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T.N. Kelynack.**

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THE DRINK PROBLEM OF TO-DAY

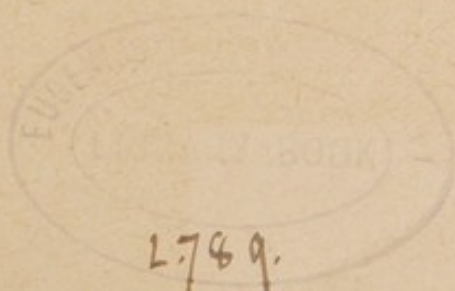
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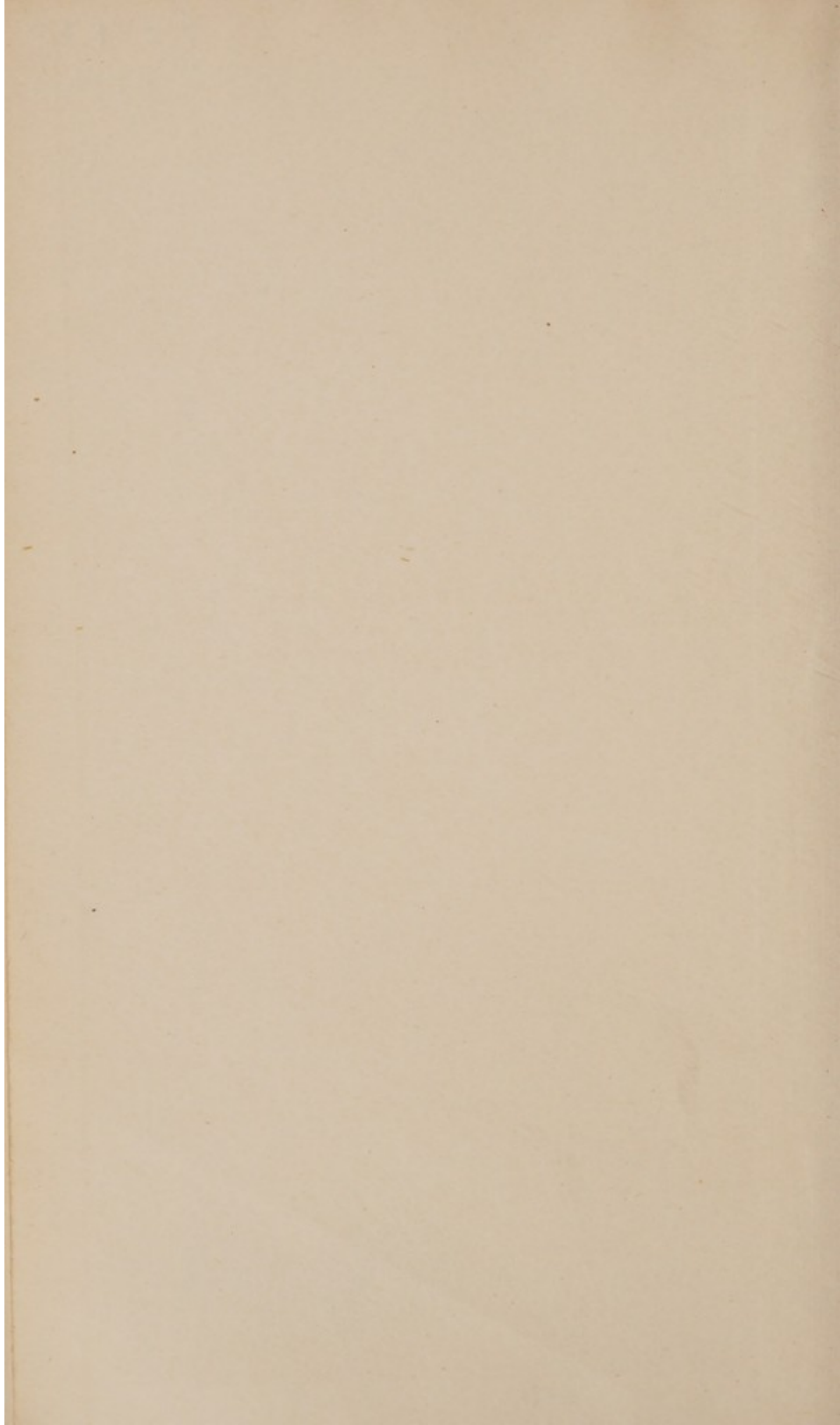
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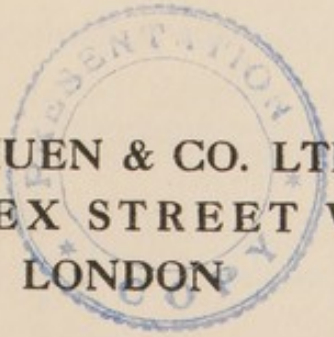
IN ITS MEDICO-SOCIOLOGICAL ASPECTS

EDITED BY

T. N. KELYNACK, M.D.

HON. SECRETARY OF THE SOCIETY FOR THE STUDY OF INEBRIETY; EDITOR OF
"THE BRITISH JOURNAL OF INEBRIETY"

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 "The Drink Problem," First Published February, 1907*

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PREFACE

WAR has forced the Drink Problem into the forefront of national questions. For long, serious students of social subjects have insisted on the importance of recognizing alcohol as a deranging and deteriorating factor in the life of the State, but it has been left to these days of unexampled stress and strain to demonstrate to men and women generally the seriousness of the menace existing from the widespread prevalence of alcoholism within our own dominions. The essential facts regarding alcohol and alcoholism and associated morbid states have for long been presented with scientific precision, but the majority of the community have paid but scant heed.

Now the great adventure and experiment of war with all its circumstances, conditions, and effects, has concentrated attention on the Drink Problem and has already in great measure confirmed the conclusions of scientific workers. But in our haste to arrest and to ameliorate the many ills resulting from indulgence in alcohol and

inseparably associated with persistent alcoholism, there is a real danger of neglecting, or, at all events, of but imperfectly appreciating the fundamental facts and governing principles which should direct rational action in regard to the evil. At the present time it is of paramount importance that all aspects of the Drink Problem should be studied by social workers, and particularly by those who seek by religious, educational, and legislative means to deal with an insidious and deadly foe to the development, conservation, and effective expenditure of our national forces. The personal opinion and example of His Majesty the King, approved and followed by leaders of thought and action in all ranks of life, have lifted this question above the level of mere disputation, and has constituted it one to be viewed and dealt with in the spirit and with the purpose of the highest form of patriotism.

The Drink Problem is essentially a medico-sociological problem. It is to be viewed as but a part of that wider field of medical and sociological inquiry which deals with the bodily and mental well-being of each human unit; and the happiness and efficiency of these units when gathered into domestic, professional, municipal, and national groups. The scientific spirit which is providing motive power to present-day movements for the development and protection of society and the betterment and restoration of individuals, demands that the evil which

mankind designates as intemperance shall be investigated according to the rules of modern research, and submitted to the stringent tests of experimental investigation. It is the purpose of this volume to indicate the lines along which inquiry into the problems of alcoholism may most advantageously proceed; to summarize the more important facts hitherto established regarding alcohol and alcoholism, and to enunciate the guiding principles which should direct in further investigations and in all attempts to apply knowledge, influence, and all other powers to rational measures making for practical reform.

"The Drink Problem of To-Day" is in the main a new work. "The Drink Problem" was issued in 1907, and for long the book has been out of print. Many demands have been made for a new and revised edition. In order to provide a work which should adequately meet the special needs of the times the present volume has been prepared. It claims to be in great measure a pioneer work. Its main aim is to present principles and indicate laws governing the Drink Problem. All forms of constructive reform should be based upon a clear recognition of and compliance with the action of natural law. The Drink Problem offers one of the most serious and baffling obstacles opposing man's up-climbing. It is for us to face the problem as it presents itself in the immediate present, and to bring to bear

on our quest the resources of modern methods of scientific inquiry.

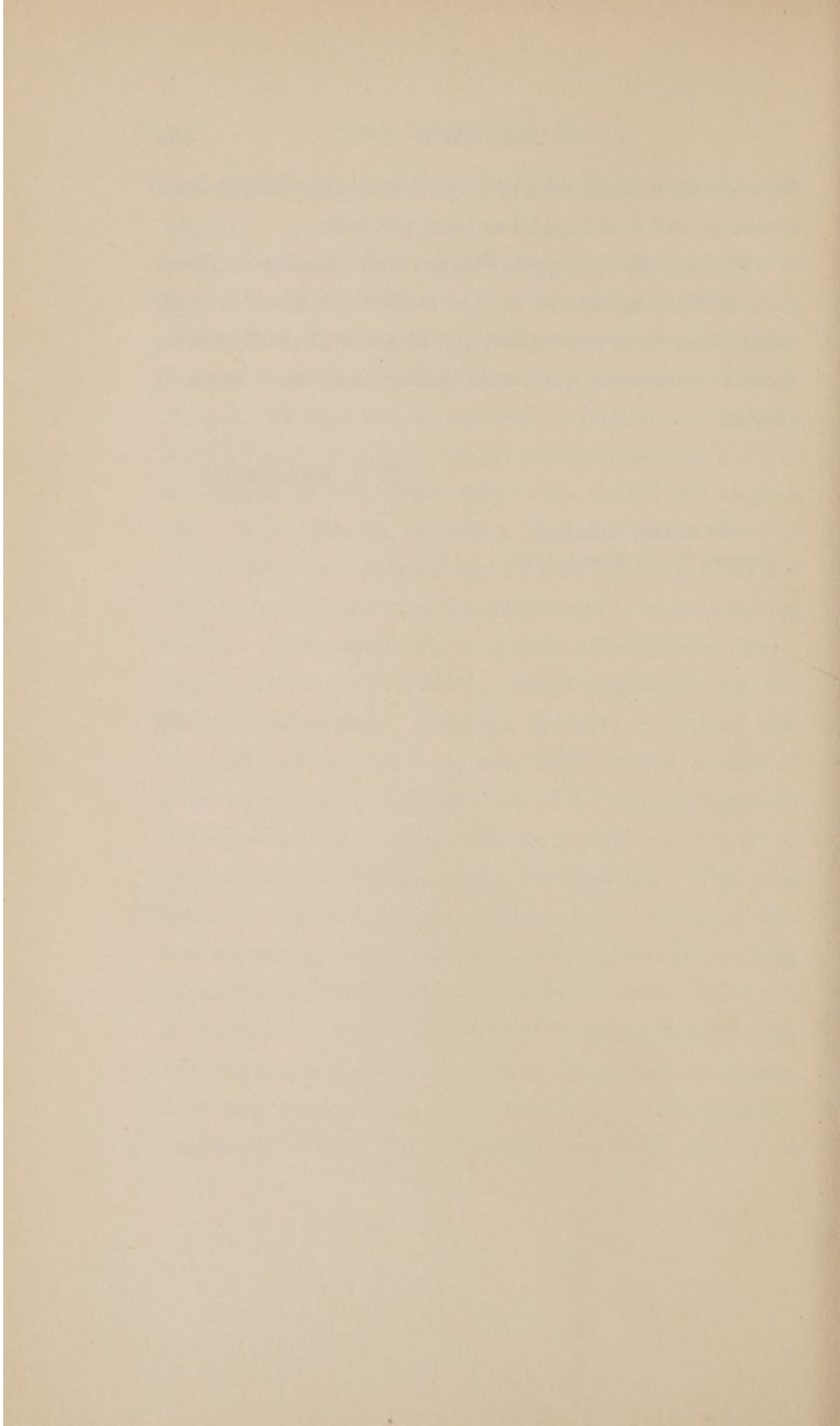
An attempt has been made in this volume to deal with the Drink Problem of to-day in a strictly scientific spirit, and to present all medico-sociological aspects of the subject in a comprehensive series of authoritative studies. No one individual can be expected to possess an all-round knowledge concerning a subject so vast, intricate, and far-reaching as is that which deals with alcohol and alcoholism. It is believed, therefore, that the presentation of various aspects of the problem by well-known experts will be of particular service at the present crisis in our national history. Each contributor has been allowed a free hand, and of course each writer is alone responsible for the chapter contributed. Although the work is divided into separate sections it will be seen that there is a unity of purpose, and even in those cases where there is apparent overlapping it will usually be found that the subject is being dealt with from a different standpoint. Mere controversial topics, matters suitable only for academic discussion, and all purely polemical points have been as far as possible excluded or kept within strict limits. Questions of much speculative interest have, however, been raised, and the individual writers have not hesitated to express their own opinions upon certain aspects of the problem concerning which wide differences of view exist; but

throughout a truly scientific spirit and purpose has been aimed at and it is hoped has been attained.

Without the willing assistance and valuable co-operation of the contributors to this collective study this work would have been impossible, and to one and all the Editor desires to express his deep indebtedness and warmest thanks.

T. N. KELYNACK

139 HARLEY STREET,
LONDON, W., 20 *March*, 1916.



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THE DRINK PROBLEM OF TO-DAY

I

THE BIOLOGY OF ALCOHOLISM

BY

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THE NATURE OF ALCOHOL

WHAT is Alcohol? Alcohol is a volatile liquid obtained by the fermentation of grape sugar, a process in which carbonic acid is formed as well, but the latter escapes for the most part as gas, only a small proportion remaining in solution. When, however, the alcoholic solution is bottled up before fermentation is complete, a large amount of the carbonic acid may be held in solution, and this escaping as bubbles when the pressure is removed, gives rise to effervescence.

The grape sugar from which alcohol is produced may be obtained from a variety of sources, and all sorts of different vegetable substances have been placed under contribution at one time or another in the manufacture of alcohol, among them honey, fruits (such as the grape,

apple, pear), starchy substances which can readily be made to yield sugar (such as maize, barley, wheat, potatoes), and the sap of plants (such as the palm).

THE DISCOVERY OF ALCOHOL

It was probably not until man had reached the agricultural period of his development, and began to cultivate the vegetable kingdom for food, that he first learnt to make alcohol. This conclusion is suggested by the fact that all pre-agricultural peoples, such as the Australian aborigines, the Californian Indians, the Andamanese, and the pigmy tribes of Africa, are ignorant of the process. These pre-agriculturists are the most primitive people living—naked, or all but naked, savages, subsisting by hunting and fishing, and on such sustenance as the uncultivated vegetable kingdom affords. They all practise cookery, and in view of their ignorance of alcohol, it is remarkable what ingenuity they display in the preparation of their vegetable food, knowing how to convert acrid and even poisonous substances into wholesome and palatable viands. With a few insignificant exceptions they are ignorant of the use of metals; nor have they any pottery, and they are thus placed at a great disadvantage in the matter of vessels for holding water, for which purpose they employ such natural receptacles as bamboo canes, shells, or gourds, or, again, vessels made of skin, closely plaited reeds, bark, wood, or even stone. Of these the stone vessels alone are capable of resisting the action of fire; yet they very seldom make them, and still more seldom use them for placing on the fire. Consequently, they cannot boil water over the fire, and have to resort to the roundabout method of first heating stones and then immersing them in a vessel containing water.

Here, probably, we have a clue to the reason why man did not manufacture alcohol before the agricultural period. Doubtless the dearth of substances so suitable for fermentation as are barley, maize, and above all the grape, had something to do with it. There are, however, many uncultivated vegetable products capable of yielding alcohol. Honey also, an important article of diet among most of the pre-agriculturists, was available for the purpose, yielding as it does that once so popular beverage known as "mead". How came it, then, that man of the pre-agricultural period never learned to make alcohol? It was, I suggest, because he was unprovided with suitable vessels for holding the fermenting material. In order to manufacture alcohol in any quantity, large vessels, such as earthenware pans or jars, or wooden tubs are required; and while pre-agricultural man might have been able, with considerable difficulty, to brew himself small quantities by the aid of such vessels as he possessed—for some pre-agriculturists, such as the Australians, make wooden bowls of no mean size—it would have been impossible for him to brew it, or, having brewed it, to store it, in any but the smallest quantities. For this latter purpose earthenware jars, or wooden barrels, are essential, neither of which were forthcoming at this early epoch. It is true that alcohol can be stored in leathern bottles, and indeed wine was kept in this way until within quite recent times; it is also true that some of the pre-agriculturists employ vessels made of the skins of animals for holding water, but these are of the rudest description, and quite unfit for storing alcohol, and until the potter's art had come to his aid man was unable either to carry on the process of fermentation, or to store the finished product, on any but the smallest scale.

This question of the storage of alcohol is one of considerable interest, for without the means of storing it, it is practically impossible, even with a ready means of manufacturing large quantities, to keep a continuous supply at the disposal of a community.

The discovery of alcohol, then, dates from the beginning of the agricultural period. Now almost all the existing primitive peoples of the world have reached this period, and they are acquainted with the art of pottery making, a knowledge which, as I suggest, was a necessary preliminary to the manufacture of alcohol. It is not therefore surprising that, with the exception of the few surviving pre-agricultural peoples, all so-called savages know how to make alcohol, a fact not, I think, generally recognized. The "red-skins" of North and South America, the negroes of the vast continent of Africa, the inhabitants of the multitudinous islands, large and small, of the Pacific, were all tillers of the soil and makers of pottery before they came in contact with the white man, and they almost all knew how to brew the fiery liquor. A few tribes here and there might have been ignorant of it, and even inhabitants over extensive areas, such as a large portion of New Guinea; but these are exceptions.

THE ANTIQUITY OF ALCOHOL

Assuming that alcohol and agriculture made their appearance at about the same time, we may, by estimating the date at which man first began to cultivate the soil, form a rough estimate of the antiquity of alcohol.

We do not, of course, know when agriculture was first introduced, but probably we shall be well within the mark if we give it an antiquity of thirty thousand years. This conclusion is arrived at in the following way: The most

ancient civilization was the Egyptian, and recent investigations suggest that this civilization dates back fifteen thousand years at least. But agriculture must have existed long anterior to the earliest Egyptian civilization. There are two distinct stages in the history of agriculture—the migratory and the stationary. The first stage constitutes a step between the purely nomad life of the pre-agriculturist and the beginning of civilization, i.e. in it the tribes lead a mixed nomad and agricultural life, cultivating a patch of land and abandoning it when it has yielded its harvest. All the primitive agricultural peoples of the world, save those inhabiting small islands where migration is impossible, are in this stage. Such is the case, for instance, with all, or practically all, the primitive negroes of Africa, and such was the case with most of the natives of America at the time of the Discovery—I say most, because some of them, e.g. the Californians and the Tierra del Fuegians, were, and are to this day, pre-agriculturists, while the natives of Mexico, Central America, and Peru had already reached the stage of fixed agriculture.

Now civilization dates from the period of fixed agriculture. It is not possible for man to make any great headway while he is leading a wandering life; it was only when he had become rooted to the soil and had begun to cultivate cereals, whereby an abundance of nutritious food was placed at his disposal, that it was possible for that division of labour to take place which is essential to civilization.

We are compelled, therefore, to assume that the ancient Egyptian civilization was long antedated by a period of migratory agriculture, say for fifteen thousand years, and this would give to agriculture an antiquity of some thirty

thousand years ; and—if we assume that agriculture and alcohol made their appearance together—a like antiquity to alcohol. This may seem a great age, but a few thousand years cannot be regarded as long from the point of view of evolution, not long, that is, as compared with the total length of time man's evolution has occupied. It is probable that those ancestors of the ancient civilized Egyptians who first brewed alcohol were on much the same evolutionary level as the aboriginal Australians of to-day : i.e. that they had reached (employing my method of tabulation¹) the 13·5th grade of evolution (man's ape-like ancestor belonging to the 5th grade, and the average European of to-day to the 15th). Assuming, then, that man had reached the 13·5th rung of his evolutionary ladder before he learned to brew alcohol, it is obvious that he had made considerable advance in his evolution before he had felt the stimulus of that most potent and alluring fluid.

THE EVOLUTION OF ALCOHOLIC DRINKS

The earliest alcoholic drinks were very different from those with which we are acquainted. There were no finely flavoured wines, liqueurs, or even malt liquors. They were for the most part unpleasant to the taste and highly diluted, so that to produce intoxication large quantities had to be taken. The first great advance in the manufacture of intoxicating drinks came with the cultivation of the vine and of cereals, from the former of which wine was made, and from the latter beer. It is not known which is the more ancient drink of the two,

¹ Campbell, H. : " The Evolution of Man's Diet ". " The Lancet," 1904.

but that they both have a high antiquity is certain, for there can be no doubt that the Egyptians of the fourth dynasty, i.e. six thousand years ago, had four different kinds of wine, employing in their manufacture both the grape and the palm, and that they made from barley a species of beer which they flavoured with lupins and other vegetable substances. The Assyrians, whose civilization was nearly as old as that of the Egyptians, made wine from the grape, fig, and palm, and the Hittites, inhabiting South Palestine, a people who were highly civilized when the Jews had scarcely emerged from barbarism, seem to have had very similar drinks. As for the Jews themselves, we know that as long back as four thousand years Noah "planted a vineyard"; and that the ancient Greeks were acquainted with wine many centuries before Christ is evident from the writings of Homer.

There is some difficulty in tracing the history of beer, owing to the loose way in which the word is often employed. It has been used to denote almost any (non-distilled) intoxicating drink obtained from the cereals—maize, barley, wheat, millet—and from such substances as manioc and the sweet potato. The ancient Peruvians made beer (*chica*) from maize; in India and Japan it has long been made from rice, and by the natives of India from many other cereals. Indeed, it would appear that the cereals were in the first instance cultivated as much for the purpose of brewing beer as for food.

The earlier kinds of beer were for the most part nauseous compounds. Many different substances were used to flavour them, but it was not until comparatively recent times that hops were employed for this purpose; these were not introduced into England until the fourteenth century.

Less important among ancient drinks than wine and beer were mead and cider, both of which were largely drunk by the ancient Britons in Cæsar's time, though mead was known at a much earlier date.

One of the greatest discoveries in connexion with alcohol was the method of concentrating it by distillation. This method was first employed by Geber in the seventh or eighth century, and it was practised by the Arabian and Saracenic chemists. Spirit-drinking did not, however, come into vogue until several centuries after this ; in our own country not before the Tudor period. Brandy, produced by the distillation of wine, was first made in the early part of the fourteenth century.

INTOXICATING DRINKS AMONG PRIMITIVE PEOPLES

A study of the intoxicating drinks at present in use among primitive peoples is helpful in enabling us to form a notion of the nature of those first manufactured by man. It is probable that the preparation of the earliest alcoholic drinks was closely associated with that of other narcotizing beverages. A few of these may be mentioned. The Californian Indians prepare a narcotic liquor by boiling the root of the Jamestown weed, and the Mohave Indians a similar drink by infusing the leaves and the root of a certain species of stramonium, just as, coming to a civilized people, the natives of India make an infusion of Indian hemp. The natives of some of the Pacific Islands prepare an intoxicating drink by chewing the kava root and spitting the fluid which accumulates in the mouth, and the aqueous rinsings of the mouth, into a receptacle where the product is allowed to ferment. In a somewhat similar way certain American tribes prepare a beverage by chewing the boiled manioc. Presumably the object of the

chewing in these cases is the conversion of starch into fermentable sugar by the action of the saliva, though it seems doubtful whether the kava beverage contains any appreciable quantity of alcohol.

Primitive peoples obtained their alcohol from many different substances; indeed, comparing modern methods with those employed by primitive and ancient peoples, one is struck by the comparatively few substances which are now used in its manufacture. The sap of certain palms is widely employed for this purpose in South America, Africa, Asia, and the Eastern and Pacific Islands; while the American Indians also employ, among other things, maize (from which their celebrated *chica* is obtained), the *pulque aloe* (yielding the no less renowned *octli*), the prickly pear, and honey.

SYSTEMATIC DRUNKENNESS THE PRODUCT OF CIVILIZATION

Although man discovered alcohol, and thus the means of getting intoxicated, about the same time that he began to cultivate the soil, it is probable that persistent drunkenness was unknown before the period of fixed agriculture, that is to say before civilization, as we understand the term, began in real earnest. Several considerations suggest this conclusion. Unable, as was early agricultural man, to brew alcohol in large quantities, or in any but a dilute form, and being, moreover, imperfectly provided with means of storing and transporting it, he had not the facilities for getting systematically intoxicated. Such drunkenness as was indulged in (and this observation applies to present-day early agriculturists wholly beyond the reach of civilization) was essentially spasmodic, and connected generally with special observances of a ceremonial

character, for each of which the supply of alcohol had to be specially brewed. There was, in short, no continuous, inexhaustible supply, such as is provided by our modern tavern; and without a continuous supply persistent intemperance is obviously impossible.

It is thus manifest that the means of systematic intemperance have been possessed longest by those peoples having the most ancient civilizations, and we have a fairly accurate knowledge of who these are. Fixed agriculture, and the civilization to which it led, began in Northern Africa, the climate of which was at that remote time very different from what it is to-day, owing to the fact that the land was at a much higher elevation. As at the present time, it was connected in the North-East with Asia, but in the North it was also joined on, and at more than one point, to Southern Europe. We have thus a clue as to the direction in which civilization travelled: starting in Egypt it spread eastwards into Babylonia and Assyria, and northwards into Southern Europe.

When the ancient civilizations of Mexico, Peru, and Central America began we have no means of knowing, but probably long anterior to the civilizations of the northern parts of Europe and Asia.

Nothing better shows the influence of civilization in favouring drunkenness than a comparison of the ancient Mexicans and Peruvians with the less civilized inhabitants of America at the time of the Discovery. While most of the latter knew how to obtain alcohol from such substances as maize, manioc, sweet-potatoes, aloes, the cactus, and palm-sap, there is no evidence of chronic drunkenness ever having been rife among them. There is abundant evidence, on the other hand, of its prevalence among the ancient Mexicans and Peruvians, both of which

peoples enacted special laws to hold it in check. Thus the Peruvians forbade the manufacture of a certain kind of strongly intoxicating beer, while the Mexican laws against drunkenness were most stringent ; and, what is more, they appear to have been effective, for when their control was removed by the Spanish Conquest the people abandoned themselves to reckless intemperance. All this is very remarkable. Here we have nations, separated by thousands of miles from the Old World, evolving indigenous civilizations of their own, and not only acquainted with the use of alcohol, but subject to, and actually framing laws for the repression of, all those evils of intemperance with which we moderns are so familiar—nations whom we in our pride are apt to view with disdain from a pinnacle of lofty superiority.

We find a similar difference in respect of inebriety between the civilized and the nomadic peoples of Africa. While there is no evidence that the primitive negro inhabitants of this continent have ever been addicted to chronic drunkenness, we have unimpeachable evidence that it was quite common at a remote period of Egyptian civilization. As already observed, six thousand years ago the Egyptians had several kinds of wine, as well as beer, and they have left abundant graphic representations of their drunken habits: we see them depicted in attitudes of helpless intoxication, or in the act of being carried home from their feasts, or indulging in inane drunken revelry, such as standing on their heads or otherwise “playing the fool”; and it is, moreover, clear from these delineations that the women were by no means exempt from the vice.

From this time onwards there is abundant evidence to show that intemperance was common among civilized

peoples. That the Jews were not always strictly sober is shown by Biblical history. Again, we know from Homer that the ancient Greeks were familiar with wine many centuries before Christ; wine, indeed, was quite an ordinary drink with them, and the prevalence of inebriety among them is suggested by the fact that the prospect of a Hereafter consisting of an "everlasting drunken orgy" was held out as the fairest award of virtue.

