prognosis of the alcoholism will depend largely upon the removability or otherwise of such determining factors.

A few conditions, however, which may be regarded

as factors in alcoholism, do lend themselves to statistical treatment. But these are all, with the possible exception of the last-mentioned, irremovable. Such are heredity, sex, age, and the form of alcoholism.

Heredity.—It is generally supposed that the existence of a hereditary tendency to alcoholism renders the prognosis less favourable. Indeed, it is not uncommon to meet sufferers who have given up attempting to abstain because they believed themselves inevitably doomed through the faults of their ancestry. Yet the sanatorium statistics do not support this view. Of the 225 patients with hereditary taint, 77, or 34·2 per cent., had relapsed when last heard of; while of 165 without known hereditary taint, 60, or 36·4 per cent., had relapsed. Thus the results were actually a little worse in the non-hereditary patients. The difference shows, at least, that the existence of a hereditary tendency to alcohol does not of itself render the prognosis materially worse than the average.

Yet heredity is undoubtedly an important factor. And I am inclined to think that its baleful influence is seen most clearly in the clinical histories of patients, especially in the rapidity with which the moderate drinker (for all alcoholists were for a time moderate) evolves into the chronic alcoholic or inebriate—the rapidity of the change between physiological and pathological alcoholism.

Sex.—It is commonly thought that the prognosis in alcoholism is less hopeful in the female sex. This may be generally true, *but as regards the patients admitted into, and treated in, the sanatorium, there is no great difference observable in the results in the two sexes.*

Of the 390 separate patients, 308 were males and 82 females. Of the 308 males, 203, or 65·9 per cent., were abstainers when last heard of: of the 82 females, 50, or 60·9 per cent., remained abstainers. Two circumstances, however, co-operate to improve the ultimate results in the female sex :

(1) The sense of propriety is so much more readily shocked in the case of female alcoholism that women, on the average, seek treatment in an earlier stage of the habit than do men ; and—

(2) After their return home, women are more carefully guarded than men, and alcohol is more easily made inaccessible.

There is, therefore, no reason to abandon the view that alcoholism is in general a less remediable habit or disease in women. *Other things being equal, cases of equal severity and duration* are, in my opinion, of worse prognosis in the female sex ; and this chiefly for the reason that the habit has developed *in spite of an environment hostile to alcoholic indulgence*. Similar considerations, of course, explain the relative *infrequency* of female alcoholists.

Age.—The subjoined table shows the 390 separate patients arranged according to age-periods, together with the respective relapse rates :

Age-periods.	No. of patients.	No. relapsed at last information.	Percentage of relapses.
25 and under . . .	12	5	41·66
26 to 35 . . .	107	46	42·99
36 to 45 . . .	157	45	28·66
46 to 55 . . .	85	31	36·47
56 to 65 . . .	25	9	36·00
66 and over . . .	4	1	25·00

Paucity of data renders it necessary to exclude from consideration the first period and last two periods. Of the three remaining, the best results are seen to be obtained in the decennium between 36 and 45, the next best in the following decennium between 46 and 55. These two decennia together contain the highest proportion of the steady dram-drinking class—a class in which habit, rather than temperament, is the dominant factor; and such patients yield a higher proportion of permanent recoveries for at least two reasons, namely:

(1) Because in temperament they are less impulsive than intermittent inebriates—and it may be stated as a general rule that the less impulsive the form of drinking the more remediable the case; and—

(2) Because they suffer more from physical ailments, and therefore have more to gain in physical well-being. The chronic alcoholic is never well: the intermittent drinker, though often ill, is frequently in the best of health.

The antecedent decennium, 26 to 35, contains a higher proportion of impulsive drinkers—dipsomaniacs, pseudo-dipsomaniacs, and cases approaching in character these forms of inebriety; and, moreover, the mere fact of the patient having arrived at a stage calling for institutional treatment at so comparatively early an age, may be taken as an index of marked inherent or temperamental tendency to alcoholic excess.

Form of alcoholism.—As was to be anticipated the results are worst in pure dipsomania: of the twenty-three patients affected with this variety of alcoholism, twelve had relapsed when last heard of—a percentage

of 52·17. In pseudo-dipsomania and chronic alcoholism, the results are approximately equal. Of the former, there were 122 patients, of whom 42, or 34·42 per cent., had relapsed when last heard of: of the latter, there were 245, of whom 83, or 33·88 per cent., had relapsed.

It is worth pointing out that, although pure dipsomania is quite the rarest form of alcoholism, the above figures do not give a correct idea of its relative frequency: it is considerably commoner than these show. The reason is that most of the dipsomaniac class come in for treatment of the acute condition only, and do not remain long enough to be included in the list of cases fully treated: something between a week and a fortnight is the usual duration of their stay in the sanatorium.

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