We have but scanty knowledge of the inhabitants of Northern and Western Europe before the Christian era, but that drunkenness was rife in the West of Europe in the first century is evident from a passage in the elder Pliny in which he exclaims against the "drunkenness of the whole world," adding that Western nations intoxicate themselves with "moistened grain"; and the conception of Odin's paradise, in which ale was quaffed in large goblets until a condition of celestial intoxication was engendered, points in the same direction.

EVIDENCE OF INEBRIETY IN GREAT BRITAIN SINCE CÆSAR'S INVASION

According to Diodorus, who lived at the time of Julius Cæsar, the Britons were then given to drunkenness, and he declares that "when intoxicated they never fail to quarrel". But nothing better shows the prevalence of drunkenness in Britain from the time of the introduction of Christianity till the Reformation than the habits of the clergy. Thus we find Boniface, in the seventh century, not only upbraiding certain bishops for neglecting to check intemperance, but for "drinking to excess themselves and forcing others to get drunk". This drunkenness of the clergy was the object of special condemnation by King Edgar in the tenth century. In the early part of the

following century Anselm decreed that "priests go not to drinking bouts nor drink to pegs" (*ad pinnas*); and again in the thirteenth century Archbishop Peckham forbade the clergy to keep or frequent taverns; yet, among the clerical orders which existed at this time was one actually requiring its brethren "to drink well at their meat, and then afterwards until supper; and afterwards at the collation each must have a piece of candle as long as the arm below the elbow, and as long as there shall remain a morsel of candle the brethren must continue their drinking". Much later, when Henry VIII ordered an investigation into the condition of the monasteries, he found drunkenness rampant among their inmates. Nor was there much improvement after the Reformation, and among the injunctions of Elizabeth we find one forbidding the clergy to "haunt ale-houses or taverns".

Such being the habits of the clergy it would be surprising if a better condition of things prevailed among other sections of the community, and indeed there is abundant evidence that inordinate drinking was fairly general. On great occasions the people freely abandoned themselves to drunkenness, the means for which were readily placed within their reach. Thus we are told that the "conduits ran with wine" when Edward I returned to London from the Holy Land, and that when Anne Boleyn made her entry into the City of London "a fountain of Rhenish Wine ran copiously until night time"; and, again, that at the restoration of Charles II the conduits flowed with a "variety of delicious wines". Thomas Young, writing in 1617, complains that "drunkenness is professed with us as a liberall arte and science," and that men will actually drink for a wager; and Burton in 1621 writes: "'Tis now come to that pass, that he is no gentle-

man, a very milk-sop, that will not drink, fit for no company". A Frenchman observes in a letter written during the Protectorate: "There is within this City (London) and all the towns of England which I have passed through, so prodigious a number of houses where they sell a certain drink called ale, that I think a good half of the inhabitants may be denominated ale-house keepers . . . some of them having built fair houses, and purchased those gentlemen out of their possessions, who have ruined themselves by the base and dishonourable vice of inebriety". Pepys in his "Diary" (1662-63) describes how when he dined at the "Chirurgeons' Hall" the King's health was drunk out of a gilt cup—the gift of Henry VIII—"with bells hanging at it, which every man is to ring by shaking after he has drunk up the whole cup".

French observes that in the reign of William and Mary intemperance raged "from the highest to the lowest," and Lord Lonsdale asserted in the House of Lords in 1743 that "In every part of this great metropolis, whoever shall pass along the streets, will find wretchedness stretched upon the pavement, insensible and motionless, and only removed by the charity of passengers from the danger of being crushed by carriages, or trampled by horses, or strangled with filth in the common sewers".

George Pryme, who went to Cambridge in 1799, refers to the hard drinking which then prevailed at that university. The undergraduates endeavoured to make one another drunk, and took "a pride in being able to resist the effects of the wine".

Charles Knight, describing a London Christmas in 1824, writes: "In every broad thoroughfare, and in every close alley, there was drunkenness abroad; not shame-faced drunkenness, creeping in maudlin helplessness to

its home by the side of the scolding wife, but rampant, insolent, outrageous drunkenness ”.

Similar passages might be quoted *ad infinitum*, but the above serve our purpose.

THE ATTRACTION OF ALCOHOL

Now, what is the nature of the peculiar attraction which alcohol exercises over mankind?

People are attracted to alcoholic drinks partly by their agreeable flavour, partly in the hope to allay thirst, partly—it may be—for their revivifying effects (for although the vigorously well are not stimulated by alcohol in the sense of being rendered more efficient, it may temporarily stimulate flagging energies), and, again, partly to dispel mental depression, on the principle of “keeping spirits up by pouring spirits down”. There can be no doubt, however, that neither the gratification of the palate, the quenching of thirst, the reviving of failing energy, nor the removal of gloom constitutes the essential attraction of alcoholic drinks. Although the pleasant flavour of many of them adds to their attractiveness, it cannot be an essential part of it, for without the alcohol they would, one and all, cease to attract, and it is moreover evident that the earliest alcoholic drinks must have attracted man *in spite of* their crudeness and unpalatableness; although, again, it is true that some alcoholic drinks, such as beer, the lighter wines, and freely diluted spirits, may, owing to the large amount of water which they contain, be capable of allaying thirst, no one would dream of taking strong alcohol for this purpose; nor can the popularity of alcohol be due to its power of stimulating failing energies or of dispelling gloom, for we find whole communities of vigorously healthy people (e.g. savages) flying to alcohol as the moth to the flame,

and abandoning themselves to excess when a plenteous supply of the magic liquor is placed in their way.

Clearly, then, the essential factor in the attractiveness of alcoholic drinks is their power to intoxicate and narcotize, a conclusion which is further suggested by the fact that mankind shows a disposition to indulge in a variety of intoxicant and narcotic substances (such as opium, hashish) which have nothing but their drug effects to recommend them.

We must conclude, therefore, that man has an inborn liking for intoxicants. This liking is found not only in primitive peoples living under primitive conditions, but in civilized man also, though probably, as we shall see, in a less intense form. With him, however, other factors besides the desire for intoxication, such as ill-health and mental depression—factors begotten of civilization—come into operation.

How are we to account for this natural liking for intoxicants and narcotics? We may speak of it as innate, because primitive man, and very often civilized man also, takes to alcohol as naturally as a duck to water, so naturally, indeed, that Archdall Reid refers to the liking for it as "instinctive".¹ Doubtless among the civilized, in whom the liking is less clamant than among primitive peoples, a shorter or longer term of probation is generally needed to develop it, but among some of them, and among all, or most, savages, it appears to be strong from the very beginning.

Reid regards the inborn liking for alcohol as a "by-product"—an accidental accompaniment, of evolution. But even so, its occurrence may admit of an explanation, and I venture to put forward the following: The liquid

¹ Reid, G. Archdall: "Alcoholism—A Study in Heredity". London, 1901.

portion of the blood, or blood plasma, contains not only nutrient materials and useless waste products, but also substances (*hormones*) whose function it is to arouse special forms of activity. Our knowledge of the action of these substances on the nervous system is at present limited, but I believe it will be found that they play a much larger part in regulating nerve-function than has hitherto been suspected. It is probable that some of them, which we may speak of as "nervine stimulants," exercise a tonic, stimulating, or even slightly intoxicating effect upon the brain, much in the same way as strychnine and alcohol do. Such nervine stimulants have a twofold origin. They may either (*a*) be ingested with the food, which is (unconsciously) selected with due regard to its stimulating properties, the tendency generally being to choose stimulating rather than bland, non-stimulating foods; or (*b*) they may be engendered within the organism, either in the alimentary canal as by-products of the digestive process, or in the tissues as a result of their vital activities.

Besides these nervine stimulants the plasma also contains substances having an opposite or depressing effect, giving rise to such symptoms as mental depression, irritability, and lassitude. These substances, which we may designate "nervine depressants," are probably of the nature of excreta, that is to say, substances which need to be removed by the excretory organs. That the symptoms referred to may be produced by excreta is shown by the fact that they can often be removed by the old-fashioned blue pill and black draught, which manifestly operate by purging the blood of poisonous substances. This is freely admitted, and it is somewhat strange that the possibility of the blood's normally containing a class of substances

having an entirely opposite effect has been overlooked. That it does actually contain such substances I have no doubt, but for the arguments in favour of this conclusion I must refer the reader to another place.¹

We may think of the brain, then, as an instrument played upon by a number of chemical agencies, which may be roughly grouped into stimulants and depressants, and we may conceive of this mind-instrument as yielding music which is bright or dismal according as the one or other group of agencies predominates.

If we assume that the blood normally contains mildly intoxicating substances, we can explain the readiness with which man takes to a substance which, like them, tends to call forth a sense of exuberant well-being and joyous emotion—to beget, in short, a sense of happiness, the end and aim of all human endeavour—that to the attainment of which all the efforts of poor, striving men are, consciously or unconsciously, directed. On the assumption that the sense of material well-being is largely dependent upon the presence in the blood of mildly intoxicating substances, is it any wonder that man having discovered an essence capable of producing a kindred effect, and all ignorant of the dangers which lurk within its subtle charm, should fly to it with the blind impetuosity of the moth rushing on the destroying flame?

While thus seeking to offer a physiological explanation of man's love of alcohol, it must not be thought that I am advancing a physiological justification for taking it, as thus : because the blood normally contains stimulating substances which engender feelings of health and happiness, therefore man stands in need of alcohol and is physio-

¹ See the writer's paper : " The Alcoholic Craving ". " The British Journal of Inebriety," July, 1906.

logically justified in resorting to it. Quite the contrary. The normal nervine stimulants are of such a nature, and are present in such quantities, as to promote the maintenance of health rather than to damage it; whereas alcoholic drinks are apt to be harmful even when taken in moderation, and are, moreover, but too often imbibed in quantities which are unmistakably poisonous. It is even possible that if the normal stimulants of the blood were in excess they would exercise a harmful influence.

The question may, I think, legitimately be raised whether we may on similar lines explain those cases of impulsive craving which are sometimes the most obtrusive manifestations of the congenital neurotic. Is it possible that the craving in these cases is due to the deficiency in the blood of its normal allowance of stimulants? Be this as it may, there is, I may here add, no doubt in my mind that the nervous diathesis depends essentially upon the composition of the blood: an individual is nervously disposed because his blood makes him so.

THE INFLUENCE OF NATURAL SELECTION ON THE LIKING FOR ALCOHOL

Inasmuch as drunkenness leads to disease and premature death, not only in the case of the drinkers themselves but of their offspring also, and inasmuch as an innate liking for alcohol plays a large part in determining whether an individual shall become a drunkard or not, it follows that the liking for drink causes an elimination of those who are naturally most disposed, and a survival of those least disposed, to exceed. In other words, the prevalence of drunkenness in a community for several successive generations tends to make that community innately more sober.

We have seen that chronic drunkenness dates from

the advent of civilization, and consequently it is only since then that the elimination of the drunkard has taken place to any great extent. Among most civilized communities this elimination has been very drastic, and has, in the language of Dr. Archdall Reid, led to an "evolution against alcohol," i.e. an evolution in the power of resisting it.¹

The resistance to alcohol which an individual offers depends upon his ability (1) to resist its evil effects after it has been imbibed, and (2) to abstain from an excess of it.

1. Individuals differ considerably in the way they respond to alcohol: a quantity which will make one person downright ill may have little or no apparent deleterious effect upon another, for it is certain that some people, especially when leading an active, open-air life, can for years indulge in a goodly quantity without apparent hurt, though they doubtless suffer some evil. It might be suggested that this ability to tolerate alcohol has evolved through the elimination of those who are highly vulnerable to its action and whose efficiency in the struggle for existence is lessened by even small quantities of it, and it is conceivable that in this way a type may be evolving whose tissues are becoming less and less vulnerable to it. It must not, however, be forgotten that great vulnerability to alcohol may be a cause of indifference to it. Those who by moderate indulgence in it are made headachy, irritable, and dyspeptic are likely to avoid it, and thus to escape elimination through drunkenness; and in this way a type may be evolving with whom alcohol, even in moderate quantities, may disagree and for whom it no longer possesses its pristine charm.

¹ Reid, G. Archdall: "The Present Evolution of Man". London, 1896.

2. The ability to abstain from excess of alcohol depends either upon an indifference to its allurements, or the possession of will-power capable of resisting them; the greater that indifference or the greater that will-power, the less is the individual likely to become intemperate.

Of these two resisting factors indifference is the more effective. The will is only a secondary factor in determining whether an individual shall be drunk or sober; a weak-willed person who is indifferent to alcohol is much less likely to drift into intemperance than a strong-willed person who is highly susceptible to its attractions. I do not wish to underestimate the influence of will-power in this connexion; a strong will may assuredly overcome a strong natural bias to inebriety, and many a man would undoubtedly drift into intemperance but for the exercise of great self-control. Where will-power is most effective is in preventing the hitherto sober man from becoming intemperate; but once habits of intemperance have been contracted, the will is too often powerless to oppose an effective resistance. Only exceptionally does a chronic drunkard become sober through sheer strength of will. Experience shows that even if he can be prevailed upon to abandon drink for a time there is great danger of a relapse, and though such relapses are sometimes due to an irresistible craving, they often arise from weakness of will. Thus a man may be induced to abstain for a time and all craving may have disappeared after the first week, but one day he is asked by a friend "to have a glass," and he yields from simple weakness of will, and then the mischief is done, for that one glass rekindles all the old desire. We are apt to upbraid these people for being weak-willed, but it must not be forgotten that chronic drunkenness weakens will-power, and it is largely for this reason that

so little reliance can be placed on will-power as a factor in reforming the drunkard.

We arrive, then, at the conclusion that whatever adaptation to alcohol has taken place in civilized communities, has essentially been by the evolution of a type of individual capable of resisting its allurements, and that the ability to do this depends rather upon indifference to those allurements than upon strength of will, character, or whatever we may choose to call it. But be the nature of the adaptation what it may, there can, I think, be little doubt that it has been taking place. Adaptation to what may be termed the moral environment, of which alcohol may be considered a part, has been steadily going on since man first emerged from a lowlier being. From the most primitive times he has had to adapt himself to this moral environment. Even savages have some kind of moral code and modes of enforcing it, and there can be no doubt that from the earliest period of our human ancestry there has been steadily taking place an elimination of those least amenable, and a survival of those most amenable, to social law. Among civilized communities this process is going on with great rapidity. Many moral requirements are exacted of the modern civilized being, who, if he do not run fairly well in his moral harness, tends to go under. The three great essentials required of him are industry, honesty, and sobriety; the lazy, the dishonest, and the drunken have from the very dawn of civilization left fewer progeny than the industrious, honest, and sober, and thus among civilized communities the evolution of these latter qualities is proceeding apace.

If an adaptation to alcohol has been taking place in the way described we should expect those communities which for the greatest number of consecutive generations have

had opportunities for chronic drunkenness—or, what comes to the same thing, those possessing the most ancient civilizations—to be most disposed to temperance. Whether this *a priori* argument is borne out *a posteriori* I shall not stop to consider here, for, apart from the difficulty of obtaining reliable statistics, the question is complicated by the influence of climate, custom, and religion. There seems, however, to be little doubt that while savages whose ancestry have had no opportunities for chronic drunkenness succumb to drink when opportunity offers with a readiness which is appalling, the Jews, who have for some thousands of years been a civilized race, are temperate all the world over.

There are many other factors predisposing to intemperance besides inborn liking for alcohol and weakness of will. Some of these we will now consider.

FACILITIES FOR OBTAINING ALCOHOL

That intemperance increases with the readiness with which alcohol can be obtained is amply borne out by observation. As I have more than once urged, pre-civilized peoples were unable to get chronically drunk, owing to their inadequate means of manufacturing, storing, and distributing alcohol. But with civilization came opportunities for chronic drunkenness, and these were all too readily seized. Nothing better shows the relation between drunkenness and the opportunity to get drunk, than the influence of certain occupations, such as that of publican and potman. The same truth is evinced by the effect of religion and legislation, both of which have, in certain instances at least, succeeded in promoting sobriety. Millions of Mohammedans have for generations been kept sober by religious mandate, a mandate which has led to

the entire banishment of alcohol from their midst, and our own past history affords many instances of the influence of judicious legislation in favouring temperance, and of injudicious legislation in promoting intemperance.

Scarcely any steps seem to have been taken before the time of Edward VI for preventing drunkenness either by regulating the sale of alcohol, or by punishing the drunkard. The Government's chief care seems rather to have been to keep down the price of alcohol by limiting the charges made by the vendor. Thus in 1277 4 gallons of the best beer were to cost only 1d., and in Henry V's reign the wines of Gascony and Guienne were not to be sold above 8d. the gallon; again, in Charles II's reign it was provided that no Spanish wine should be sold retail for more than 1s. 6d. the quart, and that the price of French wines should be limited to 8d. the quart, and that of Rhenish wines to 1s.

Some attempts had, however, early been made to limit the number of taverns. Thus in the tenth century King Edgar decreed that no village should have more than one, and with a view to prevent drunkenness he ordered, somewhat naïvely, pins, or nails, to be fastened into drinking vessels at definite intervals, anyone drinking beyond one of these marks being liable to severe punishment, a plan which in later times had the very opposite effect of promoting drunkenness, for it became the custom for the cup to go round and round and for each person to drink to a pin—which was half a pint. There was to be no shirking; each one was to take his full share like a true sportsman! This was called pin-drinking and gave rise to the common slang, "He is as merry as a pin".

Probably other attempts to keep down the number of public-houses were made during the succeeding centuries, though I have obtained no record of any until 1496, when

Justices of the Peace were empowered to prohibit "Ale-selling in townes and places where they shall think convenient, and to take suertie of the keepers of ale-houses of their gode behavyng". But in spite of such spasmodic attempts to limit ale-shops, there can be no doubt that facilities for drunkenness were abundant in those times. Not the least of these was that afforded by the small amount of duty, or excise, on alcohol. Though a moderate duty had been put upon imported wines and spirits, there was no excise until 1643, when it was first laid upon "makers and vendors of ale, beer, cider, and perry". In 1689 the Government prohibited the importation of spirits, and threw open the distillery trade to anyone who would pay the very limited excise, the effect of which was greatly to increase spirit-drinking, and in consequence the average yield of the British distilleries, which in 1684 was 527,000 gallons, had in 1727 risen to 3,630,000 gallons! Retailers of gin announced in large letters that their customers could be made "drunk for a penny, dead drunk for twopence, and have straw for nothing". At the same time large quantities of rum, brandy, and hollands were smuggled from the Channel Islands, so that beer came to be superseded almost entirely by spirits. To prevent this excessive spirit-drinking, in George II's reign a heavy duty was placed on spirits, but unavailingly, for coloured spirits were sold by hawkers in large quantities under feigned names. The act was therefore repealed, and a penalty of £10 imposed upon the retail sale of spirits *unless sold in dwelling houses*, "by which masterpiece of wisdom," as Dr. French¹ observes, "every householder was potentially converted into a publican," and "intemperance spread like a

¹French, V. R.: "Nineteen Centuries of Drink in England". London, N.D.

plague" in consequence. The effect of the famous Gin Act (1736) was to send up the consumption of spirits from 13,050,000 to 19,000,000 gallons, but between 1760 and 1782 it fell again to an average of 4,000,000 as the result of prohibiting the distillation from grain, malt, or flour.

But there is no need to pursue this point farther. Enough has been said to show that the consumption of alcohol can be greatly influenced by legislative enactment.

THE ATTRACTIVENESS OF PUBLIC-HOUSES

It is obvious that public-houses tend to promote drunkenness by the facilities they afford for it, and their effectiveness in this respect is enhanced by their attractiveness. The object of the vendor of alcohol, wholesale or retail, being to sell his goods, he spares no effort to tempt the passer-by to come in and drink, to this end spending vast sums of money in making public-houses attractive both outside and in, as also in advertising, circularizing, and vigorously pushing the sale of the different kinds of alcoholic drinks in every possible way. And in the fact that so long as the sale of alcohol is in the hands of the private individual we may be sure that he will do his utmost to increase it, we find a consideration which should serve as a guide to the direction which future legislative measures to promote sobriety should take.

CUSTOMS TENDING TO PROMOTE DRUNKENNESS

Custom plays a large part in influencing the sobriety of a community. Among those customs which have tended to promote intemperance among us are the following:—

Church wakes, or "watches," were a survival of the heathen Paganalia which prevailed before the conversion of the Saxons to Christianity. They were religious feasts which in course of time became occasions of revelry and debauch, so much so, indeed, that Edward III sought to suppress them. Nevertheless they survived into the seventeenth century, their place being gradually taken by fairs held on, or near, some saint's day.

Scot ales ("ale" = feast, or merry-making; "Scot" = payment) consisted of drinking meetings, the expenses of which were shared by the company. They were actually announced beforehand in the churches, as we see from decrees in 1222 and 1240 by the Bishops of Durham and Worcester respectively, forbidding the practice.

Church ales were sales of ale which had been contributed by the parishioners, the money thus raised being spent in repairing the church buildings and providing books, surplices, and other church requisites. We are told that the person who spent the most at these gatherings was accounted the godliest. In course of time they degenerated into scenes of licence, and we find them being denounced from the pulpit in the sixteenth century.

Bride ale, which was probably often contributed by friends, was ale sold by the bride on her wedding-day as a means of providing her with ready cash. Wine-drinking, it may be observed, was part of the wedding ceremony; after the return of the married couple from the church, drinking and feasting began, and in this way as much was wasted "in one day as was sufficient for the two newe married folkes halfe a yeare to lyve on". Similarly, funeral obsequies have been, and still are, among the lower classes, occasions for lavish indulgence in drink. Witness the Irish "wakes".

Speeding the parting guest with a draught of wine, which, being often given after he had mounted his horse, came to be called "the stirrup-cup," was another old-time drinking custom.

Few customs have been more provocative of drunkenness than *toasting*, a practice more common, apparently, in England than in other countries, certainly than among the French.

The custom of drinking *night-caps* at bedtime is an old one, and is referred to by Lady Macbeth when she says, "I have drugged their possets".

Drinking contests have at various times been the fashion, as in the case of peg-drinking, when each of the company drank down to a peg (that is to say, half a pint every time the tankard came round). Often the drinking vessel was of a kind which compelled the emptying of it at a draught, as in the case of that earliest of all drinking vessels, the horn, which could not be made to stand upright; or like the cup at the Chirurgeons' Hall, already referred to, which was furnished with bells which each drinker had to sound in token that he had fairly emptied it.

The practice of *doing business over drink*, which appears to have been started during the Tudor period, has lately happily fallen somewhat out of repute.

Fashion must be reckoned as another potent cause of drunkenness in the past. It has often been held "the correct thing" to get drunk; time was when the greatest compliment a host could pay his guest was to make him drunk, and it was no uncommon thing for prominent members to come into the House of Commons intoxicated. Thus such great parliamentarians as Pitt, Fox, and Sheridan were notable drinkers. It is certain, too, that under the Hanoverians there was much heavy drinking about

the Court: George IV was actually inebriated when the Princess Caroline was introduced to him.

ALCOHOL AND ILL-HEALTH

Although it is true that some people enjoy alcohol most when they are feeling well, and avoid it altogether when they are out of sorts, there can be no doubt that ill-health may predispose to intemperance. People who suffer from feelings of faintness or exhaustion are temporarily braced up by a "nip" of alcohol, and they may thus get into the habit of resorting to it frequently, and in this way gradually and all unconsciously develop into hopeless dram-drinkers. This probably happens more frequently with women than with men, because the former are so much more apt to suffer from those minor ailments and abnormal feelings which are temporarily relieved by alcohol. The married women among the poorest classes, living as they do under wretchedly unhealthy conditions, are most of them chronically ill, and scarcely know what it is to feel downright well. Small wonder, therefore, that they should sometimes resort to alcohol to ease their sufferings. As a case in point it has been noticed that in certain highly temperate British regiments drunkenness is not uncommon among the soldiers' wives; and this is attributable to the fact that while the men lead a healthy, outdoor life, and are in prime physical health, the women spend most of their time indoors, under by no means the best of conditions. Their health is in consequence much inferior to that of their husbands, and, feeling tired, exhausted, irritable, and depressed, they are apt to resort to stimulants to gain a respite from those feelings, brief though that respite be.

At the so-called climacteric in women numerous

nervous symptoms, such as headache, irritability, depression, flushing, shivering, faintness, and giddiness are apt to occur. Such feelings can be temporarily relieved by stimulants, and it is therefore not surprising that many women drift into alcoholism at this period of life.

Alcohol is sometimes taken, especially in the case of women, to relieve pain. Whisky is often given to young girls for this purpose. This is a pernicious practice. Physicians now recognize that great caution is needed in prescribing alcohol as a medicine, more especially in minor ailments, not only because they are beginning to doubt its therapeutic virtues, but on account of the danger of the patients' becoming too dependent on the prescription. It was the fashion not long ago to order a delicate girl wine and biscuits at eleven o'clock, and even now Burgundy or stout is sometimes prescribed for anæmic young women and nursing mothers. Strange that anyone should expect better results in the latter case from alcohol than from cows' milk!

Sometimes people in active work drift into intemperance by taking alcohol, not from self-indulgence but simply to "keep them going". I have seen many sad cases of this kind in wholly deserving people. In some of these there is great physical weakness: the man is run down and wants a holiday (which, perhaps, would set him quite right again, if he could only get it), or again, he may be really seriously ill; in either case he fortifies himself with alcohol in order to bring himself up to the mark, with consequences often the most tragic.

In other cases alcohol is taken to produce artificial courage: a shy and self-conscious man has to meet his Board of Directors, say; he dare not appear before them without first taking some stimulant, lest his self-conscious-

ness lead him, in spite of his complete mastery of his work, to "make a fool of himself". A little alcohol removes this self-consciousness, gives him confidence, and enables him to come out of the ordeal with distinction, and thus he gets more and more dependent upon it. More than one case of this kind has come under my notice, and I am led to believe that they are by no means uncommon.

Among the physical conditions which may lead to intemperance must be reckoned severe nervous shock, such as sunstroke, or a blow on the head. The entire moral nature may in this way be altered, and one who has been strictly temperate may develop into a desperate inebriate.

Lack of occupation, loneliness, grief, domestic worry, all predispose to intemperance. If a person has nothing to do, he is apt to take alcohol to kill time. If he is lonely, alcohol may make him better pleased with his own company, or at any rate he may fancy that it does; people living by themselves, or wives spending the greater part of the day at home alone, but too often seek to solace themselves with the bottle; in like manner, those who are stationed in lonely districts, where they cannot consort freely with others of their own standing, often become hopeless tipplers. That poignant grief may tempt people to excessive drinking is but too well known: some terrible blow falls upon a person; the burden of life seems too great to be borne; alcohol at least drowns his grief for the time being, and he resorts to it with ever-increasing frequency until he becomes a chronic alcoholic. Again, home worries (especially among the poor), poverty, dirt, and destitution, help to fill the public-houses, and lead to that form of inebriety which has been pathetically termed

"misery-drinking". This form of alcoholism is unhappily on the increase, while on the other hand the drink bill among the upper classes is steadily growing less.

Just as loneliness may be a cause of intemperance, so also may sociability. The meeting of friends is often the occasion of a drink together. "Come and have a glass," says one, and the invitation is accepted, but the pair do not unfortunately always stop at the one glass. The custom of "treating" people to drink is most pernicious. In the case of cabmen, dustmen, messengers and the like, it is much truer kindness to give a small piece of money than to ply them with a seductive and dangerous drug.

II

THE PATHOLOGY OF ALCOHOLISM

BY

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THE PATHOLOGICAL ACTION OF ALCOHOL

IT has long been known that alcohol damages various kinds of animal and vegetable protoplasm, and although it is pointed out, and very justly, that the action of alcohol upon "naked" protoplasm can scarcely be the same as is its action upon the protected and protecting cells of the alimentary tract, it is evident that if we can obtain even a small amount of proof that alcohol acts on the tissues of the human body as it does on other protoplasm, we are justified in assuming that these tissues react to, and are injured by alcohol, much as are the tissues that we can study directly, the difference being one of degree merely, rather than one of kind.

It is sometimes contended that the method of the study of the action of alcohol on the protoplasm or tissues of growing animals and plants is unscientific; but against this it may be urged that if we are to study the effect of

alcohol on the tissues and organs of the body, we must in the first instance determine, if possible, the action of alcohol in various doses and dilutions upon normal tissues over the condition of which we can exert some control during the course of the experiment. Indeed, whilst it would be unreasonable to assume that certain substances, alcohol amongst them, which act as poisons to one kind of protoplasm necessarily act in the same way upon another, it may be accepted, generally, that should these substances affect, deleteriously, many kinds of tissue and various forms of protoplasm other than those of the human subject, they will probably be poisonous also to these more highly developed human tissues.

Let us take one or two examples. Cress seed moistened with 1 per cent of alcohol in water sprouts tardily, and if this solution be used to "water" geranium plants they grow slowly and become etiolated; they are stunted, delicate, and sickly.¹ The fresh-water medusa and the *Daphnia* (water flea) are unable to exist in a far weaker solution of alcohol, one part in 4000 of water. Alcohol in the form of vapour or of very weak watery solution arrests or interferes with the development of the eggs of organisms so widely apart in the scale of animal life as the blowfly, the frog, and the hen.² Rauber³ studying the action of alcohol in various dilutions upon plants and animals, found that in 10 per cent solution, with which he usually worked, alcohol acts as a definite protoplasmic poison. All forms

¹ Ridge, J. J.: "Alcohol and Public Health". Second edition. London, 1893.

² Ridge, J. J.: "Medical Temperance Review," Vol. I, p. 148. London, 1898.

³ Rauber: "Wirkungen des Alkohols] auf Tiere u. Pflanzen". Leipzig, 1902.

of cell life upon which he experimented—the hydra, tape-worms, earthworms, leeches, crayfish, various species of fish, Mexican axolotl, birds and mammals, including the human subject—being more or less affected; plants become shrivelled and their chlorophyll altered, and animals intoxicated, aquatic organisms dying very rapidly. In a 2 per cent solution of alcohol crayfish die in a few hours, perch become intoxicated, fall to the bottom of the fluid and die, though if they are transferred to pure spring water before death occurs they may recover in the course of a few hours.

The less highly developed the protoplasm the less is its activity affected by alcohol. For this reason most experiments carried out to determine the action of alcohol upon the circulatory system aim at determining the reflex or indirect action of alcohol through the nervous system, and it appears to be undoubted that comparatively small quantities of alcohol circulating in the blood and acting upon the nerve cells cause the heart's action, for example, to become distinctly abnormal. Beyond this, however, there appears to be a more direct action. Ringer and Sainsbury¹ maintain that an artificial blood containing nearly 7 per cent of ethyl alcohol paralyses the muscular substance of the heart, this paralysis coming on at once, never being preceded by any evident stimulation to increased activity. Hemmeter² goes further and states that such doses kill the heart muscle instantaneously. According to the higher estimate, 7 per cent of ethyl alcohol is required to affect the individual muscle fibres of the heart of a dog,

¹ See "The Practitioner," Vol. XXX, p. 339. London, 1883.

² Hemmeter: "Studies from the Biol. Lab., Johns Hopkins Univ.," Vol. IV, No. 5. Baltimore, 1889.

but it has been proved by experiment¹ that blood containing $\frac{1}{4}$ per cent of ethyl alcohol so alters the protoplasm of this muscle that within a single minute there is a measurable diminution in the amount of work done by the heart even when it is isolated from its extrinsic nerve supply, whilst if the strength of the solution be doubled the activity of the heart may be so far diminished that it is scarcely able to propel a sufficient amount of blood to supply its own nutrient arteries. Under these conditions the heart becomes abnormally dilated, it loses much of its systolic power, the condition becoming more marked as the administration of alcohol is prolonged.

Dr. Dixon² states that in experiments made upon animals that are not anæsthetized the first effect of alcohol upon the pulse is a slight acceleration which he suggests may be due to an irritative effect of peripheral origin. He thinks that there is also an initial stimulating effect on the heart. As regards the peripheral blood-vessels there is usually dilatation of the vessels of the limb associated with the constriction of the vessels of the viscera. He believes, moreover, that unless the alcohol is given in large doses, there is a preliminary rise in the blood pressure, a fall taking place when large doses are given. When large doses are administered rapidly the action of the heart is materially interfered with, the drug acting directly upon the cardiac centre.

Some time ago, in order to determine the action of alcohol upon lowly organized protoplasm, I carried out a series of experiments on Beyerinck's phosphorescent bacil-

¹ Martin and Stevens : quoted by Munro and Findlay, "Medical Temperance Review," Vol. VI, p. 325. London, 1903.

² See "Report of the British Association for the Advancement of Science" for 1904, p. 742. London, 1905.

lus, an organism which, emitting light, offers for our study a definite and easily measured functional activity. A vigorous culture of this bacillus multiplying and growing in fish broth emits a bright glow. To a series of such cultures various measured quantities of ethyl alcohol were added and the results were measured photographically.¹ I found that a photographic plate submitted to the light of an active culture gives a distinct image of any aperture through which the light is allowed to pass. On the addition of alcohol in quantities of from 12 down to 7 per cent, the light-producing function of the phosphorescent organism is completely paralysed, and no image can be obtained on a sensitive plate even with a two and a half to three hours' exposure. When only 5 per cent alcohol is added there still remains a faint glow that will give a faint photographic image in two and a half hours. The tube containing 4 per cent of alcohol gives a slightly stronger image, as do also the 3 per cent and 2 per cent tubes, though the images are not nearly so distinct as are those obtained with a twenty minutes' exposure of a tube in which there is no alcohol. With the 1 per cent and $\frac{1}{2}$ per cent tubes, however, there appears to be little difference as regards the density of the image obtained between them and the tube containing no alcohol. It must of course be remembered that we are here dealing with a low form of protoplasm, and that the function of light production does not require nearly such complex conditions as are essential for the continued life and activity of the nerve cell. Even yeast cells which, from the fact that they play a part in the disintegration of sugar into alcohol, are probably capable of

¹ Woodhead, G. Sims: "Recent Researches on the Action of Alcohol in Health and Sickness". "The British Journal of Inebriety," January, 1904.

existing in alcohol longer than almost any other form of protoplasm, become paralysed and incapable of carrying on their special functions in the presence of 13 per cent of alcohol.

Alcohol then may be classed with those poisons produced by the lower vegetable organisms which act directly upon protoplasm. These poisons combine readily and rapidly with oxygen, and this combining power is so great that oxygen, which under normal conditions would combine with the tissues, combines with any alcohol that may be present in them.

Further, alcohol appears to have the power of so altering the tissues that they themselves become less capable of taking up some proportion of the available oxygen which is thus more at the disposal of the poison. The "oxygen hunger" of these poisons is so great indeed that when they are taken into the body they interfere with the oxidation of the fat and carbohydrates along with which they are ingested. It is maintained that the oxygen taken up by the blood in its passage through the lungs is rapidly seized upon by these poisons, alcohol amongst them, as they circulate in the blood, and, combining with them, little or none is left for the tissue protoplasm, the nutritional processes being thus greatly interfered with.

Further, owing to this interference with the nutrition of the protoplasm, there is a serious disturbance of the process of excretion of waste products, which, accumulating in the tissues, exert a further poisonous action on the protoplasm. Alcohol is found in the blood in maximum quantity fifteen minutes after it has been administered; it may also be found in the other fluids of the body, especially in the lymph which bathes the tissue cells, supplies them with their nutriment, and removes from them their waste products. Such lymph contains proteid, fat, and carbo-

hydrates which under ordinary conditions are assimilated by the protoplasmic cells; it also contains waste materials which have been excreted by the cells. Unaltered alcohol and the products of alcohol, even in small quantities, when present in this lymph certainly exert a paralysing influence on the cells bathed by it with the result that the processes of nutrition, both assimilative and excretory, are rendered less active, and even such substances as are taken up by the cells are only slowly and partially oxidized, whilst the waste products that should be excreted along with partially digested food materials continuing to accumulate, the cell is clogged and starved simultaneously.

In many alcohol drinkers who, presumably, are otherwise healthy, there is often an excessive accumulation of subcutaneous adipose tissue. This in itself is not recognized as an abnormal condition, but when in such cases we find a similar accumulation of fatty material in the connective tissue between the muscle fibres of the heart wall or in the liver cells, positions in which it is not present, permanently at any rate, in healthy individuals, we naturally suspect the healthiness of the process. In the liver cells fat should be present, normally, for a comparatively short time only after food has been taken, and for a definite interval after the process of digestion has commenced. In the case of a patient who has taken large quantities of alcohol during life, this fatty condition, often very marked, of the heart or liver, is found to have persisted after the patient has become thin or emaciated, the pathological process continuing even after the fat has disappeared from the subcutaneous tissue and from the omentum.

In alcoholic patients, however, a second fatty change of a much more serious character is often met with—fatty

degeneration. Here the protoplasm appears to undergo marked degenerative changes, fatty material being formed at the expense of the proteid substance of the cells. This fatty change appears to be almost identical with a condition described by Bauer¹ as being present in the protoplasm of the starving dog. Such an animal, after using up the subcutaneous fat, and sometimes even that stored in the omentum, is compelled to draw for its further supply of heat-giving fat upon the protoplasm of the cells of such important organs as the heart, liver, muscles, etc., the molecule of this active protoplasm being broken down into a fatty molecule and a waste nitrogenous molecule, the cells of these various organs becoming wasted and the organs atrophied.

Certain other poisons, ether, phosphorus, arsenic, and some of the products of metabolism and of disease-producing bacteria, all appear to act in a somewhat similar fashion. Alcohol, therefore, must be considered as capable of inducing changes similar to those set up by starvation and by certain organic and inorganic poisons. It is found that prolonged muscular exertion in which sufficient time is not allowed for rest and repair is followed by similar results, and it may be pointed out that alcohol, which is so frequently given to starving patients and to those who have over-exerted themselves, simply accentuates those conditions which it should be our aim to ameliorate, especially as between alcohol poisoning and starvation there is found to be the following essential difference. In the latter much of the subcutaneous, omental, and other fat is used up before the parenchymatous cells of the various organs are attacked, but in alcohol poisoning this is not the case, and

¹ Bauer : "Zeitschr. f. Biol." Bd. VII, S. 63, 1871, and Bd. XIV, S. 527. München, 1878.

fatty degeneration of a most marked kind both of the heart and of the liver may occur in very stout patients, in whom, therefore, there still remains a considerable store of subcutaneous and omental fat in addition to that found in such patients between the muscular fibres of the heart and the liver cells.

Bearing on the above it is very interesting to note that the fatty degeneration observed in alcoholic patients is very similar to that met with in patients suffering from diphtheria and other diseases induced by the action of bacterial poisons, and the more carefully these various conditions are analysed the more it becomes evident that the condition set up by the poisons of disease-producing organisms and by alcohol are essentially the same or perhaps, one should say, run on parallel lines.

ALCOHOL AND CARDIO-VASCULAR CHANGES

As the result of the experimental observations of Berkley¹ and the clinical and pathological work of Cowan² and Weichselbaum, it is now fully recognized that alcohol plays a very important part in bringing about fatty degeneration of the heart muscle, a condition so often associated with sudden heart failure. Berkley found in four rabbits out of five in which he had induced chronic alcohol poisoning fatty degeneration of the heart muscle, a condition, he says, which "seems to be present in all animals subjected to a continual administration of alcohol in which sufficient time between the doses is not allowed for complete elimination". Cowan summing up the causes

¹ Berkley: "Johns Hopkins Hospital Reports," Vol. VI, p. 30. Baltimore, 1897.

² Cowan: "Journal of Pathology and Bacteriology," Vol. VIII, pp. 177-98. London and Edinburgh, 1902.

of fatty degeneration of the heart muscle speaks of the presence of a toxic agent in the circulating blood, or in the fluid contained in the small nutrient spaces between the tissues of the heart, as being one of the most important factors in the production of this condition, and amongst toxic conditions so produced he gives a prominent place to alcoholism, classifying it with uræmia and phosphorous, arsenical and chloroform poisonings, the alcohol, like the poisons in these other conditions, acting definitely as a protoplasmic poison by which the nutrition of the heart muscle is affected. He finds that alcoholic cases "bear acute disease badly, failure of the heart always ensuing at an earlier period than one would anticipate". Dr. Mitchell Bruce¹ has called attention to the fact that the direct effects of alcohol on the heart and vessels are so "complicated with the many indirect effects which it produces in these organs, by deranging the functions of alimentation and assimilation, the nervous system and the kidneys, and with the secondary effects on the vessels and heart of chronic nephritis, due to the same cause, that it is difficult to determine which are direct and which are indirect". He maintains, however, with Cowan and others, that dilatation of the heart and alterations of the myocardium are often met with as the direct result of the use of alcohol—acute dilatation, fatty degeneration of the myocardium, being very frequently met with amongst alcoholic patients. I have seen two cases of acute dilatation leading to sudden failure of the heart—both in young, otherwise healthy people, who had succumbed to acute alcoholism in which there was a condition of acute

¹ Bruce, Mitchell: "Lettsonian Lectures on Disease and Disorder of the Heart and Arteries in Middle and Advanced Life," "The Lancet," Vol. L, p. 845. London, 1901.

inflammation of the heart-wall unaccompanied by any primary endo-pericarditis, in which the muscle fibres appeared to be undergoing cloudy swelling and rapid, almost hyaline, changes, whilst between the altered muscle fibres we had an accumulation of leucocytes and a small number of proliferating fixed connective tissue cells. One of these patients was suffering from delirium tremens, the other was just recovering from an acute attack of the same condition. Both died suddenly from heart failure.

In addition to the fatty degeneration of the heart that is so frequently met with in chronic alcoholics there appears, in some cases, to be an increase of fibrous tissue between the bundles of muscle fibres, accompanied by wasting of these fibres.

It has, of course, long been recognized that functional changes leading up to or indicating structural alteration can be present some time before any histological changes can be made out. The heart affected by alcohol is no exception to this rule, as functional changes occur in this organ before any organic change can be made out in the heart muscle, and we are assured by physiologists that alcohol renders systolic output incomplete, increases the diastolic pressure, and causes dilatation of the heart. Dr. Leonard Hill¹ gives the following passage quoted from Stephen Hales: "The heart being in this case like a water mill that is surcharged with a flood both before and behind, its force must needs abate and grow languid," and it has been found that in animals this condition may be produced experimentally by the exhibition of alcohol, the heart becoming so large that it can no longer beat in the fibrous pericardium by which it is surrounded and

¹ Hill, Leonard: Schäfer's "Text Book of Physiology," Vol. II, p. 53. 1900.

finally it ceases, coming to rest in the position of dilatation or distension.

Alcohol when taken into the stomach brings about dilatation of the smaller superficial blood-vessels, a dilatation which appears to be due to paralysis of the nerves carrying the stimuli that set up the contraction of the small muscles surrounding the blood-vessels. Here as elsewhere when there is continuous or intermittent loss of activity of the muscle resulting from changes in the nerve there is brought about a diminished activity or impairment of the nutrition, accompanied by some wasting or even degeneration of the muscle. This degeneration in patients who succumb to chronic alcoholism usually takes the fatty or calcareous form, involving the muscular coat; along with this there is frequently an increased fibrous tissue formation in both inner and outer coats of the vessel.

In old people these degenerative changes are of frequent occurrence and in most cases it is difficult to assign alcohol as their etiological factor, but in young people who have suffered from chronic alcoholism, the connexion between cause and effect—alcohol and the disease—can often be traced, for in many of these cases all other possible causes of change may be eliminated.

Heart failure, then, one of the most frequent causes of death in people of adult and advanced years, is often due to fatty degeneration, and a patient who suffers from alcoholic degeneration necessarily runs a much greater risk of heart failure during the course of acute fevers or from overwork, exhaustion, an overloaded stomach and the like than does the man with a strong healthy heart unaffected by alcohol or similar poisons.

The vascular system, by which the blood is conveyed to

various parts of the body, is sometimes overlooked in our examination of diseased organs, the changes in the vessels being overshadowed by the more marked changes that are met with in the other tissues of these organs. Nevertheless on careful examination of the delicate lining of the blood-vessels and of the spaces that surround these blood-vessels, fairly pronounced evidence of the action of alcohol on these tissues may often be observed.

In chronic alcoholism in which the poison has acted continuously, over a long period, a peculiar fibrous condition of the vessels is met with; this, apparently, is the result of a slight irritation of the connective tissues of the walls of these vessels. The wall of the vessel may become thickened throughout its whole extent or irregularly, and the muscular coat may waste away as new fibrous or scar-like tissue is formed. The wasting muscles may undergo fatty degeneration and, in these fatty fibres, lime-salts may be deposited; the rigid, brittle, so-called pipe-stem vessels are the result. Vessels thus affected cannot bring up to an organ a sufficient quantity of blood which under normal conditions they should supply, and the change is so far-reaching that even the smaller vessels, through the walls of which the nutrient materials make their way out from, and certain of the waste products make their way into, the circulating blood, are so far altered that these walls now constitute a barrier to the proper transmission of nutrient and waste materials, and the nutrition of the surrounding tissue is materially interfered with. This rigidity of the vessel necessarily throws an extra amount of work upon the heart, which now has to drive the blood through a vessel from which it gets no assistance in the form of either muscular or elastic contraction. As the result of this the heart becomes hyper-

trophied or overgrown, a certain amount of reserve power or energy is used up, and this vital organ is often brought dangerously near the marginal line between competence and failure. This calcification or deposit of lime in the vessels occurs in patients who, though not necessarily drinkers, either intermittent or habitual, nevertheless, up to the later years of adult life or the earlier period of old age have taken what they are pleased to call "moderate" quantities of alcohol. This form of vascular disease, at one time scarcely associated with chronic alcoholism, is now held by some of our foremost physicians to be associated first with high tension and then with the further changes which accompany and follow long-continued alcoholism.

ALCOHOL AND THE CONNECTIVE TISSUES

Alcohol, acting upon tissues, appears to bring about degeneration of the cells of the higher forms, but proliferation of the cells of the lower connective tissues. When this proliferation occurs a quantity of scar tissue is usually formed, and in the organs of patients suffering from alcoholic poisoning the two processes may go on side by side, as in the liver; or one may be in excess of the other, as in the heart or the kidney. Dr. F. W. Mott maintains that different tissues are affected by alcohol according to their power of resistance, the weaker tissues being first attacked, so that in one case there may be fatty degeneration of the liver, in another scar tissue formation and what is known as chronic alcoholic cirrhosis (hobnail liver, gin drinkers' liver). The stages of these connective tissue changes are well illustrated during the course of inflammation of the liver. First there may be an acute inflammation characterized by dilatation of the blood-vessels, the presence of

numerous scavenging cells, and a gradually increasing number of the large scar tissue-forming cells. After a time the inflammatory process becomes less active, the cells do not proliferate so rapidly, they form fibrillar tissue which constitutes the scar tissue, and this, like the scar tissue in other parts of the body, has a great tendency to contract.

In chronic alcoholic cirrhosis the scar tissue appears, in many cases, to be formed almost directly, though on careful examination it will be found that here and there, as in the more acute inflammatory processes, there is usually some evidence of the cellular origin of the new tissue, and also of the presence of a number of the scavenging cells—certain indications of the presence of an irritant, and probably also of the accumulation of waste products in the tissues. As this new scar tissue increases in quantity the liver cells waste away. They may undergo fatty degenerative changes, and may disappear altogether, the fibrous tissue advancing and gradually “replacing” them. Whether this scar tissue formation goes on in the heart, in the kidneys, in the liver, in the blood-vessels or in the nerves, the process is essentially the same, and it must be associated with the accumulation of poisonous or waste products in the lymph spaces through which the nutrient fluids pass to the tissues. In all cases the functions of the most highly developed or most weakened cells are those first affected. Such cells become wasted and degenerated, and after this new tissue—never highly developed, indeed often of a very low type, corresponding to the white scar tissue that is seen in an old wound—comes to take their place. The contracting scar tissue of a wound has its exact homologue in the contracting scar tissue that is met with in the liver, in the kidney, and in the brain.

ALCOHOL AND THE BRAIN

Of the changes which take place in the brain as the result of the administration of alcohol, our knowledge would be very limited had it been necessary to confine our attention to the human tissues, as here are met so many possible sources of error, both of observation and interpretation. Several observers¹ have, however, carried on experiments on acute alcoholism in the lower animals. All are at one in recording marked degenerative changes in the inner lining of the small vessels of the brain, and an exaggerated condition of waste—a “clogging” due to the accumulation of rapidly produced waste products in the lymph spaces in the outer walls of the vessels. It has been noted also that in some cases small clots are found in the vessels—clots which interfere with the transmission of the blood along the normal channels. This clogging of the vessels and of the spaces around them affords evidence that the tissues are breaking down very rapidly, but its chief importance appears to lie in the fact that it leads to continued interference with the nutrition of the surrounding tissues, thus playing a part in the determination of further degenerative changes.

Alcohol in large doses, given to one of the lower animals or to a human subject, sets up remarkably definite changes in the nerve cells, especially in those situated near the “plugged” vessels and lymph spaces already referred to. The prepared and stained nerve cell when examined under the microscope first loses its peculiar mottled appearance,

¹ Dehio : “Centralbl. f. Nervenhe. u. Psychiat.,” Coblenz u. Leipzig, N.F., VI, p. 113, 1895 ; Colin C. Stewart : “Journ. Exper. Med.,” N.Y., Vol. I, p. 623, 1896 ; Berkley : “Johns Hopkins Hospital Reports,” Vol. VI, pp. 1-108, 15 plates, Baltimore, 1897 ; and “Brain,” Vol. XVIII, pp. 473-96, 5 plates, London, 1895.

a mottling that characterizes the normal cell when stained with certain reagents. Moreover, marked changes take place in the branching processes running out from the cells; these changes are somewhat like those to be described in chronic alcoholic poisoning, though as a rule they are not nearly so regular nor are they so far advanced.

When we come to the consideration of the brain cells in chronic alcoholism, we are led to the conclusion that the changes in these cells are those of imperfect nutrition, though they correspond in many ways to the changes that are induced by the action of certain other toxic substances. Running out from the normal nerve cell are a series of long processes on which are arranged numerous delicate lateral twigs. These long processes taper off slowly and regularly for a short distance from the base of the cell, after which they are prolonged as threads of fairly constant size throughout the remainder of their length. In chronic alcoholism the body of the cell is often altered; it may be atrophied and fatty, but in some cases even where no very marked alterations can be demonstrated in the cell itself these long processes are seen to undergo remarkable changes. Little swellings make their appearance at regular intervals, first near the tip of a process, and then gradually nearer the body of the cell, so that after a time the process looks almost like a string of beads. At the same time, some of the lateral twigs become swollen and shortened, whilst others disappear; in advanced stages the bulk of them so disappearing. Let us see what all this means. The nerve cell may be compared to a small electric battery, the long processes leading from it to wires, and the small twigs to little associating wires, corresponding to induction coils bringing the various processes into association with one another and passing on the current from

cell to cell in different directions. Whenever we have irregular thickening and shortening of the long fibres, and disappearance or stunting of the small lateral twigs, certain of the "communications" between cell and cell are done away with. So many of the connecting wires may be cut out, and the interference with the passage of nerve impulses along the nerves so marked that commencing with the more delicate processes of thought and going on to the machinery by which "we live and move and have our being," the nervous mechanism is gradually thrown out of gear. It might be suggested that all this may be met with in the brain of a slowly alcoholized rabbit, an animal not accustomed to take alcohol, but that it does not follow that the same changes result from the same cause in the human brain. Berkley, however, points out that these changes may be demonstrated in the brain of a patient who has suffered from chronic alcohol poisoning. They vary in degree only, though the resemblance in some cases is more marked, in others less so. These changes, he says, "are not peculiar to the effects of alcohol; they may be reproduced by any irritant drug or bacterial toxic product circulating in the blood and acting for a considerable time on the living protoplasm of the nerve cell"; but again, "alcohol, which was supposed to be the least deleterious of all the series, has a very definite and destructive effect upon the nerve cells".

ALCOHOL AND THE PERIPHERAL NERVOUS SYSTEM

At one time the paralysis which is met with in alcoholics and other alcoholic nervous phenomena were ascribed, almost entirely, to the occurrence of changes in the peripheral nerves. Now, however, that marked pathological changes have been demonstrated in the nerve cells, there appears to

be a danger that we may go to the opposite extreme and discount the poisonous action of alcohol on nerve fibres. The nerve fibre may be looked upon as an electric wire or cord with an outer or insulating covering. In the presence of diphtheria poison or of alcohol given in repeated doses over long periods, this outer or insulating cover breaks down, whilst after a time the central core, the axis cylinder, as it is called, becomes irregularly thickened and constricted, and instead of a solid rod of equal thickness throughout, we have a structure presenting the appearance of a string of beads. Wherever this irregular thickening is in evidence, the nervous impulses are transmitted along the nerve very irregularly and intermittently; the patient finds that his experience is now no longer to be relied upon; he is thoroughly at fault, and is unable to translate the sensations transmitted by these altered nerves, or to keep his various muscles under control, simply because his experience no longer informs him what impulse he should send along a certain nerve in order to obtain the required stimulation of a muscle or group of muscles. In addition to these changes in the nerve fibres themselves, there is, as the result of the circulation of alcohol in the nutrient spaces of the connective tissue supporting the nerves, an increase in the amount of fibrous tissue formed between the nerve fibres, just as there is around the small vessels of the liver, kidney, and other organs of alcoholic patients. These changes in the nerves usually come on very rapidly, and in many cases appear to result from the action of special poisons manufactured by certain disease-producing micro-organisms. It is now generally accepted, however, that these special poisons act far more certainly, more rapidly, and more intensely when alcohol has been quietly working away and doing its work for some time before the incursion

of the second poison. Dr. Alexander James¹ has drawn special attention to this feature. Arguing from a series of observations made on cases of inflammation of the nerves, he came to the conclusion that in most of these cases the alcohol had been inflicting damage on the tissues long before the onset of the final inflammation of the nerves of which the special symptoms are the manifestation. He reports a case in which alcoholic poisoning had previously helped to cause the development of heart damage, and others in which diseases of stomach, liver or kidney had been induced by alcohol before any inflammation of the nerves had manifested itself, and he points out that this may be compared to the delirium tremens so apt to supervene in alcoholic patients suffering from acute diseases such as pneumonia or typhoid fever, although delirium tremens is seldom or never met with in non-alcoholics suffering from these diseases.

ALCOHOLISM AND SPECIFIC INFECTIVE DISEASES

During recent years the study of the relation of alcohol to specific infective diseases has been one in which many thoughtful physicians and surgeons have interested themselves, and a considerable amount of evidence that alcoholized patients and animals are more readily attacked by the various febrile diseases—inflammation of the lungs, erysipelas, typhoid, and other fevers—than are those not alcoholized, has been accumulated. Deléarde,² Laitenan,³

¹ James, A. : "Edinburgh Medical Journal," 1896.

² Deléarde : "Ann. de l'Inst. Pasteur," t. XI, p. 837. Paris, 1897.

³ Laitenan : "Acta Soc. Sc. Fennicae," t. XXIX, No. 7. Helsingfors, 1900.

and Abbott¹ have put forward a considerable number of very cogent reasons, derived from observation and experiments on animals, why alcohol should not be given in cases where micro-organismal poisoning is an important factor. It has been fully demonstrated that it is possible to protect animals against severe attacks of certain diseases by the production in them of mild attacks of these same diseases. A child that has suffered from scarlet fever seldom contracts that disease a second time. Similarly, a patient who has had smallpox or typhoid fever is usually immune against a second attack. In order to put this matter to the test Deléarde selected three diseases (1) rabies or hydrophobia, (2) tetanus or lockjaw, and (3) anthrax, the splenic fever of cattle. In the case of both tetanus and anthrax the specific micro-organism producing the disease had been described and previous experimenters had been successful in inducing to all these three diseases a diminished susceptibility—an artificial immunity. All three diseases may be induced in the acute or fatal form, or if the virus be weakened by special methods, a milder attack, which under ordinary circumstances protects against more severe attacks, may be set up.

ALCOHOL AND HYDROPHOBIA OR RABIES

Working in Calmette's laboratory in Lille, Deléarde² gave to each of a number of rabbits a quantity of alcohol, commencing with about one and a half drachms a day, and gradually increasing the dose to two and three-quarter

¹ Abbott: "Journal of Experim. Medicine," Vol. I, p. 458. New York, 1896. See also "Report of the American Committee of Fifty to investigate the Alcohol Question". Boston and New York, 1903.

² Deléarde: "Ann. de l'Inst. Pasteur," t. XI, p. 837. Paris, 1897.

drachms. This quantity of alcohol undoubtedly interferes with the nutrition of the rabbit, its administration being followed by "slight falling off in weight, but after a time this fall ceased, and then the animal gradually returned to its normal weight". The animal had, so to speak, accommodated itself to its new conditions, but although it had regained its normal weight very marked changes had taken place in its body fluids and tissues. He then vaccinated some of these alcoholized animals (continuing the alcohol during the period of treatment) and, at the same time, several non-alcoholized animals, against hydrophobia. He found that whilst the animals that were not receiving alcohol had acquired a very high degree of immunity, the animals that had been alcoholized throughout had received practically no increased immunity to a fatal dose of the hydrophobia poison. The animal remained just as susceptible to the disease as if no attempt had been made to vaccinate it; the alcohol had so interfered with the reaction between the vaccine and the tissues that no immunity could be set up. Then taking an animal that had received alcohol for a certain period, as in the first set of experiments, he discontinued the alcohol, and after a few days vaccinated the rabbit with hydrophobia virus. He found that a certain degree of protection was now undoubtedly conferred, but equally undoubtedly it was not so marked as when no alcohol had been given at any stage. As a further experiment he took animals that had received no alcohol up to the end of the immunizing period and gave them alcohol. None of the animals injected with a lethal dose of the virus died, and a considerable degree of immunity evidently remained. It appears then that, although alcohol could interfere with the efficacy of the vaccination against hydrophobia, it could not destroy the effects of vaccination

when these had once been produced. In fact his experiments convinced him that acute alcoholism has the effect of preventing the acquisition of the condition of immunity, but that the effect on the tissues is not so marked when the administration of alcohol is stopped, the tissues regaining some of their original powers and properties. Finally when the property of immunity has been acquired, alcohol may be given even in considerable doses, but the cells and fluids of the body between them will still hold on to this acquired immunity. Deléarde reinforces his experimental work by clinical observation and refers to an alcoholic patient bitten by a mad dog who appeared to be much more susceptible to the action of the hydrophobia poison than a second patient bitten and inoculated under otherwise less favourable conditions. The first case, a man, aged thirty, of intemperate habits, was bitten on the hand; though subjected to a careful and complete anti-rabic treatment he succumbed. The control case was a child, a boy, aged thirteen years, who was bitten on the face by the same dog and on the same day. The course of anti-rabic treatment was exactly the same as in the first patient, but the boy, although suffering from a much more severe bite, inflicted in a position that is usually recognized as being very highly vulnerable — the head and face — recovered. Deléarde was so strongly impressed with what he saw in the wards and in his experimental animals that he strongly advises patients who have been bitten by mad dogs to abstain from the use of alcohol not only during the period of anti-rabic treatment but also for at least eight months afterwards, during which period, under ordinary conditions, there appears to be a steady and persistent increase of the immunity acquired.

EFFECTS OF ALCOHOL GIVEN BEFORE (AND THEN STOPPED), DURING, AND AFTER, THE "PROCESS OF IMMUNIZATION"

	Before.	During.	After.
Rabies	+	-	+ -
Lockjaw	+ -	-	-
Anthrax	+ -	-	+ -

+ Production of good immunity.

+ Production of slight immunity.

- Production of no immunity.

ALCOHOL AND TETANUS

In the case of lockjaw (tetanus) alcohol appears to play an even more important part in interfering with immunization, for animals that have already been vaccinated against lockjaw lose their insusceptibility on being alcoholized and may then be readily infected. Vaccinated against lockjaw and simultaneously alcoholized, rabbits may acquire a slight immunity, but it is very difficult indeed under these conditions to protect them against lockjaw poisoning. As regards those cases in which animals are first alcoholized and then vaccinated against lockjaw a certain insusceptibility may be acquired if the exhibition of the alcohol be stopped as soon as, or before, the process of vaccination is begun. It is evident from these experiments that even after immunity has been acquired alcohol may destroy it, an effect which should surely be remembered in connexion with treatment. When a patient is recovering from an attack of one of the specific infective

diseases he recovers because, during the course of the disease, he has acquired a certain specific immunity which results from changes that have taken place in the tissues and fluids of the body. If alcohol when administered impairs this immunity in any way, or interferes with its production, the patient's chance of recovery must necessarily be diminished.

ALCOHOL AND ANTHRAX OR SPLENIC FEVER

Continuing his experiments Deléarde was unable to confer immunity against anthrax on animals that were alcoholized during the period of vaccination, and although animals first alcoholized and then vaccinated—the alcohol being stopped during the period of vaccination as in the two preceding cases—acquire a certain degree of immunity, they rapidly lose condition when infected, and suffer more severely than do the non-alcoholized animals, vaccinated at the same time and infected in the same manner.

Laitenan working in Professor Fraenkel's laboratory at Halle and using much smaller doses than those used in Deléarde's experiments, four to six drops per pound weight of the animal, and exhibiting the alcohol in a well-diluted form and over long periods—weeks or even months—before the final stage of experiments was entered upon—and continued for some time afterwards, experimented on the bacilli of splenic fever, tubercle bacilli—the bacilli of consumption—and diphtheria toxin—the poison produced by the diphtheria bacillus. As the result of numerous experiments this observer was convinced that alcohol, whether introduced subcutaneously or by the stomach, induces in the animal body diminished resistance to all the above organisms and toxins.

ALCOHOL AND SEPTIC INFECTION

Abbott worked out the same question in connexion with the predisposition of animals to the attacks of certain pus-producing organisms—those of suppuration and blood poisoning. He convinced himself that the normal resistance of rabbits to these organisms is greatly diminished when alcohol is given to the stage of acute intoxication. Not only was pus formed more readily and at an earlier date, but it was formed in larger quantities, and an animal to which alcohol had been administered usually succumbed to the suppurative process much more readily than did a non-alcoholized animal. The experience of surgeons affords confirmation of these experiments. Indeed, operations on alcoholic patients are dreaded by all surgeons whatever may be their opinion on the general question of total abstinence from alcohol.

ALCOHOLISM AND TUBERCULOSIS AND SYPHILIS

Alcohol, far from being a valuable drug in the treatment of tuberculous disease, as was at one time supposed, is now looked upon as one of the great predisposing factors in the production of both acute and chronic pulmonary tuberculosis, and it is generally accepted that in alcoholic patients tuberculosis is far more likely to assume an acute and generalized form than it is in the non-alcoholic patient, for as Dr. Dickinson¹ said: "We may conclude, and that confidently, that alcohol promotes tubercle, not because it begets the bacilli, but because it impairs the tissues, and makes them ready to yield to the attack of the parasites". In France in the districts in which the greatest amounts of alcohol are consumed the highest mortality from tuberculosis is met with,

¹ Dickinson: The Baillie Lecture on "The Seed and the Soil," "The Lancet," I, p. 299. London, 1902.

alcohol apparently acting as a devitalizing agent and rendering the person indulging in it to excess a more easy prey to infection. Baudron in 1901 showed that a consumption of alcohol of 12·5 litres per person corresponded to a mortality from tuberculosis of 32·8 per 1000 living, whilst the consumption of 35·4 litres of alcohol per person corresponded to a death-rate from tuberculosis of 107·8 per 1000.

Newsholme writes: "As poverty is one of the main causes of premature sickness and death, as it is especially in the crowded tenements of the poor that pulmonary consumption—the chief cause of premature adult mortality—is spread, we have opened up by the abolition of alcoholic drinking the possibility of an immense reduction in human misery and disease".¹ All the deaths due to alcoholism are not returned as such. What an arousing of public opinion there would be, could an accurate return under this heading be made. Alcoholism both in its acute and chronic forms, cirrhosis of the liver, many cases of pneumonia, are now accepted even by the uninitiated as being in a very direct fashion attributable to the consumption of large quantities of alcohol, but alcoholism, acute or chronic, is recognized in an exceedingly small proportion of the cases that are actually the direct outcome of the taking of small quantities of alcohol though often at very short intervals.

The manifold relations of tuberculosis to alcoholism are only now coming to be understood, but it has been recog-

¹ The chapter on "Alcohol and Public Health," in the 1907 edition of "The Drink Problem," p. 126, dealt with this subject, and the Rt. Hon. John Burns, M.P., late President of the Local Government Board, puts the matter equally strongly when he stated that from 25 to 51 per cent of the total poverty in certain areas is due to intemperance.

nized for some time that "the death-rate from phthisis (pulmonary tuberculosis) is disproportionately large among those engaged in occupations in which there is an exceptional amount of alcoholic indulgence.¹ Here, however, as Dr. Newsholme points out, the relationship is dual. On the one hand, alcoholic indulgence has a marked action in lowering resistance to infection by the tubercle bacillus, whilst on the other, the intemperate, frequenting public houses, expose themselves in a marked degree to the risk of massive infection from the tubercle bacilli thrown out with the expectoration of tuberculous alcoholics who are not only more infected but are also more careless.

Syphilis, a disease which may be very appropriately placed alongside tuberculosis, is perhaps less dependent upon the weakening of the tissues by alcohol and increased susceptibility than almost any of the specific infective fevers, though even here it is probable that alcohol exerts some influence in increasing susceptibility; for as already noted, the "complement" of the blood is materially diminished by the ingestion of alcohol, and it is now recognized that the results of a Wassermann reaction made on the blood of a patient who has taken a fairly full dose of alcohol are absolutely unreliable. Indirectly, however, alcoholism is answerable for nearly half of the recorded cases of syphilitic infection, and no one knows for what proportion of the unrecorded. As in the case of alcoholism, syphilis in the Registrar-General's returns are returned under a number of euphemistic pathological descriptions, and probably not one quarter of them are accurately entered and certified,

¹ See Dr. Arthur Newsholme's work on "The Prevention of Tuberculosis," and his chapter on "Alcohol and Public Health," in the first edition of this work.

but as Newsholme says: "According to special investigations which have been made it appears probable that nearly half of the infections with syphilis are received when under the influence of alcohol". The same is probably true of other venereal diseases.

ALCOHOLISM AND OTHER ACUTE DISEASES

An old teacher of mine for whom I had the deepest respect and affection, Dr. Muirhead of Edinburgh, maintained that the death of a case of pneumonia uncomplicated by alcoholism was a thing practically unknown in his experience. This held literally true until influenza made its appearance in 1889. Since then those who follow this question have had reason to modify the above opinion, but curiously enough only in the cases of pneumonia which follow influenza, in which the influenza poison appears to assume the rôle that at one time was monopolized by alcohol in acting as a cumulative poison. Let us take another example. McLeod and Milles¹ point out that in Shanghai cholera is exceedingly rare amongst the European section of the resident population, but that amongst sailors who have indulged in alcoholic excesses it is of far more frequent occurrence and assumes a much more fatal form; and they consider that alcohol plays a very important part in predisposing to Asiatic cholera and in increasing a patient's susceptibility to the disease.

Abbott, Deléarde, and Laitenan, then, supported by Fraenkel, Calmette, Pearce Gould, Horsley, and others are unanimous in their condemnation of the administration of alcohol, even in comparatively small doses, to patients suffering from the above-mentioned specific dis-

¹ "Proc. Roy. Soc., Vol. XVI, p. 18. Edinburgh. "Rep. Lab. Coll. Phys.," Vol. I, p. 161. Edinburgh, 1889.

eases. It is also recognized that in certain other infective diseases—pneumonia ; or intoxications—diphtheria, tetanus, snake-bite, etc., the use of alcohol is not useless merely ; it is actually harmful.

We are too apt to leave the nervous and mental factors out of calculation when speaking of deaths due indirectly to alcoholism. How many cases of suicide are the outcome of the depression resulting from the unsatisfied craving for drink—with the morbid mental state with which this craving is associated ? The depression following a purely morbid condition or artificial state though it grows on what it feeds may be temporarily alleviated by the administration of fresh doses of alcohol ; but once the supply is stopped voluntarily or involuntarily, as the case may be, the physical discomfort and mental depression are so marked and profound that the patient is often tempted to end it all by self-destruction. On the other hand, during certain stages of alcoholic excitement, the brain becomes so irritable that the patient, passing from his morbidly depressed condition, and unable to distinguish between internal and external irritation, too often ascribes his woes to the actions of those who surround him. There is accompanying it all a great loss of inhibitory power, and the excited and irritable alcoholic ends by having homicide laid to his or her charge.

Diabetes and glycosuria are now reckoned amongst the conditions arising in connexion with alcoholism, especially chronic alcoholism. When we realize how delicate is the balance between the tissues and the blood, and when we remember that alcohol does undoubtedly modify if but slightly the physiological content of the blood, we cannot be surprised that metabolic processes, slightly modified over long periods, in the muscles, in the liver, and in the pancreas, attended later by modified excretory action in the kidneys

and other excretory organs, may lead not only to diabetes and glycosuria but to Bright's disease of various types.

Bearing on this point Horsley and Sturge, in their excellent work on "Alcohol and the Human Body," give a comparative table of the death-rates from certain diseases in the State of Kansas—an abstaining State—and the whole of the United States of America, most of them non-abstaining:—

Disease.	Death-rate per 100,000.	
	Kansas (1913).	U.S.A. (1912).
Tuberculosis	64.5	149.5
Diabetes	12.9	15
Pneumonia and Broncho-pneumonia	85.5	132.2
Bright's disease	64.5	92.5

and bearing on another point already raised we have the following instructive figures:—

	Kansas (1913).	U.S.A. (1912).
Suicide	10.9	16
Homicide	4.6	6.5

For a more comprehensive discussion of alcohol as a source of disease the reader should consult Horsley and Sturge's well-known work.¹ These authors elaborate very fully the cumulative and adjuvant action of alcohol in the production of various diseases, in the reinforcement of certain metallic and other poisons, and in accentuating the effects of these poisons in certain diseases, e.g. syphilis. I cannot refrain, however, from quoting a case referred to by them as affording one of the most striking exposures of a fallacy that, often attacked, has usually succeeded in escaping in an obscuring cloud. They note that in "The Lancet" of 11 June, 1904, Dr. John Hay records and compares the results of treating cases of acute lobar pneumonia, 150 in number, with alcohol and without, at

¹ Horsley, Sir Victor, and Sturge, Mary: "Alcohol and the Human Body". Popular edition. London: Macmillan, 1915.

the Mill Hill Infirmary. "The patients in each section were of the same type, they were drawn from the same districts, and were attacked at the same time of the year. The nursing was the same, and the food came from a common kitchen. Under such similar conditions the result in these 150 cases was definitely, one might say startlingly in favour of that treatment in which alcohol was not administered." After eliminating all the cases dying within twenty-four hours of admission, the mortality of those who had no alcohol administered to them was 21·4 per cent, whilst amongst those who were treated with alcohol the mortality was 36·8 per cent, or 15 per cent difference in favour of those treated without alcohol:—

	Section I. Treated Without Alcohol.	Section II. Treated With Alcohol.
Total cases	47	103
Average age	34	32·8
Admitted moribund	5	16
	<hr/>	<hr/>
Deaths	42	87
	9	31
Mortality	21·4 per cent	36·8
Difference in mortality	15 per cent.	

Dr. Hay attributes the failure of alcohol to its total depressant action on the heart, already greatly weakened by the pneumonia poison, and hampered by the altered condition of the blood and the choked condition of the air-vessels and blood-vessels of the lungs.

One condition that in recent years has come in for special consideration in its relation to alcoholism, and especially by the statistician, is cancer, which, as Sir Alfred Pearce Gould has pointed out,¹ results specially in those patients in whom the cells of a part are worn out and of lowered vitality. Amongst the agents which produce this condition

¹ See Sir Alfred Pearce Gould's "Bradshaw Lecture on Cancer".

he gives a prominent place to alcohol. In this contention he is supported by the figures extracted from the statistics of the United Kingdom Temperance and General Provident Institution by the Right Hon. Sir Thomas Whitaker, P.C., who demonstrates by the help of these figures obtained from large groups of both abstainers and moderate drinkers that the death-rate of moderate drinkers from cancer is double that of abstainers. Sir Alfred Pearce Gould could have no better corroboration of his position.

ALCOHOL AND THE MECHANISM OF IMMUNITY

It is evident that organs in which there is degeneration of the special parenchymatous cell or in which there is a marked increase in the amount of fibrous tissue will be less efficient and the individual will therefore be in a more susceptible condition than if they were healthy. But as these changes in the organs do not account for certain of the phenomena observed in connexion with the Pathology of Alcoholism the following points may be considered.

In pneumonia and snake-bite, when recovery takes place, an invasion of the parts affected by a large number of leucocytes or white blood corpuscles is invariably observed. Deléarde insists that this invasion is essential to recovery from any of the microbic intoxications or infections as is also the integrity of the leucocyte. Metchnikoff and his pupils maintain that in the presence of alcohol just as in the case of opium poisoning this integrity is not maintained. Massart and Bordet¹ demonstrated that alcohol, even in very dilute solution, drives away the leucocytes, and if alcohol is circulated in the blood even in very

¹ Massart and Bordet: "Journ. de Med. de Chirur. et de Pharmac.," 21 fevrier. Bruxelles, 1900. "Ann. de l'Inst. Pasteur, t. V, p. 417. Paris, 1891.

minute quantities the leucocytes cannot push their way into the blood at all readily and therefore cannot be transported to the seat of the disease. Alcohol thus prevents the white cells or leucocytes from coming up to attack and repel the invading organisms. It also assists other poisonous substances that in more or less concentrated form have the power of repelling leucocytes, acting along with them, cumulatively, driving away or it may even be paralysing these white cells of the blood. The leucocytes act as a kind of sanitary police. They appear wherever dead matter is to be removed, they attempt to prevent the invasion of the body by disease-producing organisms, and once they come to grips with their opponents they die rather than give way. Before coming to grips, however, if their opponents appear to be too strong for them they may attempt to keep out of the way for a time until such opponents are weakened or they themselves have had time to prepare for the fight. Disease-producing organisms getting into the tissues of animals and patients during the time that alcohol is holding back the leucocytes and meeting with no resistance from them entrench themselves strongly, with the result that the leucocytes are unable to drive them out, and a severe, often fatal, attack of disease ensues.

ALCOHOL AND PREDISPOSITION TO DISEASE

Alcohol not only interferes with the reaction of cells to poisons, thus checking the production of immunity, but beyond this, it may actually reinforce the poison formed by the disease-producing organisms, often with results most disastrous to the patient.

It has been found that lowering of the temperature of the body renders both man and the lower animals more

susceptible to the attacks of infective disease. Alcohol, especially when given in large doses, may bring the temperature below the normal; during this temporary fall the body is specially susceptible to disease. This fall appears to be due to marked dilatation of the blood-vessels of the surface and increased activity of the sweat glands, the normal reaction against cold being paralysed by alcohol. Small doses of alcohol may result in the lowering of the temperature, only half a degree, say, but even that under certain conditions is dangerous; when large doses are given the temperature may fall very considerably. The lowest temperatures recorded in living human beings have been observed in drunken persons. The temperature of a normal rabbit exposed to intense cold falls only about 5° F., whilst the temperature of an alcoholized rabbit may fall as much as 34° F. In a normal guinea-pig exposed to the cold the fall is only from 0.2 to 0.36 of a degree, whilst in an alcoholized guinea-pig similarly exposed the fall may be as much as 18° F. One of Pasteur's best known experiments was that of placing a hen—a bird absolutely insusceptible to anthrax under ordinary conditions—with its feet in cold water, and thus lowering its temperature until it became susceptible to this disease. We must, however, look even beyond this factor of temperature in our search for predisposing causes. Not only do the cells of the body, but the fluids in which these cells are carried which give material to, and receive waste or other excretory products from them, play an important part in resisting disease. It has been demonstrated by Ehrlich and his school that the introduction of certain bacteria or of their products, and even of certain albumens into the body, modifies these fluids in a most remarkable manner. For example, if Koch's new tuberculin—which is really an

emulsion of dead tubercle bacilli—be introduced into the body of a patient, certain substances are formed in the fluid of the blood which have the property of preparing tubercle bacilli to be taken up by the leucocytes. Similarly, if egg albumen be introduced in the abdominal cavity of the rabbit, it is taken into the blood, and in the process of assimilation by the body it appears to affect the cells in such fashion that they secrete a substance into the blood which, added to egg albumen in solution outside the body, brings about its precipitation. Alcohol appears to interfere with these processes. Certain of the phenomena manifested when no alcohol is given are not produced when it is administered.

According to Ehrlich¹ the cells of our body may be looked upon as a central group of molecules, sometimes a very complicated group, around which are arranged a series of affinities, links or hooks—receptors or side-chains, as they are called. To these hooks albuminoid groups are attached, and it is through the hooking on of these albuminoid groups that the cell is nourished. Without these side-chains it could not link on to itself the material it requires for its nutrition. These receptors or hooks have, as we have said, a special affinity for certain albuminoid molecules which, however, have to be linked on in a special fashion. Some of the molecules, acting as anchoring chains, have one form of hook at one end and another at the other; one hook holding to the cell, the other attaching the molecule to be absorbed. Without these intervening and accommodating links certain substances could never become connected up with the cell. This, the connecting link, is spoken of as a “fixative,” and it is a

¹ Ehrlich, P. : “Collected Studies on Immunity”. English translation by Dr. Charles Bolduan. New York, 1906.

curious fact that such links are also met with in the blood in considerable numbers. The fixative is very stable and is not destroyed by a high temperature. At the outer end of this fixative, and hooked on to it, as it were, are certain groups of atoms which appear to be derived from living cells. They have certain characteristics similar to those of the ferments, and are destroyed at a temperature of from 52° to 55° C. They appear to play a most important part in the nutrition of the cell, and, curiously enough, an equally important part in poisoning it. These are called complements or alexins. Abbott and Bergey¹ find that the administration of alcohol brings about a reduction in the number of these complements in the blood, and they hold that this reduction accounts partially, at any rate, for the impaired power of nutrition met with in alcoholized animals. They say that there is insufficient complement to combine with the necessary nutrient proteids or albuminoid substances circulating in the blood. Further than this, however, they hold that the lack of these complements is important from the fact that without them it appears to be impossible for any immunity against disease to be set up in an animal. The complement is said to be derived from the white blood cells of the body, or from the connective tissue cells, or from both, and it is evident that any diminution in the amount of the complement present may be the result of lowered or markedly altered activity of the leucocytes and of certain other cells of the body. The diminished amount of complement in the blood may undoubtedly be associated with the diminished number of circulating leucocytes observed by Laitenan; and it may be accepted as an indication that the leucocytes are

¹ Abbott and Bergey, "Centralb. f. Bakteriöl. u. Parasitenk.," 1 Abt., Originale, Bd. XXXII, S. 260. Jena, 1902.

not capable of, or at any rate are not, responding to the calls that are being made upon them in connexion with the nutrition and scavenging of the body and that they are not assisting in the production of the immunity that under the influence of special stimulating substances generated in the body should be going on during the course of infective fevers. It may be accepted then that alcohol interferes with the process of phagocytosis. Moreover, that the microphages and the macrophages—the cells both small and large entrusted with the scavenging work of the body—are, by alcohol, rendered less active, not only as regards their movements but also as regards their power of taking in foreign bodies and of manufacturing complement.

ALCOHOL AND MORTALITY STATISTICS

In recent years statisticians have paid considerable attention to the comparative mortality figures published from time to time by the Registrar-General. The most important group was first published by Dr. J. W. Ogle for the years 1871-80. He took as his standard the number of deaths among 61,215 men, aged twenty-five to sixty-five, distributed in a given proportion at different ages, selecting this figure because it would give in England, as a whole, 1000 annual deaths. Taking this as his standard he calculated the mortality figures of males at the above ages engaged in different occupations.

Dr. Tatham, setting out similar figures for the three years 1890-92 and again in 1908 (supplement to the Registrar-General's sixty-fifth report), obtained the following:—

TABLE OF COMPARATIVE MORTALITY FIGURES IN
RELATION TO OCCUPATION

Occupation.	1890-92.	1908.
Gardeners	553	527
Teachers	604	599
Grocers	664	670
Doctors	966	952
Brewers	1427	1324
Inn-keepers	1659	1669
Filemakers	1810	1682

The concurrence of these figures is remarkable. Taken together they are much more striking and convincing than when examined separately. It might be held that accidental conditions, good or bad trade, some special conditions of climate or weather, some effects of epidemic outbreaks of disease might cause an increase or fall in the sick-rates with a corresponding change in the death-rate. The only marked changes seem to indicate that brewers have been somewhat more careful as to their mode of life, and that filemakers, thanks to more strict supervision by Factory Inspectors, and a greater care on the part of masters to provide safeguards for the protection of the men and on the part of men to use those safeguards properly. Everywhere else the figures are practically identical, and we find from the last set of figures that a gardener's chance of living his full span of life is slightly over two and a half times that of the brewer, and that the filemaker has now as good prospects of life as has the inn-keeper.

Taking the 1890-92 figures supplied by Dr. Tatham, we obtain an interesting survey of the relative mortality from each of certain diseases—"among a given number of men of standard age distribution"—stated in terms of that occurring among a corresponding number of occupied males of all classes, the latter being stated as 100.

TABLE INDICATING THE RELATIONSHIP OF ALCOHOLISM AND OTHER MORBID CONDITIONS TO OCCUPATIONS

	Alcoholism and Diseases of the Liver.	Gout.	Diseases of the Nervous System.	Suicide.	Phthisis.	Diseases of Urinary Organs.
Clergy, minister .	50	150	84	50	36	95
Draper . . .	117		124	107	141	88
Shoemaker . .	42	100	99	93	139	98
Occupied Males .	100	100	100	100	100	100
Inn-Keeper . .	733	650	195	229	140	220
Inn-Servant . .	420	550	132	179	257	188
Brewer . . .	250	500	152	121	148	190
Butcher . . .	228	300	128	164	105	117
Costermonger .	163	150	170	100	239	171
Coachman, cabman	553	300	100	143	124	132

It might be supposed that the traders and workers in alcohol should "have a pull" over certain other traders in some at least of the diseases under consideration. But no; we find them at the head of almost every list, the draper taking only a slightly worse position as regards phthisis, although the shoemaker takes only an equal amount better, the costermonger stands second to the inn-servant in this group. Amongst the suicides, the butcher and the cabman take a somewhat worse position than the comfortably off brewer, but are correspondingly better than the hard-worked inn-servant and the more anxious inn-keeper. It is an extraordinary table, and calls for very careful study of its contents, not only by the pathologist, but by the social worker. The insurance expert has availed himself of the information here offered to him, and has come to the conclusion that "ratings for dangerous occupations call for attention. Among these the most frequent are occupations connected with the drink trade. It is customary to add a 50 per cent extra to such cases,

even if classed as A1 by the medical examiner; but it is probably wiser to follow the usual rule of the more cautious offices and absolutely to decline to accept proposals in such cases".¹

Perhaps no one has been able to give as comprehensively and concisely as has Dr. Newsholme the relation of alcohol to life and sickness insurance, and therefore to mortality and morbidity. He bases his work on the experience of the United Kingdom Temperance and General Provident Institution during the last sixty years. The insured in this society are divided into two sections; in the abstainers' section, for which are eligible only those persons who do not take alcohol as a beverage in any form, the continued adherence of the assured to abstinence is checked by an annual declaration to that effect. If the abstainer ceases to abstain he is transferred to the non-abstainers' or "general" section, whilst if non-abstainers become abstainers they are generally eligible for transfer to the abstainers' section. The great importance of these figures is that the insured are from the same social classes, the average amounts insured for are the same, and the numbers are so large that they may be taken as a fair material on which to base a comparison.

Of 31,776 whole-life policy holders in the general section passing through 466,942 years of life, 8947 died; whilst of 29,094 whole-life policy holders in the abstaining section passing through 398,010 years of life, 5124 died. It is remarkable that up to twenty years of age and between seventy-five and eighty the relative mortality amongst the abstainers is slightly higher than amongst the non-abstainers, but that for all other periods, and especially

¹ See Symes Thomson's article in "Allbutt's System of Medicine," Vol. I. London.

during what we may call the active working period of life, the abstainers' relative mortality is considerably lower than that of the non-abstainers.

In the general section the mortality amongst those up to the age of thirty-four "was in excess of the wider ordinary experience (O_m) compiled by the Institute of Actuaries, but that for all higher ages, and throughout the more important part of the mortality table, it shows a remarkable agreement with the ordinary rate. The expected deaths from age thirty-five upwards were, according to the ordinary tables, 8414, the actual number of deaths 8377, a difference of less than $\frac{1}{2}$ per cent." The numbers at this age were at least as temperate and perhaps slightly more so in respect of alcohol than those embraced in (O_m) general experience.

Dr. Newsholme points out that the mortality of abstainers for ages twenty to twenty-four is distinctly higher than the ordinary mortality, but, as already noted, for the ages twenty-five and onwards up to the age seventy-four the results are greatly in favour of abstainers; this advantage gradually increasing up to the ages forty to forty-four, when it is at its maximum, being under 55 per cent of the ordinary rate. "In general terms," he writes, "we may say that the feature of the abstainers' mortality is a great saving after early manhood throughout all the working years of life: which saving increases up to middle age, and gradually rises to the normal rate of healthy life as old age is reached at, say, ages seventy to seventy-five".

However these figures are manipulated, whatever tests may be applied to them, they indicate in the most unequivocal fashion that the prospects of long life are much greater among abstainers than among the non-abstainers.

That even a "fairly moderate consumption of alcohol produces a greater mortality than that shown by total abstainers whose circumstances are otherwise similar".

All this might be reinforced by the experience of Friendly Societies. It is stated, for example, and the statement is founded on statistics carefully arranged and sifted of as many fallacies as possible, that "with an equal amount of exposure of lives to the chances of mortality," three large societies, or group of societies, the Oddfellows (M.U.), 1866-70, Foresters (A.O.F.), 1871-75, and Registered Friendly Societies, 1876-80, all general societies, "would give from 33 to 54 per cent more deaths than the Rechabites" (1878-87), whilst the Oddfellows in 1893-97 give 9 per cent more deaths than the Rechabites, although this experience of the Oddfellows belongs to a period of much lower death-rate in the general population than in 1878-87, when the experience of the Rechabites was tabulated.

Sir Victor Horsley and Dr. Mary Sturge in considering these same statistics have made a most striking comparison. They give the relative mortality figures of adult males and publicans, derived from the Registrar-General's returns, and of abstainers, derived from the above experience of the Independent Order of Rechabites.

For every five and a half Rechabites, ten adult males and sixteen and a half publicans succumb. These figures in all their baldness are brutally convincing. They bear out the contentions of the physician and pathologist, they support the hypothesis of the social worker, and they corroborate the statements of all who have given unbiassed consideration to what was a most difficult because so involved a problem, but has unravelled into a comparatively simple series of observations and experiments.

ALCOHOL AND NATIONAL EFFICIENCY

It is the trend of modern medicine to look for the deeper causes or associations of disease. Mortality follows morbidity more or less closely, but in many instances the latency of morbidity is so remarkable, and the obscurity and subtlety of the factors involved in its production so great, that there is some danger of specializing in regard to the mortality factor and generalizing where the morbidity factor is concerned. It has been recognized in the Army for some time that the soldier is effective almost in proportion as he is well fed and suitably clad, but the same light has not yet reached the minds of many of those we are trying to better the condition of our workers—and of those who should be able to work.

The whole of the powers of an underfed man can never be placed at the command of the State, and his "resistance" to the attacks of disease is lowered. The badly housed family is at a disadvantage wherever its members turn, and the badly clothed and shod child or woman is open to the evil influences of wet and cold, that have no terrors for the dry shod and warmly clad. The money spent in "drink," an expenditure that has risen by a million a month for the last eight months, in spite of the calls to thrift and economy that are being made by all responsible people, would provide housing, clothing, and food for the hundreds of thousands of men, women, and children who at present are below the "Plimsoll-line" of safety and comfort, and who never have the chance of living under healthy physiological conditions. They are, in fact, never healthy; their whole life is pathological. Disease is their constant companion and death their ever-active pursuer.

Perhaps no single feature of the war now being waged

has excited more interest than the action of the Czar and his advisers in regard to the use of alcohol by his subjects, civilian, naval, or military. It is as yet, of course, difficult to estimate with any degree of accuracy the influence that this factor may exert, but from what we know of Russia's past and from what we can now learn of the actions of her sons, and of the results of these actions, we may anticipate that when Russia's part in this war comes to be appraised, it may be reckoned up in terms of an enormously increased efficiency, physical, mental, moral, and spiritual, due to the practical elimination of ardent spirits and their effects from amongst the depressing and disintegrating agencies hitherto playing so prominent a part in the everyday life of the town dweller, and, intermittently, amongst the peasant population.

In spite of the war the workman has never been so prosperous as he is now, and that quite apart from the munition work and of the supply of labour and material for the army; the poor have never suffered so little except in those areas harried by the enemy or destroyed by friends in order that the enemy in his advance might find no supplies on which to thrive. The stolidity and solidity of the people have not been mere stubbornness born of inertness, want of feeling, and failure of initiation; they have been the outcome of an intelligent love of country, of a stern appreciation of what would be their fate under the heel of the German as conqueror, and of a keen desire to see their country taking her place amongst the free nations of the world. This great ideal, cherished by men with clear brains, sound judgment, and strong muscles, is revolutionizing Russia in the best sense, and if the process can but be continued after the war Russia and her children have a great future before them.

It is, however, with the pathological aspect of the question that we have here to concern ourselves. Never has the Russian Army been so free from disease. Privation and hardship almost undreamed of in other armies have, as always, been the lot of the Russian soldier, but never has he better risen superior to them both than in this war. The Army as a whole has retained its health, its fighting and marching powers, and its vigour in spite of them. Lack of sufficient food, long and fatiguing marches, prolonged and strenuous fighting, great nervous strain and frightful wounds have left the Russian soldier active, determined, and cheerful, and confident of ultimate victory. Disease there has been, but far less than in any campaign of even approximately proportionate magnitude. Cholera has never obtained the awful grip that it has taken in some wars in which Russia has played her part; typhoid fever and dysentery though claiming their victims, and sometimes numerous victims, have never taken such excessive toll that the diseases may be said to have got out of hand. Wounds have healed that in many campaigns would have killed the patient without fail. Septic mischief, rife as it may have been, has never been so little in evidence.

It will be said, and with truth, that much of this is due to the better conditions of campaigning, to improved field sanitation, to more effective antiseptic treatment of wounds, to better surgery, and to improved Commissariat arrangements. These, however, are the outcome of a sober, well-organized, alert, and efficient staff of officers. The combatant officers take care of their men, their judgment is sound, and the training they have received has full play. The non-combatant Medical and Army Service Corps, clear-headed and competent, anticipate danger and disease and

are ready to combat them when they arise. This again is only half the truth. The men, as the officers, unbemused by alcohol, are ever on the alert to avoid the conditions that promote disease and septic mischief, whilst their organs and tissues with their functions and activities unimpaired by the action of alcohol, not only withstand various *noxa* that would prove fatal to tissues weakened by alcohol, but react in a far more healthy fashion in those cases where the damaging agent does not actually destroy.

The greater endurance of the non-alcoholic soldier or worker is now not a matter on which there can be or is any difference of opinion. It is a question that has been definitely settled by experiment and experience, and it is this endurance, whether manifested on the march, in the prolonged battle with its active movements, or the dogged work in the trenches that gives and will give victory.

The Russian Minister of Finance in his recent (1915) Budget speech, after attributing part of his deficit of 250,000,000 roubles (£26,300,000) to the suppression of the State's monopoly for the sale of spirits, concludes with the following noteworthy passage: "The war has entailed great changes in the economic life of Russia, yet however serious the situation created by the events of the war, however great may be the efforts and sacrifices still to be imposed on Russia and her glorious and faithful allies to obtain complete victory, I am nevertheless convinced that Russia, regenerated by temperance due to Imperial initiative, will overcome all trials, and after the war has been healed will apply all her natural forces to the improvement of economic life and the evolution of progress".

In what follows I trust I may not be misunderstood. I realize that I must make it perfectly clear that I am not criticizing men though I may condemn a system.

Elsewhere I refer to the action of alcohol on the kidney. Can we believe with all the cases of trench kidney recorded, that the regular serving out of rum has no effect in aiding whatever may be the exciting cause of the condition, and in inducing exacerbations of the disease? We recognize the mental irritation set up in puppies by the exhibition of small quantities of alcohol. Can we believe that alcohol, especially when taken by the young soldier, is conducive to the equable mental condition so valuable to the fighting man; a condition so marked amongst our men under the most trying circumstances? Young men are most affected by concussion and in them neuræsthenia is of comparatively frequent occurrence. To such men alcohol is a poison, and the "tot of rum," small as it may be, is undoubtedly answerable for a certain proportion of cases of unstable nervous equilibrium that without the additional cant that alcohol gives would have remained stable or rapidly returned to a stable condition.

The so-called "frost bite," "cold oedema," "trench foot," may seem at first blush to have little relation to the use of alcohol, but I am now convinced that the rum served out to the men in the trenches plays a by no means unimportant part in the production of this condition.

Small doses of alcohol, when taken into the stomach, cause—as I have noted time after time, both on myself and on others, some of whom are accustomed to take alcohol fairly regularly, others not—a distinct flushing of the skin due to dilatation of the cutaneous capillaries, the skin becoming first warmer and the blood in the internal organs cooler than before the alcohol was taken. After a time the skin temperature falls, but there is no corresponding increase of temperature of the blood in the internal organs. This means that the body has lost heat by the

skin. The evaporating moisture of wet puttees and stockings carries away a further amount of heat, whilst the contracting wet materials exerting pressure on the lower limbs, after a time tend to compress the vessels in the skin, and especially to interfere with the return of venous blood and lymph to the larger veins and lymph channels. The lowered temperature and the impaired nutrition due to this obstructed circulation together are accountable for the "trench foot". So long as the arteries retain their normal tone the blood passing through them can be removed by the veins and lymphatics, but when control is lost, as when alcohol is given, then the tissues are flushed with blood (containing an irritant that under ordinary conditions would do comparatively little harm), in such quantities that the damaged and compressed veins and lymphatics cannot deal with it properly.

The lowered resistance or increased susceptibility produced by the ingestion of alcohol has been mentioned elsewhere, but the carelessness set up by its use has not been referred to. This, however, is a by no means unimportant factor. A very slight loss of keenness, a momentary aberration of judgment, inattention to some small preventive detail, any one or all of these may lead to infection of individuals and then to a localized or even an extensive outbreak of infective disease.

A man is not at his best whether working or fighting against armies or diseases if he is taking alcohol. Lord Roberts knew this, and His Majesty the King, Admiral Jellicoe, and Lord Kitchener appreciate it. How soon will the nation recognize it?

GENERAL CONCLUSIONS

Alcohol plays a prominent part in bringing about

degeneration of nerves, muscles, and epithelial cells; it determines the accumulation of waste products in the tissues by paralysing the tissue cells, interfering with oxidation, with secretion and with excretion; it induces the proliferation of the lower forms of tissue, often at the expense of the more highly developed tissues, which in its presence undergo marked degenerative changes; it interferes directly with the production of immunity against specific infective diseases, and reasoning from analogy it may be assumed that it plays an equally important part in impairing the resistance of tissues to the advance of the active agents in the production of disease that may have already obtained a foothold in the body.

Alcohol lowers vitality, impairs judgment, sterilizes initiative, absorbs wealth, vitiates morality, and in raising the morbidity-rate, increases the death-rate. The national conscience has not yet been thoroughly aroused to the importance of the issues at stake—that in peace or in war intemperance is the link in the chain of our national life which gives greatest evidence of weakness and most cause for anxiety to those whose finger is on the pulse of a great, but in this matter obstinate—perhaps because proud—people. The German Emperor is reported to have said that the most sober nation would be successful in the next great European war, and to have added, after the war began, and referring to the great rescript of the Tzar, “But who could have foreseen this wonderful coup”.

III

THE PSYCHOLOGY OF ALCOHOLISM

BY

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NATURE OF THE EGO

A SURVEY of the mental manifestations of people of different social levels and occupations shows that there are trends of thought which are presumably due to the habit acquired by the nervous system of acting in the line of least resistance, namely, in the paths in which it is specially educated, these paths being the indication of the most congenial supply of pabulum and of its selective association. The result of this harnessed energy is the "Ego," and the individual is the sport or the master of this "Ego," this psychosis, this mental mosaic—call it what you will—in proportion to his power of inhibition or guidance. There are on the stage some versatile actors who are equally at home in parts of contrasted emotional tone, but the majority have individual rôles, and their

"business" is of a stereotyped form which they can only more or less effectually mask, and so it is on the stage of life, both in health and disease.

VARIETIES OF PSYCHOSIS

In entering on our inquiry regarding the psychology of the alcoholic, it is necessary to realize that there are several important varieties of psychosis. There is the *Psychosis cisiaria* (we all know the tight-trousered, thin-lipped horsey man when we see him), the *Psychosis legalis*, the *Psychosis feminina*, the *Psychosis sycophantiosa*, and to come to disease, the *Psychosis podagrica*, and, which immediately concerns us, the *Psychosis inebriata*.

ANALYSIS OF MOTIVES AND CONDUCT

A man is known, not by what he thinks, but by what he says and does, which are the objective interpretations of his subjective "Ego," as a rule, not always, certainly, but in the main; and much of our success in life depends upon the facility with which we can enter into modes of thought—the "Egos"—other than our own. Success in this is partly a matter of experience and of perspicacity; but it is really more, and is of the psychological order, as sympathy, or the power of assuming a condition which is the reflex of another's state. To talk of the "Psychology" of a line of conduct is then to enter into the motives, the emotions, the trend of associated ideas of the individual which postulate the actions which are at the moment to be criticized, at one time drawing an inference as to the cause from the result before us, at another looking out for results which should eventuate from what we suppose to be a cause. It comes very glibly off the tongue to say, "Put yourself in his position," "What would you have

done under those circumstances?" but if self-analysis is difficult, how much more so is it to appreciate the "Ego" of another, to penetrate within the veil of the maimed and debased inner temple of the debauched inebriate? It requires the pen of an alcoholic De Quincey to retail in his graphic manner the memories of his past experiences—a man who has the power and the courage to lay open the cravings and the writhings of his past slavery, and to compare them with his emancipated self, blurred and attenuated though the recollection may be. An authoritative statement of this kind would be a confession much after the manner of the repentant sinner, or the converted burglar, who now and then comes forward to relate the "Ego" of his earlier backsliding, and in the absence of any exponent of this self-immolation all we can do is to note some of the chief objective signs of the inebriate mind, superadding a few speculations as to what may underlie the degradations with which we are all only too familiar.

APPETITES AND CRAVINGS

No word is more used in connexion with alcoholism than the term by which we express the strong desire for drink, the "craving". We shall see that as appetite is the somatic index of the normal body, so craving may be taken to be the somatic index of the disordered one. Life is full of appetites and cravings, some of them leading to harmful indulgence, others simply to the degree of repletion necessary to maintain the balance of metabolism, or of waste and repair. The desires to eat and drink, to smoke and to take drugs are really appetites or cravings dependent on varying bodily conditions; and there are psychical cravings, too, such as are expressed in general terms, as thirst for

knowledge, craving for pleasurable excitement, whilst mere satiety is denoted by saying that a person has "had his fill".

Appetite and craving have come to be used for conditions implying natural and morbid impulses. An appetite for food is natural, a craving denotes that an unnatural condition has to be satisfied; so a taste for alcohol may be natural, but a craving for it connotes considerable excess. An appetite may become a craving, and many cravings are founded on legitimate appetites. In both appetite and craving we note the element of time, of habit, and of periodicity. Even in the inebriate this rhythmic process is noticeable. Under ordinary conditions we are hungry or thirsty at about the same time every day, and the word "meal-time" means not only that a certain hour has arrived, but that the periodical desire has arisen, and must be satisfied. It is probable that the idea of time in many animals is solely that of the feeling or appetite for food in accordance with the rhythmic habit. Appetite disappears with repletion, or satiety, but with craving the intake is continued; thus the gourmand stops when his palate is satisfied, the merely thirsty man when he has had his fill; but the inebriate drinks as long as he is able to do so, although he has no compelling thirst; the inordinate smoker keeps on though his tongue may burn and he derives no pleasure from the continuance; the opium-taker stops only when he is incapacitated.

INFLUENCE OF HABIT

Say, if you will, that "habit" is at the root of vices; it means neither more nor less than that an artificial state has been set up, which can only be changed by a stoppage of the supply of material which feeds the conditions. It

is useless to moderate the inordinate smoker's tobacco, it must be stopped altogether; so with alcohol, so with opium. Can we not see the same on the mental side? To get quit of an obsession we must have an entire change of ideas; to break through the habit of waking up at the same hour we must take measures to sleep through the critical time.

THE NATURE OF THE ALCOHOLIC CRAVING

The question as to the real nature of craving is variously interpreted by different authorities. Dr. Archdall Reid¹ says: "It cannot be too strongly insisted on, or too often reiterated that the craving for alcohol, like sexual love, is an instinct, not an acquired trait". Dr. Ford Robertson² on the other hand says: "I have long maintained that the specific craving for alcohol is never instinctive, never inborn, but always acquired, and therefore that no man ever craves for alcohol who has not had previous experience of it. As a specific habit it has its origin essentially in environmental influences," which means that men only take alcohol because it happens to be there, and that it is not a necessary food. The same may be said of a hungry man in a country which produces food of only a certain kind; he may appease his hunger with what he can get, and if he has never experienced other kinds of food he has no idea of them, and therefore neither appetite nor craving for them. A person may live on rice, milk, or dates, and may desire nothing else if he has never had experience of other food, so that as long as there is enough, *qua* food, and that food contains all the elements necessary to the proper nutrition of

¹ Reid, G. Archdall: "The Present Evolution of Man". London, 1896.

² Robertson, Ford: "Alcoholism," 1901.

the tissues, there would appear to be neither the desire nor the necessity for alcohol. But it is often urged that there may arise conditions in which, conceivably, alcohol, or some rapidly diffusible and quick-acting food is necessary—such conditions as great physical exhaustion, impaired action of the heart, sudden nervous shock, etc. Under these circumstances it is generally called a “stimulant,” but why should it not also be a “food” if it serves to restore function by rapidly supplying (? evoking) tissue energy? It probably is actually a food of a temporary kind, but the fault of the inebriate is that he makes it his universal food, which it cannot be. Alcohol is responsible for much disease, and for many deaths, but many contend that people have died from the want of it at the right moment. What was found to be serviceable at a crisis is, owing to its agreeable qualities, made to become a habit, and finally develops into a willing necessity, just as may be said of many other acts and desires which, at first mere physiological necessities, grow or are fostered into destructive habits.

Many and diverse as are the foods of to-day, it is easy to conceive that at any moment a food or a drink might arise which, at present unimagined, would excite an irresistible craving, a very Ambrosia, but with the penalty of immortality as a result of over indulgence.

But there is another way in which a craving may be viewed, a mode of estimation which points to a less harsh judgment of it, and makes it indeed a possible beneficent agent. Does a craving denote an altered physical state which requires its own peculiar mode of nutrition? This view has been elaborated by Dr. Harry Campbell,¹ and

¹ Campbell, Harry: “The Alcoholic Craving”. “The British Journal of Inebriety,” July, 1906.

it is plausible, but it is guess-work, because we cannot appreciate correctly the changed state, the modification of tissue with its attendant feeling which requires nourishing in a certain way.

MENTAL CHARACTERISTICS OF THE ALCOHOLIC

Although much is known of the way in which nerve tissue is damaged in alcoholics,¹ it cannot be said that we know much about the ordinary action of alcohol. We cannot say whether, when an individual can take large quantities of it without visible impairment, he owes his immunity to good digestion or to a particular composition of his nervous system.

The key to the interpretation of the chief objective features of the alcoholic's mental peculiarities is to be found in two theories, the one in the doctrine of inhibition, the other in that of "the muscular element of thought".² By the former we mean the guiding or controlling power which the higher and later developed nervous centres have over the lower ones, a power which attains its maximum in the highest centres of the brain when they are "at the top of their form," untrammelled by any exciting or depressing agent such as alcohol or a narcotic drug. By the latter we mean the muscular memory, which forms part of every mental "content".

Among concepts, in actual concrete ideas, the fine muscular movements which are the foundation of our ideas of space, size, form, distance, weight, etc., which are with difficulty and at a late period acquired and incor-

¹ Horsley, Sir Victor: "The Effects of Alcohol upon the Human Brain". "The British Journal of Inebriety," October, 1905.

² Lewis, W. Bevan: "Text-book of Mental Diseases". London, 1889.

porated, are in accordance with the law of evolution the first to go, and with their disappearance is introduced a new element, that of a not understood, and therefore misapprehended difficulty in the carrying out of ideas; hence a feeling of resistance, and a natural inclination to account for it. Among the patients at the Norwood Sanatorium for Inebriates, it has been noted that eye-strain from refractive errors, night-blindness, and choroido-vascular changes have given rise to conditions of alcoholism.

MORBID NATURE OF THE ALCOHOLIC

In what are called the toxic insanities one of the most prominent forms of delusion is that of suspicion, and this is a characteristic of the alcoholic. It makes him quarrel with his friends because he thinks that there is some concealed and treacherous motive in the background. This above-explained feeling of resistance cannot, argues the inebriate, arise in himself, therefore it must be caused by somebody, and who so likely to be obstacles to his well-being as those with whom he is in social contact and who know most of his affairs? These aroused ideas become more complex in accordance with the laws of similarity and contiguity, and thus an entirely fictitious world is created for him, peopled with phantasies which must continue as long as their organic basis lasts. If the lesion is permanent, so must the change in the "Ego" be accentuated, until at last a new self is created, which fails to recognize that it ever was anything else, and which proceeds to harmonize everything with the new state. As the new consciousness is the compelling mind of the moment, any weakening of which he would spurn as losing guard against imagined pitfalls, he does all in his power to strengthen his defences. Feeling additional aid from the

ingestion of alcohol, he continues the indulgence because it is to him an agent without which he loses grasp of his identity. For him it is no poison; it sustains his being and he will have it until overpowered by excess, or stopped from indulgence by forced sequestration. Here again the question of craving is one not so much of indulgence in a pleasurable self-gratification, as if an urgent compulsion to supply a need or a food. The inebriate is not a slave to his habit in the sense that he is cherishing a voluptuous indulgence; on the contrary, his supposed "liking" may be a myth, positively distasteful and abhorred on the sensual side, and only fed because of its necessity for the maintenance of a condition, the falsity of which he is unable to appreciate.

MENTAL INSTABILITY OF THE ALCOHOLIC

Another prominent feature of the inebriate is mental restlessness and explosiveness, co-ordinates of a wasted inhibition. The increase of introspection—"subject-consciousness," as it is usually termed—renders him incapable of attending to what is passing around. There is a loss of the sense of awareness of surroundings, hence accommodation has to be suddenly brought about, and there is failure in the co-ordinated purposiveness of one who is able to pursue the even tenor of a regulated life. Only when the "Ego" is changed can we understand the failure of the new individual to adopt what seems unreal and alien, besides which the gradual supersession of the old by the new condition must set up doubt and uncertainty, dissatisfaction and shiftiness, leading to restlessness in his attempts to adapt himself to what is going on, and to sudden changes of conduct which rank as explosiveness.

VOLUNTARY AND IMPULSIVE ACTION IN THE ALCOHOLIC

Nothing is more certain than that for the highest and truest acts of will, anything like undue excitability of nerve tissue, an excess of emotional tone, any hurry or impairment of the elements of a volition complex, viz. good memory, power of attention, free passage of thought-currents, etc., will reduce the act from true voluntary action to one of impulse; and if we accept Wundt's law that the ultimate cause of will is to be found in the social environment, it follows that the alcoholic being incapable of interpreting his environment correctly cannot perform acts of will with proper deliberation; hence he is impulsive.

FORMS OF MENTAL INCOMPETENCE

What, let us ask, are the signs of a well-developed, unimpaired mind at its zenith? Calmness, steadiness, sound judgment, absence of impulsive action, good abstract memory, coherence, and correct muscular co-ordination. And what does the psychology of the alcoholic show? Restlessness in place of calmness; tremor in place of steadiness; impulsive instead of deliberate action; loss of memory, incoherence, lying, difficulty in walking, and finally, moral turpitude and a state of antagonism to the existing social order.

Neuritis is the cause of many of the false ideas of the inebriate. It leads to persecution ideas, and is an indication of severe structural impairment.

IMPAIRMENT OF MOVEMENTS

The staggering movements of drunkenness, or acute alcoholism, are represented in the chronic inebriate by

loss of spontaneity, owing to injury to the centres of co-ordinated reflex movements. Either from neuritis, vitiated composition of the blood, or central degeneration, the victim experiences giddiness and difficulty in walking. He has to *think* of his walking, and as he goes about with his head bent, and his eyes on the floor, he is afraid of stumbling and feels much safer when using a stick or when close to a rail or a wall. Hence he develops an *agoraphobia*—a dread of open spaces, of crossing the road lest he should slip down, and be run over, and from having to concentrate his attention on his steps he is incapable of the necessary awareness of traffic. His friends say that he has become reserved and shy, whereas he is simply introspective in his own interests. They say that he has developed nervousness and timidity, when he is but acting cautiously from experience. Then come other muscular failings in the accuracy of purposive movements; the handwriting becomes shaky and the writer uses a lead-pencil, if available, instead of a pen, because, for some reason not quite clear, a pencil is more flowing and less tremulous. A stylographic pen is anathema-maranatha to the alcoholic. In order to raise a glass or a cup to his lips he resorts to all sorts of devices; he has it placed nearly on a level with his mouth, or instead of lifting it he reverses the process, and stoops down to it. Almost comic are the shifts these people resort to for hiding the stigmata of degeneration; the excuses they make for putting off the performance of voluntary acts in the presence of others, the lies they tell in inventing reasons for their omissions and commissions, most of which moral decadence may be traced to failure in the muscular element.

As these muscular changes are more felt by the patient than they are manifest to the outsider, and as many of

them may cease when the body is at rest, the alcoholic takes the opportunity to sit whenever he can, to ride where he used to walk, to be silent instead of communicative; hence he is said to be lazy or extravagant, to have become stupid and uninteresting. Never perhaps were motives so misjudged by others as they are in the alcoholic, but it is unfair to stigmatize them as cowards; they are capable of brave acts, and their futile attempts in clutching at propriety are merely struggles to make others believe that they can still preserve their social equilibrium, though they are themselves conscious of their feeble hold of the balancing-pole.

PSYCHOLOGICAL CHANGES DUE TO CIRCULATORY AND VISCERAL LESIONS

Impairment of the circulation, due to heart-failure and degeneration of arteries, accounts for many psychological defects. The continued over-stimulation of the heart leads to dilatation and irregularity, and to loss of elasticity in the small blood-vessels; hence the lassitude and faintness, the incapacity for mental and physical exertion which lead to business laxity and failure to keep engagements, resulting in a resort to that stimulant which sets up a spurt, saving perhaps the present situation, but hypothecating the future.

RELIGIOUS AND SEXUAL ABNORMALITIES OF THE ALCOHOLIC

Other interesting features of the alcoholic mind arise in sexuality and in religious emotionalism; the former due not so much to increased activity of the sexual organs as to stimulation of the sexual memories; the

latter either similar to that peculiar supervention of this class of ideas which is one of the features of the epileptic temperament, or else to the victim's feeling of ineptitude, and his recourse to a means of salvation from a condition which is too hard for him to bear, that is to say, Fear, is at the bottom of his new convictions.

MORAL DEGRADATION OF THE ALCOHOLIC

The moral degradation of the inebriate is the completion of the sad falling away of brilliant possibilities. If we are asked the chief features of the unbiased, judicial mind, we should probably associate them with serenity and deliberation, and with the minimum display of emotion and sentiment. Any one of experience in "social amenities" knows how very strained and formal is the entrance into the reception-room of the guests, and how ceremonious is the opening of the entertainment. After the wine has flowed round all this is changed; talk takes the place of silence, familiarity that of reserve, matters are freely spoken of which erstwhile were carefully ignored. That means a decadence in the judicial tone, and a loss of the mastery over sensuous impulses, and a perceptible attraction within the vortex of easy compliance. Carry this a little farther, and make the occasional state a more or less continuous one; we have then no difficulty in seeing how the moral tone, which is the elaboration of the highest intellectualism, must suffer. The standard of duty is relaxed, because the individual is too much under the engrossing stress of the moment; he cannot wait to consider the consequences, because he is hurried on to fresh ideas which involve no trouble or exertion on his part, and so he is led into dangerous situations, from which he

has no power to escape, the summation of which we call "moral obliquity".

If more were needed to show the reduced mental condition of the alcoholic, we might adduce the fact that he becomes subject to control by others of strong personality in the form of treatment by "suggestion".

THE ALCOHOLIC'S CATASTROPHE

The man who drinks is always in danger. He of necessity loses his rudder—his control—and is at the mercy of other people, and of his own unrestricted motives and impulses. He is a risk to the community, and he finds that sooner or later society imposes on him the fetters which but for his own folly he need never have worn.

THE ALCOHOLISM OF TO-DAY

The war in which we are engaged has led to an acute revival of the alcohol question, and some limit has been placed on the time during which the supply of drink can be obtained by the public. Beyond this limitation and a restriction in treating and of the supply of alcohol in restricted areas, nothing in the way of prohibition has been done by the Government. The tentative proposal by the Government to place an excessive tax on alcoholic liquors has been dropped; in my opinion rightly dropped, because the last thing people will forego is their alcoholic drink, and excessive taxation of this only leads to an expenditure of money which is better otherwise employed.

If men want liquor, they will have it, cost what it may. What we wish to do is to get people to see that they do not require alcoholic drinks except in very particular circumstances. "Drinking" is a habit very easily acquired

—in most cases it is merely a habit—and if people would only try they would find that it is as easy to drop the habit as it is to acquire it.

Many contend that, and believe, there is no special merit in total abstinence! The process of giving up alcohol is such an easy one for many people that to an abstainer it seems incredible that so much money and time should be wasted in the indulgence in wine and spirit drinking. Does alcohol increase the imagination? Many people who write say that it does, and that they cannot do good work without it. It is often found, however, that those who drink to write have set up such riot in their imagination that their work is obscure in its significance, and that it would have been better to write first and delay the drinking until afterwards, when probably it would not be wanted at all. I know that in these strenuous times men employed in the factories where munitions of war are produced have to work desperately hard, and they are often called upon to do more than is within normal physiological limits. Many of them are exhausted, and they doubtless find a temporary and powerful renewal or liberator of energy in alcohol. What are we to say to them? It is a great pity that men are nowadays limited to a few hours nominal work in which they are supposed to be strenuously occupied the whole time—such a restriction of time leads to exhaustion, and it is not given to all men to give the same output in the same time. As long as men are expected to do a prodigious amount of work in too short a time there will be exhaustion, and that means recourse to stimulants to relieve a condition that never ought to have arisen. It is not my province here to discuss trades union requirements and the contracts between master and servant, but I strongly affirm that to keep a man at ex-

cessively strenuous toil for a long period, or to keep shortening his hours of work whilst his output of work done is expected to be what it was when the time for doing it in was longer is wrong in principle, and gives an excuse to the "drinker" which it is difficult to combat.

This war is a great experiment on an enormous scale on the alcohol question, and only when it is over shall we be able to appraise the merits and demerits of the upholders of the two sides of the question, which is the value of moderate drinking as against that of total abstinence. The influence upon wounds of the abstainers from alcohol and upon those who have indulged freely or only moderately will also have to be considered, and in many other ways the experiment which is now proceeding will be a crucial and an instructive one. On looking around it does not seem that any great change has so far been made in the drinking habits of the people at home. The King's example has not been generally followed. At the clubs and in society alcohol drinking is practically what it was, and the public-houses do not apparently lack custom, though the pernicious habit of treating has been now totally stopped. Candidly it must be stated that the general denunciations by some of the extreme total abstinence party have not been altogether justified. Never have our men fought more bravely, heroically, or consistently, and as far as can be ascertained at present it does not appear that the teetotallers have come out of the ordeal any better than those who make no secret of their preference of alcohol to abstinence. Of course in the expeditionary force there are not the same facilities for obtaining alcohol as there are at home, so that all our men at the front are to some extent compulsory abstainers; but, granted this, it is not apparent that even if alcoholism played a conspicuous part in their

lives when at home, it cannot have caused that deterioration and ineptitude which the most strenuous of the total abstinence party have sometimes urged would prove to be the case. But allowing that the alcohol abolitionists may argue from the fact that since our heroes have done so well on a minimum quantity of alcohol they might have done still better on none at all, it also proves that a little alcohol has had no effect in preventing deeds of valour which have never been surpassed, whilst in the opinion of some it is more than probable that even the small quantity of alcohol that has found its way into the fighting line may often have been useful in evoking energy at critical moments. Now that our men have seen what can be done on a restricted supply of alcohol, it is to be hoped that on return to civil life they will see the value of retaining the habit of abstinence or strict moderation which has stood their friend under such trying circumstances, and that such a wave of the desire for moderation at least, if not of total abstinence, will spread through the land by the driving force of example that men will wonder how they ever felt any pleasure in excessive indulgence in intoxicating drinks. Those who have achieved such great results will look upon incapacitating excess as a crime, and will view with abhorrence the misguided folk who think that because the serious side of life may be carried through on principles which demand moderation or even deprivation, therefore the pleasurable side cannot be attained without prodigality and excess.

After the war is over it may be hoped that we shall be able to appraise correctly the influence of alcohol, and to see how far the theories hitherto urged have been justified. We expect to find them in accordance in the main with the facts. There is no doubt that many of the horrors

committed by the enemy in Belgium were done under the influence of alcohol, but that does not count for much because the whole trend of the enemy mind has so long been fed upon brutality and inhumanity that it is difficult to separate what has been due to excessive indulgence from what has been caused by innate and cultivated mal-evilence. We know even now what magnificent results have been attained by our men under abstinence, what prodigies of valour and endurance have been witnessed in men whose minds and bodies have been uninfluenced by the presence of alcohol, and we have the right to ask whether anything more heroic can be imagined under any alcoholic influence. The answer will assuredly be that it cannot. If so, then, why cannot the fact be universally accepted as a proof that the greatest qualities of mind and body have been proved to have been exhibited in the moderation or total absence of alcoholic stimulation, and, if so, then why should there be any return to habits which have been so clearly shown to be—to say the very least—unnecessary? Our men in the fleet and in the expeditionary forces are to a great extent abstainers from all forms of alcohol; our allies are extremely moderate in their alcoholic consumption, and some of our enemies (the Turks) do not use alcohol at all. Why, then, do we at home go on “as usual” when such glaring examples of what strict moderation and abstinence can do are before us? Will nothing teach us? If it has done nothing else this war has shown us that even in the greatest straits alcohol is unnecessary, and yet we at home are content to go on as usual, and cannot be induced, even by the highest examples, to place a limit on our indulgence! If alcohol is the necessary factor for “imagination,” surely the calm appreciation of facts and the increase of self-control are more important

in the prosecution of our purposes, and we can better be without the exalted theories and the wild imaginings of the alcoholics than we can dispense with the sober judgments of the moderate man who can see the plain facts as they are, and can arrive at conclusions which stand the test of reconsideration when the transitory vapourings of the alcoholic have passed away, and the fantastic superstructures have crumpled away into nothingness! Let the people who remain behind, protected by the sober courage and endurance of our men afloat and afield, at least follow their example in this plea for moderation. There is no courage in alcoholism; it is a sign of weakness to rely upon a support which fails in proportion as the clutch on it is increased. If men must have a habit let them cultivate that of abstinence, they will soon find as much pleasure in refusing alcohol as in taking it, and the self-satisfaction of a victory over their worst selves will be intensified by the improved mental and bodily acquisitions of their new life. In conclusion, I would say—the least you can do with regard to the abstinence question is to be unprejudiced and give it a fair trial.

IV
THE MEDICO-LEGAL RELATIONS OF
ALCOHOLISM¹

BY
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THE problem of the medico-legal relations of alcoholism cannot be sharply discriminated from its mental, moral, and ethical relations on the one hand, and

¹The Sixth Chapter in the edition of this book of 1907, entitled "Medico-Legal Relations of Alcoholism," was from the brilliant pen of my young and lamented friend, Dr. Stanley B. Atkinson. I had been associated with him and Mr. Henslowe Wellington in the foundation of the Medico-Legal Society in 1902, and I watched with interest the zeal with which Dr. Atkinson addressed himself to all that side of sociology where medicine and law meet and overlap. The untimely death of Stanley Atkinson deprived Medical Jurisprudence of a gifted personality, qualified in both faculties and instinct with social service. In the chapter referred to he dealt in his quaint and epigrammatic style with the various types of victims of alcoholic excess, their mental and moral characteristics and the manner in which the law and penology regarded them respectively. Their responsibility in case of crime, the effect of their propensity in regard to social and

from the criminological and legislative bearings of the question on the other. As these aspects of the subjects are dealt with specifically in other chapters of this work, a certain amount of overlapping must be pardoned, while endeavour is made, as far as possible, to avoid the invasion of domains assigned to other authors.

MEDICO-LEGAL ASPECTS

Alcohol alike by its physiological and its pathological effects may bring its victim within the purview of the law. Drunkenness is neither an offence nor an answer to an offence under the common law. One who is drunk by his own act is liable for his actions when drunk, unless the action in question be one of "intent" which drunkenness precludes. While the only cause of drunkenness is drink, the effects of the same dose may vary greatly in different subjects. To transgress the law the conduct of the drunken person must be characterized by incapability or disorderliness in public¹ or be associated with various statutory delinquencies. Recent controversy has familiarized us with the expression "drunk in a police court sense". The term "drunk" is a relative as well as a very opprobrious one, and medical witnesses have been puzzled both to define and defend it. Not only does the same amount of alcohol affect persons of the same temperament differently, but different temperaments vary greatly in their susceptibility to the drug. The first stage of excitement, exaltation, *bien être*, volubility (*in vino veritas*) passes into one of inco-ordination in walk and

marital relations, and the reciprocal influence of alcoholism and unsoundness of mind were passed under review, while a historical sketch of legislation in regard to inebriety with some proposals for amendment of the existing law concluded his interesting chapter.

¹ See Licensing Act, 1902 [2 Edw. VII, c. 28], sec. 1.

talk, of incoherence, confusion, and combativeness. The will power is relaxed, the brake of inhibition is off, and in those in whom volition is naturally infirm or purpose has been weakened by habitual indulgence, self-control is easily lost. In the third or narcotic stage, a deepening coma supervenes, rendering acts of violence less likely.

Delirium Tremens (Sutton, 1813) and *mania a potu*, though the outcome of prolonged or repeated crapulence and the sequels of voluntary vice, are nevertheless as much forms of insanity as epilepsy or general paralysis, and have been so regarded in English, if not always in Scottish law.

Until the middle of last century the drunkard, when he came in conflict with the law, was regarded and dealt with merely as an offender to be punished and subjected only to fine or ordinary imprisonment. The criminology of inebriety held the field irrespective of its pathology, although some philanthropists were directing attention to the futility of fines or gaol for any reformatory, deterrent, or even retributive influence.

THE PUNISHMENT OF THE ALCOHOLIC

From a useful volume prepared by Dr. Branthwaite,¹ H.M. Inspector under the Inebriates Acts, we may gather that sixty years ago the only laws existing in regard to drunkards throughout the civilized globe were of a penal nature, and were represented in the main by fine or short periods of punishment. Here and there the imprisonment gradually lengthened, until it apparently became more a question of control than imprisonment. Then the principle of "irresponsibility" forced itself upon the notice of legis-

¹ "A Collection of British, Colonial, and Foreign Statutes Relating to the Penal and Reformatory Treatment of Habitual Inebriates."

lators, and laws assumed more of a reformatory and less of a penal character. Some countries by "interdiction," framed laws to prevent an inebriate from obtaining liquor. Others either stretched guardianship laws already in force, or enacted fresh ones to apply to the inebriate. Then came the institutional treatment, and New York State in 1854 gave legal recognition to the pioneer reformatory for inebriates, largely as the result of the advocacy of Dr. J. E. Turner, of Bath, Maine. After twenty-five years' useful work the New York State Inebriate Asylum appears to have come to an untimely end. According to Dr. Crothers of Hartford, Connecticut, "it had proved the wisdom of its founder, and showed that inebriety was both a disease and curable, and its failure was largely due to political influences and the frequent change of officers who were unacquainted with the work, and could not manage it along independent and scientific lines".¹

In England Select Committees sat in 1834, 1867, and 1872, and inquired and reported on the modes of dealing with habitual drunkards; with their labours the names of J. S. Buckingham and Dalrymple are honourably associated. In 1879 the first legislative recognition in this country was accorded to the habitual drunkard, who was then and there defined as "a person who not being amenable to any jurisdiction in lunacy, is notwithstanding, by reason of habitual intemperate drinking of intoxicating liquor,² at times dangerous to himself or herself, or to

¹ See an address by the author on "The Institutional Treatment of Inebriety," "Brit. Med. Journal," 7 November, 1903.

² Intoxicating liquor is defined by section 110 of the Licensing Act, 1910, as "spirits, wine, beer, porter, cider, perry, and sweets, and any fermented, distilled, or spirituous liquor, which cannot according to law for the time being in force be legally sold without an excise licence".

others, or incapable of managing himself or herself, and his or her affairs". Licensing authorities and "retreats" were recognized; entrance to the latter was a voluntary act, though once there by request the volunteer becomes a prisoner *malgré lui* for the period specified, the Legislature declining out of jealous regard for the liberty of the subject and fear of the abuse of compulsory incarceration, to go farther at that time. This Act, though amended and made permanent in 1888, did not prove a conspicuous success. The reasons of non-success have been variously given as:—want of compulsion to secure the admission of dangerous and confirmed inebriates, insufficiency of the maximum period of detention—then thirteen months, difficulties attending the treatment of refractory patients, escapes, etc.

Accordingly, after a further inquiry by a Departmental Committee in 1893, the Inebriates Act of 1898 was placed on the statute book. Under it the institutional treatment of the inebriate is provided for in "certified reformatories" and "State reformatories" which supplement the voluntary "retreats" established under the earlier Acts. The Act created entirely new law. It enabled magistrates to substitute reformatory treatment for imprisonment in the case of habitual drunkards who had brought themselves within the purview of the law by way of crime committed under the influence of drink, or who, by repeated appearances for certain scheduled offences connected with drunkenness, had demonstrated the hopeless inefficacy of short imprisonments. So that under the present law the institutional treatment of inebriety falls naturally under the three classes of institutions which have received legislative recognition, and all of which are now at work. The "retreats" receive private patients—that is, those who desire such treatment

and seclusion, but who do not sign away their liberty by any "form of request for reception," as well as those who, not having rendered themselves amenable to the law by reason of drunken offences, are yet desirous of treatment and compulsory detention for a period not exceeding two years. Then there are the certified inebriate reformatories established at the option of local authorities (Town or County Councils), receiving, under section II. of the Act of 1898, such cases as the magistrate may upon a fourth conviction see fit to send and the managers may be willing to receive. Lastly, in order of date of establishment and severity of discipline, we have the State inebriate reformatories under the Home Office, which, as the result of experience rather than by original design, have been destined to receive the more criminal class of offender, or those for whom the lenity and amenities of certified reformatories have been found in vain. Deaths of inmates of "retreats" or those out on licence are required to be notified to the Coroner.

By the Licensing Act of 1902 habitual drunkenness was made a ground for judicial separation, and statutory recognition was given to the compilation of a "Black List" of habitual offenders.¹

In 1908 yet another Departmental Committee was appointed "to inquire into the operation of the law relating to Inebriates and to their detention in Reformatories and Retreats, and to report what amendments in the law and its administration are desirable". A similar Committee was later in the same year also appointed for Scotland. Although bills have been drafted and introduced to give effect to some of these Committees' recommendations no fresh statute on the subject has yet passed into law.

¹ Sections 5 and 6 of 2 Edw. VII, c. 28.

LIMITATIONS AND DEFECTS IN THE PRESENT LAW

Among the weak points in the existing law as disclosed by these inquiries may be summarized:—

1. That there is a large class of non-criminal inebriates who are neither qualified for a reformatory nor are willing to enter a retreat, but who might be benefited by institutional treatment to the advantage of their relatives and themselves.

2. That if a licence for a retreat is refused by the licensing authority the retreat may nevertheless be carried on, and unlicensed homes are not less numerous than the licensed ones.

3. That leave of absence from retreats within the period signed for may not be granted except for reasons of health.

4. That the definition of "habitual drunkard" in the Act of 1879 is not free from difficulty, and that the term "inebriate" has no statutory definition.

5. That the necessity for proving "three previous convictions within the preceding twelve months" as a condition precedent to committal to a reformatory precludes the institutional treatment of many who might be benefited by it.

6. That the requirement of the consent of the inebriate as a prerequisite to his being dealt with summarily, and the fact that default thereof necessitates procedure by the dilatory machinery of indictment at Assizes or Sessions.

7. That drug addicts are not amenable to the law.

The Departmental Committee of 1908 expressly asked for and obtained an enlargement of their reference with a view to consider the value and propriety of treatment of inebriety by drugs as an alternative to detention, but soon

arrived at the decision that "no good purpose could be served by making a further and more extended investigation into the value of existing methods for the treatment of inebriety by the use of drugs".

Among the reasons assigned by the Committee for thinking that it was "inherently improbable that any treatment by drugs could be enforced by Act of Parliament," were the following:—

"1. It would be impracticable to set forth in an Act of Parliament the various modifications of any specific treatment that must be required by the varying needs of individual cases.

"2. The fate of the Vaccination Acts makes it evident that no mode of medical treatment can be successfully enforced by Act of Parliament, and that any attempt to enforce it would produce more friction, discontent, and agitation than it was worth.

"3. It would not be justifiable to enforce, upon the voluntary inmates of retreats, a specific mode of treatment to which they might object."

THE CONTROL OF ALCOHOL AND DRUG ADDICTION

While no drug in or out of the Pharmacopœia is endowed with the property of strengthening the human will, there are many drugs other than alcohol which, by abuse, exert a similar influence in paralysing volition and enfeebling conation.

The International Opium Convention drawn up at the Hague in 1912 and now signed and approved by forty-four out of forty-six Powers, embodies the principle that drugs of addiction, such as Opium, Morphia, Cocaine, Heroine, and others liable to similar abuse and productive of like ill-effects, should be restricted to medical and legitimate

use. National and International ordinances are to be invoked with a view to prevent their employment for any other purposes.

By the Children Act passed in 1908 it is enacted (sec. 13) that "where it is proved that the death of an infant under three years of age was caused by suffocation (not being suffocation caused by disease or the presence of any foreign body in the throat or air passages of the infant) whilst the infant was in bed with some other person over sixteen years of age, and that that other person was at the time of going to bed under the influence of drink, that other person shall be deemed to have neglected the infant in a manner likely to cause injury to its health within the meaning of this Part of this Act," and shall be guilty of a misdemeanour and liable on conviction on indictment to a fine not exceeding £100, or in default or in addition thereto to imprisonment with or without hard labour for a term not exceeding two years, or on summary conviction to a fine not exceeding £25, or in default or in addition thereto to imprisonment not exceeding six months with or without hard labour.

By section 26 of the same statute when it appears to the Court that a person convicted of cruelty or certain scheduled offences against a child is a parent, or living with the parent of the child and is a habitual drunkard, the Court may, under certain conditions, in lieu of sentence, order the detention of such person in a retreat for a period not exceeding two years.

A Royal Commission on methods of dealing with the feeble-minded and defectives, which was appointed in 1904 and reported in 1908, led to the passage of the Mental Deficiency Act of 1913. Their inquiries dealt incidentally with the reciprocal influence of mental defect and inebriety, and

they were led to conclude that "habitual drunkenness often indicates mental defect". The resultant legislation, however, did not materially modify the law in relation to the victims of alcoholism, although some so-called "borderland" cases may find their place among "moral imbeciles" and "feeble-minded" persons as defined by the Act of 1913.

By section 2 (b) (iv) a person who is a "defective" may be placed in an institution for defectives or placed under guardianship if he be also an habitual drunkard within the meaning of the Inebriates Acts, and by section 52 (part iv) it is an offence knowingly to supply intoxicants to a "defective" if the person so supplying has been warned by the guardian not to do so.

THE PREVENTION OF EXCESSIVE ALCOHOLIC INDULGENCE

During the spring of 1915 there was much talk of prospective legislation directed against excessive drinking in connexion with the supply of war munitions. Beyond certain powers of closure and control of licensed premises in particular areas and an embargo upon the consumption of immature whisky, little was, however, achieved in the way of legislative reform. There were not wanting suggestions that limitations should be placed on the consumption of drink containing more than a certain percentage of ethylic alcohol on the lines of the Opium Convention and in accord with the action taken by Russia in respect of vodka and France in respect of absinthe.¹ The movement was, however, side-tracked into condemnation of whisky unless of a certain age. The Commission which sat in 1909 found no evidence in support of the view that new spirits were "liable to be specially de-

¹ See letter by the author in "The Times," 19 April, 1915.

leterious and to cause some of the more severe symptoms associated with intoxication";¹ but they did find that "any specially evil effects observed were rather to be attributed to the excessive quantity consumed".

ANTICIPATIONS

This brief and imperfect sketch will at any rate suffice to show that the law in relation to alcoholism is in a transitional and rather inchoate condition. It makes demands upon the pathologist and the penologist, the moralist and the medical man. Sane views on ethics as well as on physic are required to guide the legislature aright in medico-legal relations wherein problems of free-will, compulsion, State action, individual liberty, jostle one another in any endeavour to spread temperance, reclaim the sot, and rid mankind of the social misery and individual degradation wrought by strong drink and will-paralysing drugs.²

¹ See Royal Commission on Whisky—Final Report, p. 17, 1909.

² See "The Ethics and Law of Drug and Alcohol Addiction," by the author. "British Journal of Inebriety," Vol. xiii, No. 3, January, 1916.

V

ALCOHOL AND LIFE ASSURANCE

BY

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THE facts and figures of life assurance are stubborn and hard to gainsay, and telling a tale of their own are worthy of due consideration. In reviewing the question of the action of alcohol upon the value of "lives," three questions have to be asked and answered.

They are :—

1. Does the excessive use of alcohol tend to shorten life? The answer to this, from the universal experience of offices, is that the excessive use of alcohol undoubtedly shortens life.

2. Does alcohol taken in moderation affect the probability of a lengthy life. The answer to this query is that

an increasing number of statistics over an increasing number of years show that even a moderate amount of alcohol habitually taken tends to shorten life.

3. Do total abstainers from alcohol show a distinctly greater longevity than any other class of the community? The answer to this question must now be in the affirmative.

When the Temperance Movement was first started in an organized form in this country (now nearly eighty years ago), there is no doubt the almost universal opinion was that the regular use of intoxicants in small quantities was conducive to vigour, good health, and long life; but even at that time there were a few, more observant than their fellows, who believed the direct contrary to be the truth, and who saw in the general use of alcoholic beverages the most prolific source of weakness, sickness, and premature death. While abstainers were fortified in their line of action by the endorsement of a portion of the medical faculty, they were exposed to severe criticism by a much larger portion, and in many ways were called to suffer disabilities; but, strong in their convictions, they determined to live out their principles, and allow the results to be their vindication.

As early as 1835 the Rechabite Order was started as a Friendly Society on an abstinence basis, and its success, in conjunction with the Sons of Temperance and Sons of Phoenix, is a refutation of the old theory of the value of intoxicants. In 1840 a young Quaker, Robert Warner by name, applied to a London office for an assurance on his life, and was told that, in consequence of his teetotalism, he would have to pay an additional premium, as the managers of the office believed that the lives of abstainers would be shorter than those of the users of alcohol. He demurred to paying extra, as he believed his life to be a

superior one in consequence of his abstinence, so he took steps which led to the formation of the United Kingdom Temperance and General Provident Institution. For the first ten years only total abstainers were taken, but at the end of that time a General Section was started, and the "mortality returns" of that office for the last forty-nine years will show how completely Mr. Warner's confident anticipations have been realized, and the counter predictions falsified.

THE UNITED KINGDOM TEMPERANCE AND GENERAL PROVIDENT INSTITUTION'S MORTALITY EXPERIENCE UNDER ORDINARY WHOLE-LIFE POLICIES FOR THE 49 YEARS 1866-1914.

Period.	General Section.			Temperance Section. ¹		
	Expected Deaths.	Actual Deaths.	Per-centage.	Expected Deaths.	Actual Deaths.	Per-centage.
5 years: 1866-1870	1,008	944	93·65	549	411	74·86
5 years: 1871-1875	1,266	1,330	105·06	723	511	70·68
5 years: 1876-1880	1,485	1,480	99·66	933	651	69·78
5 years: 1881-1885	1,670	1,530	91·62	1,179	835	70·82
5 years: 1886-1890	1,846	1,750	94·80	1,472	1,015	68·95
5 years: 1891-1895	1,958	1,953	99·75	1,636	1,203	71·35
5 years: 1896-1900	2,058	1,863	90·52	1,900	1,402	73·79
5 years: 1901-1905	2,221	1,961	88·29	2,021	1,456	72·04
5 years: 1906-1910	2,282	1,900	83·26	2,291	1,504	65·65
4 years: 1911-1914	1,793	1,420	79·20	2,073	1,310	63·19
Total (49 years)	17,587	16,131	91·72	14,827	10,298	69·45

¹ Where the term "Temperance Section" is used, it must be understood that total abstinence is a condition of entry and continuance in that section.

The Sceptre Life Association was formed in 1864 to effect assurance chiefly upon the lives of members of religious bodies, as the founders of the Association believed that a lower rate of mortality prevailed among that class of people than among the general public, in consequence of their more careful habits and quieter mode of life, a belief which has been abundantly confirmed by the experience of the Association. A separate section was formed for total abstainers, and a much lower death-rate has always obtained in that section than among the non-abstainers. The following figures are from the report for 1914.

The claims by death expected during the past year (calculated by the Institute of Actuaries' H^m Mortality Table), as compared with those which actually occurred, were as under :—

General Section.			Temperance Section.		
Expected Deaths.	Actual Deaths.	Percentage.	Expected Deaths.	Actual Deaths.	Percentage.
131	92	70·23	144	67	46·53

The foregoing figures emphasize very strongly the valuable sources from which the Association derives its business, and, as showing that the favourable mortality is not confined to 1914, the following results for the past thirty-one years are given :—

Period.	General Section.			Temperance Section.		
	Expected Deaths.	Actual Deaths.	Per-centage.	Expected Deaths.	Actual Deaths.	Per-centage.
5 years : 1884-1888	466	368	79·00	195	110	56·41
5 years : 1889-1893	564	466	82·62	312	184	58·97
5 years : 1894-1898	628	498	79·30	419	228	54·42
5 years : 1899-1903	712	548	76·97	514	270	52·53
5 years : 1904-1908	709	573	80·82	607	294	48·43
5 years : 1909-1913	668	520	77·84	678	310	45·72
1 year : 1914	131	92	70·23	144	67	46·53
Total (31 years)	3,878	3,065	79·04	2,869	1,463	50·99

This comparison is very striking, as the death-rate, it will be noted, is very low in the General Section, consequent upon the careful class of lives cultivated. Some years ago a leading newspaper said : "The controversy is not now between much drinking and little, but between little and none at all," and the foregoing figures seem very fairly to illustrate the difference between "little" drinking and "none at all".

The British Empire Mutual, founded in 1847 (now amalgamated with the Phoenix), opened a separate department for abstainers in 1883, and the results up to 1909 inclusive are appended :—

Period.	Claims Expected by Valuation Mortality Table.	Actual Claims in Temperance Section.	Percentage of Actual to Expected Claims.
1883-1899 .	363	206	56·7
1899-1904 .	232	143	61·7
1904-1909 .	203	102	50·2
1883-1909 . .	798	451	56·5

The Abstainers and General, started in 1883, gives its experience of the thirty-one years up to 1914:—

1884-1914 (31 years) Age Periods.	Years of Life under Observation.	Deaths Expected under Hm Table of Institute of Actuaries.	Actual Deaths.	Ratio of Actual to Expected Deaths.
10-24 . . .	18,098	112·8	41	36·3 %
25-34 . . .	62,973	477·9	166	34·7 %
35-44 . . .	55,849	560·9	186	33·2 %
45-54 . . .	29,705	449·6	202	44·9 %
55-64 . . .	10,656	288·7	157	54·4 %
65-90 . . .	2,774	184·3	138	74·9 %
Total .	180·055	2074·2	890	42·9 %

This office has not published its mortality in General Section.

The Scottish Temperance, also founded in 1883, contributes the following:—

MORTALITY EXPERIENCE (30 YEARS: 1883-1912).

Period.	General Section.			Temperance Section.		
	Claims Expected.	Actual Claims.	Ratio of Actual to Expected.	Claims Expected.	Actual Claims.	Ratio of Actual to Expected.
1883-1887 . .	11	7	62 %	43	15	35 %
1888-1892 . .	49	33	68 %	159	79	50 %
1893-1897 . .	95	67	70 %	290	138	48 %
1898-1902 . .	164	118	72 %	444	188	42 %
1903-1907 . .	223	123	55 %	609	298	49 %
1908-1912 . .	271	186	69 %	770	356	46 %
Total (30 years)	813	534	66 %	2,315	1,074	46 %

Another office started life business in 1896. The mortality for both sections from that date is given below:—

MORTALITY EXPERIENCE FOR THE YEARS 1896-1914
(19 YEARS).

General Section.			Abstainers' Section.		
Expected Deaths.	Actual Deaths.	Percentage.	Expected Deaths.	Actual Deaths.	Percentage.
295	179	60.68	68	19	27.95

It must, of course, be remembered that the last three offices being young (with a large proportion of their lives near to medical selection), their actual death-rate is lower than will probably be the case later on, but the percentages submitted by the two latter offices illustrate the same difference of mortality between the two classes as shown by the older companies.

The Scottish Imperial, established in 1865, opened a separate department for abstainers about twenty years ago. This office has now become merged in another, so that the mortality results for the last few years are not accessible, but for the nine years 1896-1904 they are as follows:—

General Section.			Abstainers' Section.		
Expected Deaths.	Actual Deaths.	Percentage.	Expected Deaths.	Actual Deaths.	Percentage.
750	649	86.53	56	22	39.29

The following offices, while not able to contribute any

mortality statistics, give a monetary advantage to abstainers as follows :—

“British Equitable,” on ordinary whole-life policies, a reduction of 5 per cent from the tabular premium where the proposers have been abstainers for at least five years. “Royal London” states: “We differentiate between abstainers and non-abstainers by allowing the former a rebate of 5 per cent on the tabular premiums, provided they are abstainers of at least two years’ standing”. “Sun Life” state in their prospectus: “Assurances now being effected on the lives of total abstainers of at least two years’ standing are subject to a reduction of 5 per cent under Tables A. and A.A.”. (These are whole-life, with and without profit tables.) “The Society reserves the right to call for a declaration of continued total abstinence before accepting any renewal premium at the reduced rate; should the life assured be unable or fail to sign this declaration, the reduction would be forfeited.”

The “Yorkshire” has instituted a special section for abstainers, “under which the profits are separately ascertained and specially distributed in their favour”. By this arrangement the abstainers have received a substantially larger bonus than has gone to the non-abstainers.

As indicating that the abstainer is no longer regarded as an inferior life, but the contrary, two large London offices, who do not profess to give any advantage to that class, recently allowed a gentleman in the West of England a reduction of 5 per cent from his payments on two £5000 policies, simply in recognition of his abstinence; while a solicitor in the same town obtained a material reduction in his premium for a £1000 policy with one of the oldest Scotch companies on the same grounds.

In Liverpool, on inquiry at the branch office of one of

the oldest of English Life Companies, it was ascertained that though they had no separate section for abstainers, they would undoubtedly be prepared to make a premium reduction on account of my abstinence.

A New York paper sent out the following question to several American Life Companies some time ago: "As a rule, other things being equal, do you consider the habitual user of intoxicating beverages as good an insurance risk as the total abstainer? If not, why not?"

The following extracts indicate the character of the replies: *Ætna Life*: "No. Drink diseases the system." *Berkshire Life*: "No. Drink destructive to health." *Massachusetts Mutual Life*: "No. Reduces expectation of life nearly two-thirds." *Michigan Mutual*: "No. Drink dangerous to health and longevity." *Mutual Life*: "No." *New York Life*: "No." *Provident Savings Life Assurance Society*: "No. Drink cuts short life expectation." *Security Mutual*: "No. Use tends to shorten life."

The way in which the various Life Offices treat proposals from publicans is very suggestive. Inquiries have been sent to eighty of the offices, asking how they deal with this class of life, and the following list is compiled from their replies:—

PROPOSALS FOR WHOLE-LIFE ASSURANCE BY PUBLICANS.

Offices Declining.

Abstainers and General.	<i>Mutual Life and Citizens of Aus-</i>
Clergy Mutual.	<i>tralia.</i>
Friends Provident.	<i>Sceptre.</i>
Law Union and Rock.	<i>Scottish Life.</i>
Mutual Life Insurance Co., of	<i>Scottish Widows.</i>
New York (if actually en-	<i>United Kingdom.</i>
gaged in bar).	<i>University.</i>

Charging £2 2s. per cent extra on the sum assured.

Scottish Temperance.

Charging £2 per cent extra on the sum assured.

Legal and General.
Marine and General.
Pearl Life.

Prudential.
Refuge.
Royal London Auxiliary.

Charging £1 10s. per cent extra on the sum assured.

British Widows. | Pioneer.

Charging £1 1s. per cent extra on the sum assured.

Britannic.

Charging £1 per cent extra on the sum assured.

Alliance.
Atlas.
British Equitable.
British General.
Caledonian.
Century.
Clerical Medical (minimum).
Colonial Mutual.
Commercial Union.
Eagle.
Edinburgh Life.
English and Scottish Law Life.
Equity and Law Life.
General Accident.
Gresham.
Guardian.
Life Association of Scotland.
Liverpool, London, and Globe
(and upwards).

London Assurance Corporation.
London and Lancashire.
Metropolitan Life.
National Provident (if accepted
at all).
North British and Mercantile.
Northern.
Norwich Union.
Phoenix.
Provident Clerks (minimum).
Royal.
Scottish Amicable (only accept
in select cases).
Scottish Metropolitan.
Scottish Provident.
Scottish Union and National.
Standard.
Sun.
Star.

With no fixed rule. Each case treated on merits.

General Life.

| London Life.

Royal Exchange.

Charging 50 per cent extra of premium.

Wesleyan and General.

How severe this extra is will be realized if the non-profit rate for a person aged twenty-five is taken, when it will be seen that those offices charging £2 per cent extra would issue to an ordinary assurer a policy for materially more than £2000 for what would be the cost of £1000 to a publican. Remembering that the publican is usually comfortably housed, clothed, fed, and not subjected to severe exposure, the terms which the various offices for protective purposes have found it requisite to impose afford strong evidence of the deleterious and dangerous character of the article he dispenses, and indicate that, injurious as it may be, and is, to the community, it is no less destructive to the vendor.

The experience of the "Prudential" in reference to this class of life is very noteworthy, as more than forty years ago they suffered from rather a heavy mortality in their Ordinary Branch, which, on examination, proved to be aggravated by the death-rate of those in the liquor trade; and they issued a circular, dated 31 October, 1874, intimating "that henceforth a premium of 15s. per cent will be charged in addition to the tabular premium on the lives of beer-shop keepers, licensed victuallers, and their servants". A few years later this was found insufficient, and the extra was raised to 21s. per cent, and on 29 February, 1896, was further raised to £2, where it stands at present; and the manager in a letter stated "it was modified in consequence of a very unfavourable mortality which we had for some time experienced from this class of lives".

A most valuable paper on this subject was contributed to the International Actuarial Congress in Berlin four years ago by Mr. John McDonald, F.I.A., from which the two succeeding tables have been taken (pp. 124-5). The table on p. 125 shows that the entail of mischief is not cut

PRUDENTIAL ASSURANCE COMPANY'S EXPERIENCE FOR THE 32 YEARS 1874-1905 IN RESPECT OF POLICIES EFFECTED WITH THEM IN THEIR ORDINARY BRANCH ON WHICH AN EXTRA PREMIUM WAS AT ANY TIME CHARGED IN CONSEQUENCE OF CONNEXION WITH THE LIQUOR TRADE

(Extracted from *Mr. John McDonald's paper, read before the International Actuarial Congress in Berlin, 1906*)

	Number of Policies.	Years of Life.	Average Duration (Years).	Actual Deaths.	Expected Deaths by Om Table.	Percentage of Actual to Expected Deaths.
Full rate charged :—						
Class 1. Male Lives (normal) Whole-Life Assurances	10,446	53,225	5.10	2,057	989.8	208
" 2. Male Lives (normal) Endowment Assurances	16,811	106,339	6.33	1,735	999.7	174
" 3. Male Lives (rated up) Whole-Life Assurances	927	7,214	7.78	284	121.2	234
" 4. Male Lives (rated up) Endowment Assurances	2,058	11,955	5.81	276	111.2	248
" 5. Female Lives (normal) Whole-Life Assurances	2,561	20,606	8.05	629	463.3	136
" 6. Female Lives (normal) Endowment Assurances	4,728	32,150	6.80	408	327.4	125
Half-rate charged :—						
Class 7. Male Lives (normal) Whole-Life Assurances	235	1,771	7.54	50	38.5	130
" 8. Male Lives (normal) Endowment Assurances	871	6,609	7.59	80	61.3	130
Total	38,637	239,869	6.21	5,519	3112.4	177

MORTALITY AFTER GIVING UP CONNEXION WITH TRADE IN INTOXICATING BEVERAGES
 (Extracted from Mr. John McDonald's paper, read before the International Actuarial
 Congress in Berlin, 1906)

Age Groups.	Whole Life.			Endowment Assurances.			Age Groups.
	Years of Life.	Actual Deaths.	Percentage of Actual to Expected Deaths.	Years of Life.	Actual Deaths.	Percentage of Actual to Expected Deaths.	
20-29	190	2	333	2,411	18	150	20-29
30-39	1,088	22	268	6,252	86	190	30-39
40-49	2,774	65	205	5,928	103	159	40-49
50-59	3,744	114	155	2,700	65	130	50-59
60-69	2,594	133	136	358	18	155	60-69
70-79	677	70	136	—	—	—	70-79
80 and upwards	26	7	180	—	—	—	80 and upwards.
Total	11,033	413	155	17,649	290	158	

off when a person passes out of the liquor business, but is persistent for a protracted period.

It may be noted that a considerable number of offices charge an extra for licensed grocers.

The value of abstinence principles has been widely recognized by Accident Insurance Companies, the following offices giving a reduction of 10 per cent of the tabular rates to abstainers. This is slightly modified in the case of several offices in the later years, when the policies become entitled to a reduction of premium by the efflux of time, but in all cases it is a clear reduction for, at least, the first five years of the existence of same :—

Abstainers and General.	London Assurance Corporation.
Atlas.	London Guarantee and Accident.
British Crown.	London and Lancashire.
British General.	North British and Mercantile.
British Law.	Northern.
Caledonian.	Ocean Accident.
Car and General.	Pearl.
Century.	Phoenix.
Colonial Mutual.	Pioneer.
Commercial Union.	Royal Insurance.
Essex and Suffolk.	Royal London Auxiliary.
Fine Art and General.	Royal Scottish.
General Accident.	Scottish Life.
Guardian.	Scottish Metropolitan.
Law Accident.	Scottish Temperance.
Law Union and Rock.	Scottish Union and National.
Liverpool, London, and Globe.	

The manager of the "Ocean" says: "The result upon our claim experience cannot be precisely ascertained, but I have no doubt at all it justifies the abatement."

The secretary of one of the earliest offices to give a premium reduction for abstinence told me: "We do not find the advantage to be so much in the greater immunity

from accidents enjoyed by teetotallers as in their more rapid recovery when stricken down by accident."

The summing up of the foregoing testimony as to the experience of the various offices may be given in the words of a famous actuary, who, some years ago, in response to a question by a policy-holder as to the reason for teetotallers having a larger bonus, replied: "The bonus is a matter of fact. I cannot help people dying. Those who don't drink don't die so fast." And that, in a nutshell, is the teaching of the evidence gathered here: "Those who don't drink don't die so fast".

VI

ALCOHOLISM IN RELATION TO WOMEN AND CHILDREN

BY

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ALCOHOLISM in relation to women and children cannot be described as an exhilarating or pleasant subject on which to write. I, however, venture to hope that this chapter will be read by those for whom it is intended, viz. by the women of our land. It is useless to hide our heads like the ostrich and to deny the danger which we refuse to face. The peril is here, it is very close, it is very urgent, and it is useless to turn away and deny its existence; but, unless we know, we cannot appreciate; and unless we make the effort to understand, we shall certainly fail to find a remedy. It is to induce women carefully to consider and inquire into this subject themselves that the following words are written. It is proposed to view alcoholism in its relation to women under various aspects, chiefly those which relate to their duties to their infants,

their children, their homes, their dependents, and themselves. We will consider first the influence of the mother on her unborn babe.

ANTE-NATAL INFLUENCES

No doubt the history of every individual has been pre-written for thousands of years, and any attempt to modify his constitution and characteristics must be begun long before he has any physical being. However, it is not in the power of the philanthropist or the legislator to go back beyond a certain term, and that term is practically set for us, not by the nine months of utero-gestation, but by the constitution of each individual's parents, especially his mother. The development and well-being of each individual depends very largely on his environment, but still more upon the condition, mental, moral, and physical, of the parents to whom he is born. We have been accustomed to think that certain diseases, such as phthisis, were hereditary, and it is only lately that we have been awakened to the fact that children are born, not with a distinct heritage of consumption but with a certain peculiarity of tissue rendering them more liable to invasion by the bacillus of tubercle, and we have learnt that to a great extent it lies in our power to shield the organism from such invasion and so to strengthen the tissues that they shall not be unduly liable to attack. Much the same argument applies to alcoholism. The child of the female drunkard is not born with a direct alcoholic tendency, but is probably born with ill-nourished tissues, and especially with a poorly developed brain and nervous system, which render him more liable than a healthy individual to fall under the influence of drink. In addition to this, such a child is seldom properly nourished during

infancy and childhood; his mother's condition prevents her affording him healthy milk, and later on from earning money necessary for his support, and from possessing those habits of thrift and order which help to maintain a healthy and happy home. In addition to all this, the character and the example of an inebriate mother conduce most powerfully to the development of an alcoholic tendency in her offspring. In Sir George Newman's work on "Infant Mortality,"¹ we find that Dr. W. C. Sullivan prosecuted an inquiry into the degeneracy of the descendants of alcoholics from amongst the female prisoners in Liverpool. He made notes of 120 women to whom there were born 600 children; of these 600, more than 55 per cent were either still-born or died before attaining their second year. He also observed that there was a progressive death-rate in the families of inebriate mothers, and that the number of still-births and deaths in infancy increased with the number of the family, the mother's alcoholism constantly tending to cause premature and still-born or sickly offspring. He found that of the children who were born and survived the period of infancy some 12 to 15 per cent were epileptic.

Dr. Claye Shaw² also holds that abortion and premature birth are much commoner in alcoholic than in healthy women. He thought that it was fair to conclude "that a warped or dwarfed intelligence would accompany defects of structure, and this should be looked for in the epilepsy, impulsiveness, criminal conduct, suicidal and homicidal acts which lead the victims of maternal excesses to Broadmoor, to county asylums, and to prisons."

¹ Newman, George: "Infant Mortality". London, 1906.

² Shaw, T. Claye: "The Psychology of the Inebriate Mother". "The British Journal of Inebriety," October, 1903.

From the same authority we learn that at the Bicêtre Hospital 41 per cent of idiot and imbecile children had drunken parents, and that the mother was much more frequently an inebriate than the father. The testimony of the late Dr. Wigglesworth was to the same effect. He found that at the Rainhill County Asylum one-sixth of all the cases of insanity had a history of alcoholic parentage.

It is well known to physiologists that the organs and functions of pregnant women are in a peculiar condition, not indeed pathological, but of an instability which readily becomes pathological. Medical opinion is at present uncertain as to the exact causation of pernicious vomiting, eclampsia, and degenerations of the glandular organs (especially the liver) during pregnancy, but they are entirely at one as to the existence of these conditions and of their fatal tendency. Further, medical opinion is unanimous that the health of the expectant mother and of her offspring depends in a large measure on her environment during pregnancy. There is no doubt that suitable diet together with fresh air, exercise short of fatigue, and proper clothing are the text of the gospel of physiological righteousness which we have to preach to expectant mothers. Not one of these essentials of health is enjoyed by the alcoholic mother. There is no doubt that alcohol is a protoplasmic poison, and that it interferes seriously with the structure and functions of all the organs, and that its deleterious influence falls with the greatest weight on the most highly complex and elaborate structures, viz. those of the nervous system. To all this may be added the general poverty and misery which surround such women. The child is in the majority of cases heavily handicapped from the beginning, and even if born alive is in a condition little fitted to survive the perils that

surround infancy. From such mothers it is impossible that a vigorous, healthy, and intelligent race can be bred.

Unfortunately, it is not only the poor and destitute women who suffer from alcoholism. In these days of hurry, excitement, and over-fatigue many women in society, who are above the temptation of "misery drinking," have recourse to nips of strong drink to enable them to get through their daily round of so-called "pleasure". The result to the unborn child is the same, for its mother's organs and functions are as much injured by excess as are those of poor women by a deficiency of food, while alcohol is a common factor. We hear much of the *Simple Life*, and of the desirability of the return of the educated and leisured classes to a plainer and more wholesome standard of living. There is no doubt that this is much to be desired in the interests of all concerned. It is manifestly the duty of doctors (both men and women), of ministers of religion, of nurses, and indeed of all who have the welfare of the nation at heart, that they should by every means in their power impress upon the women of our country, and especially on expectant mothers, the absolute necessity that exists for a radical reform in the matter of diet and of general regimen. Much has been said about the neurotic tendencies of the age, and the higher education has been blamed for the "nervousness," neurasthenia, and hysteria which are so common. Probably the higher education has had but a very indirect influence in this matter. It is of course true that any exercise of mind or body carried to excess induces over-fatigue, and if persisted in may lead through disorder of function to injury of structure; but the prime cause of this injury will in the majority of cases be found in some form of over-stimulation or in some form of sedative. It is probable that over-

taxed people, whether men or women, resort too readily to alcohol, tea, and coffee as stimulants, while the consequent nervousness, sleeplessness, and headache are unwisely treated by the careless self-administration of the popular sedatives, sulphonal, veronal, trional, etc.

THE INFLUENCE OF ALCOHOLISM ON INFANTS AND CHILDREN

It is a melancholy fact that the rate of mortality in children has by no means sunk in proportion to the diminished mortality at all ages. It still remains abnormally high, especially in large towns where the artificial methods of life, the employment of mothers in factories and other occupations which lead to the premature weaning and neglect of young children, the difficulty of a pure and adequate milk supply, and the deterioration of the air, tend to increase the incidence of disease, and especially of diarrhoea and other dietetic illnesses. All the children in towns are more or less affected by these factors, but more especially the children of alcoholic mothers must suffer.

It has been found that alcohol is present in the milk of the mother when she has taken that article in excess; the child then absolutely receives alcohol as part of his diet, with the worst effect upon his organs, for alcohol has a greater effect upon cells in proportion to their immaturity. The milk of the alcoholic mother not only contains alcohol but it is otherwise unsuitable for the infant's nourishment. It does not contain the proper proportions of proteid, sugar, fat, etc., and it is therefore not suited for the building up of a healthy body.

Poverty is another potent factor in the malnutrition and general misery of the child. This is partly the result of economic laws beyond the woman's control, but it is also

partly due to her want of ability to make the best of her circumstances. The whole question is complex; the woman drinks because she is miserable, and she is still more miserable on account of her intemperance. The alcoholic mother not only furnishes bad milk to her child if she suckles it, but she is more likely to bring it up by hand, and hand-fed babies are more liable to disease and death than those nursed at the breast. The milk available for the poor is in many instances of bad quality, and it is also badly kept and badly prepared for use. The milk that is bought by the poor in pennyworths is seldom fresh and seldom pure; it has been kept in small, close shops, exposed to contamination of dust and flies; it is dipped out with a by no means clean dipper into the jug which is probably contaminated from the souring of the last supply of milk. When it reaches the child's home it is badly kept, and still further advanced in decomposition before it is mixed and given to the infant. Then again, owing to ignorance and laziness on the part of the mother, it is too often given from a bottle provided with an india-rubber tube which cannot be adequately cleaned and which therefore swarms with micro-organisms. Is it any wonder that the unfortunate babes are the victims of gastrointestinal catarrh, of inflammatory diarrhoea, and the so-called "cholera" of infants? Many babies unfortunately fare even worse, for their contaminated milk is mixed with various forms of farinaceous food, none of which can be digested by the child until the salivary glands begin to work at about six or seven months of age. These children then receive highly fermentable food mixed with the milk already commencing to sour; the wonder is, not that so many die but that any survive.

Apart from the question of food, the clothes of these

miserable infants are generally insufficient to protect them from alternations of heat and cold, from damp and chill.

As though all this were not enough to secure the supply of sickly, ill-formed and neurotic children, it is found that alcoholic mothers, and indeed others who are not themselves alcoholic, frequently administer small quantities of spirits to infants and children. In the Museum of the Royal Free Hospital there is the liver of a little girl, aged five years. It is a typical gin-drinker's liver, shrunken and granulated. The poor little child had received brandy in quantities varying from a few drops to a teaspoonful a day during the whole of her short life. Many people are firmly convinced that spirits are the best, if not the only, cure for all sorts of indigestion and flatulence; they also know it as a ready means of quieting a crying child, and consequently the administration of spirits to infants and children is only too common. In many instances the foundations of future inebriety are laid in this way. The child who has been accustomed from babyhood to stimulants is very likely to continue their use when he becomes master of his own actions.

ACCIDENTS TO CHILDREN DUE TO ALCOHOLISM

To alcoholism must be attributed many of the accidents which happen to children. Earliest in point of time, with the exception of accidents at the time of birth due to drunkenness on the part of the mother or her attendants, must be mentioned overlaying.

As a rule in towns the child shares its mother's bed, and partly owing to its own feeble vitality, and partly to her carelessness, in not a few cases it is suffocated in bed. Mothers of this class are always sufficiently tired

by night, but when to natural fatigue is added the stupor induced by alcohol the child's chances are poor indeed.

In continental countries the use of the cradle is almost universal, and the same practice prevails in rural England. The child in its cradle is relatively safe. Not only from absolute overlaying but also from quasi-suffocation by deprivation of the free access of air; but in large towns, chiefly owing to overcrowding, there seems to be no room for the cradle, and the child lies between its father and mother with the melancholy result stated above. That this is really due to alcoholism is proved by the fact that the "accident" is out of all proportion more frequent on Saturday and on Sunday nights than on any other, money (and the consequent drunkenness) being plentiful immediately after pay day.

Children of alcoholic parents are very likely to receive a share of the blows and injuries common in such families; they are also very liable to perish by fire owing to carelessness in the use of matches and the want of suitable fireguards and other protections. When a little older, the children of inebriate mothers are allowed to wander out into the street to encounter the dangers of passing vehicles, a danger greatly enhanced in the present day.

ALCOHOLIC ENVIRONMENT AS IT AFFECTS THE HEALTH AND NUTRITION OF SCHOOL CHILDREN

The children of alcoholic parents are usually found to be stunted in growth, deficient in weight, suffering markedly from anæmia, and in many instances infested by vermin. The father, if alcoholic, probably gives but a small portion of his wages to the mother, he neglects his home and deprives the children of the protection and care they should enjoy from him. Should the mother also be

alcoholic, and even in the case in which the father is sober, there is a lamentable waste on her part of the family resources; she lies late in bed, the children are neither washed nor dressed properly and the elder ones go breakfastless to school. No wonder that they are the pallid, listless little mortals that teachers are compelled to put to sleep for the first hours of the school-day; the little ones have been kept up late overnight by the noise, light, and disturbance round them, the elder ones having probably played in the street until a late hour, and in the morning they are heavy with sleep, unrefreshed by any apology for a morning bath, hungry and exhausted for want of food. And yet it is of this unpromising material that our teachers are expected to make the bones and sinews of the nation! Can we wonder that reformatories, idiot and imbecile asylums, lunatic asylums and prisons are full? Can we wonder that there is a difficulty in obtaining recruits of standard development for the army, and that many of the great railway companies complain that they cannot secure strong and healthy railway servants? Can we wonder that much of our trade and prosperity is slipping from us and passing to other nations? Can we wonder that with such unstable brains and feeble bodies, Macaulay's old lament is true of us that

As we wax hot in faction,
 In battle we wax cold;
 Wherefore men fight not as they fought
 In the brave days of old?

As the children grow older and their grasp on life is stronger, the excessive mortality of the first months and years is diminished. There has been no doubt a survival of the fittest, but the fittest are themselves but little

fitted for the battle of life. The alcoholic environment is potent to blight the promise of childhood. It is from these children, as described in the last paragraph, that measles, whooping cough, and other childish diseases claim the heaviest toll of victims. Without the preceding semi-starvation and generally depressed vitality, the fatality of these diseases would be inexplicable, for, generally speaking, the children of well-to-do parents pass through them unscathed. It is among the degenerate children that the immediate mortality is heaviest, and that the after-effects, such as middle ear disease and tuberculosis, are most frequent. The number of cases of skin disease, of eye and ear disease, and the general failure of development in height and weight revealed even by our present imperfect system of medical inspection of school children, ought to be sufficient to open our eyes to the necessity of reformation in the bringing up of children and of their adequate inspection and treatment during the years of school life. Of course the defects noted occur amongst *all* school children, but they are specially frequent among those whose parents have been unable or unwilling to give them proper care.

ADOLESCENCE OF BOYS AND GIRLS AS AFFECTED BY TEMPERANCE OR INTemperance

There can be few pleasanter sights than is afforded by the healthy young people of a vigorous and temperate nation. The tall, straight boys; the lithe and graceful girls; the bright eye, clear skin, and general vigour of well-bred, well-grown young people is a sight for the gods. The mental and moral characteristics of such boys and girls are equally charming, the sweet records of healthy and innocent childhood blending with the yet sweeter

promises of vigorous and holy manhood. Such things are possible, such young people have existed and do still exist, but they are not to be found amongst the boys and girls who are the offspring of intemperate mothers, and who have grown up in the miserable homes ruled by such women.

On the contrary, we too often see shambling, awkward boys with dull eyes, coarse features and loose lips; the hoydenish, brazen-faced girls, whose only idea of recreation is boisterous and disorderly play. These are the products, not of our civilization but of the brutality induced in mind and body by over-indulgence in alcohol. In such young people all seems lost; intelligence, vigour, manly pride, and an honest desire for work are conspicuous by their absence, and yet these degenerate young people are the fathers and mothers of the future. "The people is destroyed for lack of knowledge." And yet what is more difficult than to teach temperance to the young people to whom it is merely a by-word, nothing better than a "fad of the parson," and, as the Scotch would say, of "the unco' guid". One of the difficulties that beset the teacher who would inculcate the principles and practice of temperance, arises from the fact that in painting a convincing picture of the wrongs and evils of intemperance, he is demonstrating to the children the plague of their own homes. It is necessary if possible, to maintain, in children, love and reverence for their parents, and yet this seems wellnigh incompatible with the adequate presentment to them of the evils of alcohol. A partial solution of the difficulty may be found in substituting the gospel of "thou shalt" for the old law "thou shalt not"; we may succeed in displaying the advantages of temperance, soberness, and chastity, and there is a

hope that such teaching may be welcomed even by those who cannot or who will not accept the direct negative. Much, too, can be done by promoting the health and the comfort of young people ; by the provision of wholesome meals, not necessarily to be given to them but to be procured on very moderate terms ; by inciting in boys and girls a wholesome rivalry in cleanliness and propriety of clothing ; by organizing for them rational games to take the place of their hooligan play ; by the provision of large and well-furnished gymnasia, baths, clubs, and institutes. All this and much more may be done and must be done, for if it be a mere question of economy, the nation will spend less in saving the young from ruin than in costly, and frequently futile, attempts to redeem them after the mischief has been accomplished. We must not look to legislation to do all—no nation was ever made prosperous or righteous by Act of Parliament—but we do thankfully acknowledge the great help that moderate and thoughtful legislation can be, especially when enforced not only with judicial firmness but with Christian charity.

The prohibition of the sale of alcoholic beverages to children under fourteen,¹ and the insistence that stimulants shall be entrusted to youthful messengers in sealed bottles only has done much to help. The age limit might be raised with advantage to sixteen or seventeen years of age, and a still greater advantage would be found if the sale of liquor to be drunk off the premises were rigidly separated from the bar service and restaurant. The real safeguard, however, to the young, would be the gradual formation among them of a healthy and intelligent public opinion that would lead them to value temperance for its own sake (and that not only in the case of intoxicating

¹ The Intoxicating Liquors (Sale to Children), Act, 1901.

liquors), and also for the fruits of increased mental and moral worth and physical well-being. And here we think that employers of labour, both large and small, might be invited to help, for if they were particular in giving employment to none but the sober and respectable, and if the trades unions made stringent regulations against the admission of drunken and undesirable fellow-labourers, the whole tone of the nation would be greatly raised during the lifetime of the present generation.

DIFFICULTIES AND TEMPTATIONS TO ALCOHOLISM, WITH SPECIAL REFERENCE TO YOUNG WOMEN

Possibly a few words may be said here with reference to the special difficulties and temptations of young girls and women.

Woman's character is, as a rule, more emotional and sympathetic than is that of man. She is more easily led by her affections; ruled, we are told, more by her heart than her head, therefore she is likely to feel more keenly the disappointments and sorrows of life. She develops younger than does her brother, and is generally credited with somewhat less stability, both physical and mental. It is certain that developmental changes are both more marked and occur sooner in the girl than in the boy, and whereas his greatest temptations probably occur between eighteen and twenty-five, the incidence in the girl is decidedly earlier. It is generally alleged by the highly experienced teachers of physical exercises both in Sweden and in Denmark that the girl's capacity for, and interest in, gymnastics and education generally suffers a temporary eclipse from about fourteen to sixteen. This is very similar to the well-known periodic pauses in growth and development that occur in younger children. There is

no doubt that at this period of her life the girl needs special help and protection from herself. Rapid physical development makes great demand on her constitution, while unrecognized, and to her inexplicable, feelings and desires need kindly regulation and sympathetic control. A safety-valve has to be provided, and much praiseworthy effort has been already directed to this end by the numerous girls' clubs, singing classes, etc., that have been started. Much has been done, but more remains to be accomplished, and beyond all things it is necessary that what is done shall be done by the large-hearted sympathy of other women, and not in any merely formal manner. It is probably not Utopian to desire that the young girls of the educated and leisured classes should help to show a practical love and sympathy towards their less fortunate sisters, and if they work under the guidance of older and more experienced women there would be much to be gained and nothing to be lost by such endeavours.

Further provision ought to be made for the careful instruction of young married women in their duties both as housewives and as prospective mothers. With the beginning of married life comes much self-revelation, and the call for a higher unselfishness and to a different form of duty. Many of our young women, however, undertake this condition in the most absolutely unprepared manner, and their happiness and that of their husbands and prospective children may be wrecked before the danger is perceived. The young woman who has hitherto been temperate, or even an abstainer, begins to feel undue fatigue, and possibly vague sensations of illness; the older women about her are all too ready to advise her to take stimulants, as they themselves have perhaps done under similar conditions. Temporary relief is of course ob-

tained, and from that moment the downward course is but too easy. Kind and wise instruction, if possible personal, and if not, by means of short bright books and leaflets, should be given.

Another period of great temptation and difficulty to women comes later in life when the key-note is no longer evolution but involution; a time when the joys and the eagerness of life are on the wane, and when perhaps without the solace of husband and of children, the woman is left alone to fight for the rest of her existence in a world which has no longer the glamour and the magic imparted to it by youth. To all this psychic decadence may be added a failure of health and strength too ominous of a narrowed and it may be even a poverty-stricken autumn of life. Here again the temptation to relieve care and to revive the dying fires of life by the taking of alcohol is very great.

EMPLOYMENT OF WOMEN AS A FACTOR OF ALCOHOLISM

There are some forms of employment which are entirely unsuited to women and which lead almost of necessity to intemperance and to other forms of immorality.

First with regard to their employment as barmaids. A most useful pamphlet has been published dealing with this subject.¹ We find from it that it has been estimated that 75 per cent of barmaids are intemperate, and the chief causes assigned are the long hours and constant standing. Several cases are quoted in support of this. In one instance the bar was opened at 6 a.m. and the barmaid was at work up to midnight, having, however,

¹ "Women as Barmaids," published for the Joint Committee on the Employment of Barmaids, with preface by the Right Rev. the Lord Bishop of Southwark. London, 1905.

two hours' rest in the day. Another woman was on duty until nearly 1 a.m., having to clean up after business hours; she also had a short rest in the day, but said she was too tired to undress at night, lying down in her clothes; and yet a third said she rose soon after 5 o'clock in the morning and went to bed after 1 a.m.

In the section dealing with the age of barmaids it is mentioned that about two-thirds of the total number are between the ages of fifteen and twenty-five, there is then a very remarkable diminution in their number, and a still greater drop at the age of thirty-five. It is said to be almost impossible for the ordinary barmaid to obtain work after the last-mentioned age. It is horrible to learn "that women tried by long hours and fatigue cannot compete successfully with young fresh girls in their teens". A selection from advertisements is made in this chapter, among which are the following: "Two stylish young ladies required for saloon bar"; "Barmaid wanted—must be attractive"; "Required at once attractive young lady as barmaid"; "Wanted for a high-class wine lounge a stylish young lady, aged about 24"; "Wanted a young lady to assist bar and play piano for a small free-and-easy, must be young and of nice appearance"; "Young lady wanted for a select wine room in the West End, gentlemen only, must be well educated and of good appearance, age not over 25". Photographs are also generally demanded before engagement, and it is all too evident that these unfortunate girls are not so much wanted for the ordinary work of serving the customers as for their powers of attraction and the gratification of the customers. It is no wonder that approximately 75 per cent of barmaids are intemperate.

In a report to the committee Miss Orme stated that,

as a rule, barmaids are allowed a certain quantity of intoxicants daily; she also said that many of the employers she saw admitted that the barmaids drank to excess, and that they were constantly dismissed for intemperance. Apparently most employers dismiss the girls when they find them intemperate; such dismissal, however, seems to be quite useless when once the habit has been formed. The practice of "treating" barmaids by customers is general but not universal; the barmaids are afraid to refuse to drink what is offered for fear of giving offence to customers; the results to these unfortunate girls are what might be expected; in many cases violent death by accident occurs, as in the case of a girl returning home drunk who fell into the river and was drowned; another under similar circumstances strayed on to the railway line and was killed by a passing train; many commit suicide; many are decoyed away and outraged; a large number become habitual inebriates and sink to the very lowest depths, while a few are reclaimed with difficulty. The moral effects of the employment of women as barmaids are still more deplorable.

Although the number of barmaids in rescue and maternity homes and lock hospitals is not absolutely large, it is large when the number of barmaids is compared with those of domestic servants. Mrs. Bramwell Booth is of opinion that the number of immoral women in the West End of London who have been barmaids is one-quarter of the whole.

Other employments have also a considerable tendency to cause or to favour inebriety, especially occupations in which there is much physical fatigue, such as standing for long hours or monotonous, uninteresting work. Inebriety is found to be particularly common amongst women em-

ployed in laundries and in factories. There is also a considerable temptation to women waitresses in restaurants, and in some private houses where there is but little supervision, and where carelessness prevails with reference to drink. The employment of married women in factories and laundries is even more to be deplored than that of single women, because in addition to the ordinary temptation and probably degeneracy of the woman herself, there is to be added the disastrous effect both on unborn infants and on living children.

Indirectly these sorts of employments for women encourage drinking among men, for anything which makes the home miserable and prevents the woman's discharge of her primary duties as wife and mother tends to increase what has been called "misery drinking" among the men.

Nor is it only the uneducated women who are liable to enter employments in which there is a special temptation to intemperance. There is no doubt a very great liability to this disaster in actresses, public singers, reciters, and nurses. The life of the actress and public singer is usually one of great strain and stress; their life alternates between a few hours of excitement and exertion and a considerable period of idleness. No doubt much could be done to make the lives of actresses and singers healthier both to body and mind. There is nothing in acting or in singing which necessarily leads to intemperance, but not only have we to reckon with the so-called "artistic temperament," by which is generally meant a preponderance of the emotional faculties, and a certain want of self-discipline and self-control, but the circumstances of the life might well be made healthier. These women ought to be encouraged to take regular outdoor exercise, to eat plain and wholesome food, and to abandon the abuse of alcohol

and other stimulants; their hours of rest should also be regular and sufficient. No doubt in many instances a wholesome and satisfactory life *is* led, many actresses and singers being model housewives, mothers, and members of society, but such a life is in opposition to the general current of the public opinion of their fellows, and what is thus exceptional ought to be made the general, if possible the universal, rule. Nurses also, and many other women in these hard-worked strenuous days, have long hours and fatiguing employment, with too little opportunity of outdoor exercise, of relaxation, and of sleep; while the great majority of women working for their living suffer from insufficient or unsuitable food. It is a common complaint of nurses in hospitals that although the food is ample it is monotonous, badly cooked, and badly served. The same must be true of the great army of women workers in our large cities, whose middle-day meal, at any rate, is, in the majority of cases, poor in nutritive value, unappetizing, and taken uncomfortably. A great improvement has taken place of late years in the domestic management of the hospitals, and many matrons now are really the mothers of their large families, and are most anxious to promote the physical and moral well-being of their fellow-workers.

There is no doubt that in all large centres of industry there are thousands of women, who from over-fatigue, monotonous employment, inadequate food, and the incessant grind of inadequacy of means to ends, are constantly more or less depressed and deprived of the joy of living. What more natural than that they should seek some relief, no matter how temporary, and we must concede that the relief afforded by alcohol is quick and great although evanescent and in the end deadly. Surely we can all feel with our over-worked sisters how great the temptation

may be, and no care or thought on the part of the professional and leisured classes could be too great to devote to their relief and salvation.

The phrases "luxury drinking" and "misery drinking" have entered into our literature, and they are in fact sufficiently apt in representing what absolutely occurs, for on the one hand one sees the women of society and of leisure turning to alcohol to spur them on to further exertion in the pursuit of pleasure, and to enable them to fulfil what are supposed to be social duties, while on the other hand there is the whole mass of misery drinking which it has been the object of the preceding paragraphs to describe.

The idea of making a nation of total abstainers is certainly not feasible, even if it were really desirable; but if the nation is to survive, if the deplorable ante-natal and post-natal mortality of infants is to cease, if the children are to survive to a healthy and vigorous life, if we are to make the best of our great position and to live up to our imperial responsibilities, something must be done, and must be done at once, to save the women and the children of the land from intemperance and its dire effects. No doubt enormous economic questions are involved, nothing less than the unequal distribution of wealth and opportunity for work, the employment suitable for women, the whole subject of the duties of wives and mothers, and of the bringing up of children, with their education in its highest sense, in fact the whole area of Christian and social ethics, and who is sufficient for these things? It is of course impossible for any individual, or even for any committee of individuals to grapple with so vast a subject; the only hope is for those who know something about it to write, to speak, and to exert all possible influence on its behalf, and

to hope that gradually a healthy public opinion will be formed. History does not fail to give us reason for hope and cheer. The nation that succeeded in abolishing slavery, and that so greatly mitigated the treatment of prisoners, need not quail before even the hydra-headed difficulties of the temperance question. In any difficult problem it is well to simplify and to deal first with the easier factors. Many such attempts are being made at the present time with reference to our problem, and here and there public-spirited officials, whether civic or medical, are doing their best to solve that fragment of the vast problem which comes within their own sphere of duty; e.g. the late Dr. John Sykes, Medical Officer of Health for St. Pancras, initiated a scheme¹ for the instruction and assistance of expectant and suckling mothers. He advocated the teaching of hygiene to such women by doctors, midwives, maternity nurses, women inspectors, and lady visitors. In his opinion the distribution of leaflets with instructions as to hand feeding of infants was beginning at the wrong end; he was anxious that this advice should be entirely separated from that on instruction in breast feeding; he would supply the former only to women who had been compelled, under the advice of a doctor, to renounce the better method. He quoted from the cards of advice issued by the St. Pancras Borough Council which had been distributed by doctors, clergy, nurses, and visitors to the mothers of St. Pancras. Dr. Sykes mentioned the fact that St. Pancras had been very fortunate in its two women inspectors, who had been most enthusiastic and successful in their work. The experience of these ladies

¹ Sykes, J. : "The Teaching of Hygiene to Expectant and Suckling Mothers". Report of the Proceedings of the National Conference on Infantile Mortality. Westminster, 1906.

was that working-class mothers were very anxious that their children should be born healthy and robust; that prematurity, still-birth, and the enormous mortality of young infants was due chiefly to want of knowledge; and that by means of proper advice and assistance the health of expectant and suckling mothers could be greatly improved, with a corresponding reduction both of mortality and of morbidity amongst the children. It would appear from Dr. Sykes' paper, to which we gladly refer our readers, that much good has been already accomplished in St. Pancras and in other boroughs of London by this or similar methods.

Among other recommendations made by Dr. Sykes there was one which commends itself specially to us, viz. to induce employers to provide cradle rooms, and facilities in workshops, factories, etc., so that suckling mothers might bring their babies with them and feed them naturally. It is but a short time that would be required off duty once in the middle of the morning and once in the middle of the afternoon.

A while since great interest was aroused in Huddersfield by the public-spirited action of its Mayor, Mr. Benjamin Broadbent, who gave £1 to every baby surviving the first year of life in the township of Longwood.

INFLUENCE OF MOTHERS AND MISTRESSES

No paper on alcoholism in relation to women and children would be complete without a few words with reference to the duties of mistresses of households and mothers of families in this matter.

Women have no voice in the legislation of the country, and but limited influence on Borough and County Councils, but their hand is on the lever which works all these

things, and by their influence on their husbands, sons, daughters, and servants, they are in the last resort in a most responsible position with regard to this question.

Every mother is responsible for the pre-natal condition of her child, for its suckling, feeding, and general education; during the years of childhood and youth her influence reigns supreme; therefore it depends on the mothers of the nation what the future men and women of that nation shall be. If she is wise she will do her best to secure that from its earliest days her child shall possess and cultivate that inestimable quality of self-control, the divine gift of the power to say "No". It is related that when some one praised Charilaus, King of Sparta, for his goodness, another replied, "How can he be good who is not an enemy even of the evil!" And so it is that none of us can attain to our full moral, mental, and physical development unless we are sufficiently the enemy of the evil to be able to deny it in our own person. "As the twig is bent the tree is inclined," and it is during the impressionable years of childhood that the future men and women of England must be taught that self-control which is essential to their welfare and that of their country. The foolish habit, of giving way to a child's desires, more particularly to its physical desires, is responsible for much of the misery and of the alcoholism of after life. The child who is constantly indulged in the matter of sweets and other such trifles whenever he asks for them, and who is taught that the merest passing desire will meet with full gratification, will develop into the man to whom the most passing desire will mean indulgence in alcohol, and in many physical gratifications that are entirely incompatible with his sound and healthy development. We do not want to go back to Puritan days in their extreme

form, we do not want to become narrow, sour, and uncharitable; we do want our people to understand the joy of life. We do not want them to take their pleasures as Froissart said they did, "*moulte tristement*," but even this would be better than the utter self-abandonment, the folly, and worse, of such celebrations as have acquired the name of "maficking". It must have been a revelation to many to find that the orderly, decent, and perhaps too phlegmatic English could give themselves up to such unrestrained orgies. It is a sure sign that all is not well with the nation, and that the mothers of the land must revert to more strenuous measures and to a simpler manner of life for their children.

The same principle runs through everything; it is not only a matter of eating and drinking but of the general power of self-government. All reform must come from within, and the power to order one's life aright, to be law-loving and law-abiding as we have been in the past will make discipline from without, the correction of penitentiary and gaol, unnecessary in adult years.

With regard to the duties of a mistress or employer of labour, every effort should be made by the provision of adequate and pleasant food, by the suggestion of drinks that may take the place of alcohol, and by the insisting on the observation of proper hours of rest and exercise, to secure the physical well-being of those around. Nor must loving care and supervision stop with this, for it is as important to secure spiritual teaching, opportunities for worship, for education, and for recreation to all workers. A woman should be the last person in the world to forget that there is a spiritual as well as a physical side to human nature, and that any one of these parts cannot be neglected without injury to the whole; and that whereas it is usually

the part of the man to earn the money and to pay the rent, the distribution of the household income and the household work rests almost entirely in the hands of the house-mother.

There is a growing disinclination among young women to enter domestic service, and the reason is not far to seek. They have been more or less educated, and have had a taste of other things than the too often monotonous drudgery of daily service. They contrast the comparative freedom of factory or shop life on the one hand with the quasi-servitude of domestic service. The fact of the evening hours being at their own disposal, and that the work is definite, really finished when the door of the factory or shop closes, is naturally attractive, and there is no doubt that if we are to maintain a supply of domestic servants the conditions of their service must be altered. It is perhaps difficult for the mistress to realize how much her servants crave for a portion of time that shall be really their own. She perhaps is willing to work night and day in the nursery with her beloved children, or in the performance of the countless small duties which make up the life of a house-mother. She must, however, remember, that the nurse who shares her maternal duties does so unsustained by maternal love; that the servants who assist her in making the home bright and comfortable for the delectation of husband and children do so without the reward that accrues to her in their devotion and love. Some servants work from the very highest motives, but others look upon the arrangement as a contract; they give so much work, the employer gives so much money, food, etc. It is useless for the mistress to complain that this is a poor and mean conception of their duty; if they are to give something beyond the contract, so must she, and there

is no doubt that the mistress who provides not only the necessary board and lodging and the covenanted wages, but who also shows a human regard for the bodies and souls of her servants will have an ample reward. In addition to the willing, cheerful service thus secured, the house-mother ought to remember that "no man liveth to himself, and no man dieth to himself," that she and her servants and children are all members of one body, and that whether she looks at it from the religious, from the patriotic, or from the merely economic standpoint, she is bound in duty and in honour to do all this. Doubtless if domestic servants had these advantages, that form of labour would again become popular. Many mistresses would be astonished to be told that the drinking which they too often have to deplore in their kitchens and servants' hall is "misery drinking". They think that because there is sufficient food nothing more is needed, but the too long hours and the utter absence from life of all beauty and joy leads to discontent and to vague yearning for other things, which in young and frivolous servants expresses itself outwardly in inordinate vanity or love of sweethearting, which too often lead to convivial drinking, while the older servants more worn by the burden and heat of the day are apt to seek fictitious strength and cheer from stimulants.

ALCOHOLISM IN RELATION TO PROSTITUTION AND DISEASE IN WOMEN

There is no doubt that most of the women who compose that sad army of the *fallen* have reached this state either because they were intemperate, or that they have become intemperate from the exigencies of their miserable life. Many girls owe their first fall from virtue to

the casual glass of wine or spirit given to them as a treat on some bank holiday or other convival occasion. As detailed in another part of this chapter, such employment as that of a barmaid leads naturally either from intemperance to immorality, or the girl is first seduced and subsequently becomes a drunkard. The same thing happens in all ranks of life, although of course not so frequently in those positions and employments which are less beset by temptation. It is well known to doctors and to philanthropists that this combination of evil is particularly deplorable, that the woman's health is sure to suffer, and that it too often leads to a miserable and early death. The diseases from which these unhappy girls suffer may be the direct outcome of their sin, and even of those who do not die many are incapacitated for the duties of a wife and mother even should restored virtue make them otherwise eligible. Besides, there is no doubt that alcoholism, with or without prostitution, exposes its victims to the influences of cold, wet, and fatigue, and that they are, as a class, particularly liable to pneumonia, bronchitis, and affections of the digestive organs. There is indeed no part of the body which does not suffer from this combination of two forms of immorality, for in addition to the special and ordinary diseases above mentioned, the nervous system is most prone to suffer, and our lunatic asylums are more or less filled with inmates who but for disease and intemperance might have been healthy and useful members of society.

GENERAL CONCLUSIONS

The more one considers the baleful influence of alcohol on woman in all her relations and on her children, innocent victims of the fault of others, the more one is driven to realize the potency and vitality of this national curse.

It is quite easy to go on happily, believing that intemperance is much on the decrease, comforting oneself with the advance in temperance that has undoubtedly been made, especially by the middle classes, and dismissing as nightmares and idle dreams the assertions made by clergy, police officers, and philanthropists as to the plague which is destroying our nation. Personally, I must confess that I never realized the extent of the trouble until I began to study the question seriously, and this is what I would desire every British woman to do. I would like her to turn her attention away from her own happy home, from her temperate husband and stainless family, and to consider what are the conditions in homes of the poor. She should consider the number of feeble, diseased infants, the mentally deficient and stunted school children, the weedy youth, who is fit for neither army, navy, nor workshop, the hoydenish, loud voiced girl with her abnormal craving for excitement and for drink. Let her look at our crowded prisons, lunatic asylums, and refuges of all sorts ; let her think of the money, the work, and the gladness that is wasted ; and beyond all let her think of those unhappy women who are to her unmentionable, and of whom the very thought seems to her to defile. Let every educated and happy woman see whether it is not her work, her personal work, and her bounden duty, to join herself to the band of those who feel it is their life mission to seek and to save those who are lost. It is only thus, by a determined and united effort on the part of those who are safe themselves, that we can hope to save our sisters, and through them our society, our nation, and our race.

VII

ALCOHOL AND CRIME ¹

BY

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IN the study of criminality from the bio-social standpoint, it is customary to classify crime into three main categories according to the nature of the characteristic impulse in each variety, that is to say, into crimes of violence, of lust, and of acquisitiveness. This method will be adopted in the present chapter, in which we shall consider successively the relation of alcoholism to each of these forms of more serious delinquency, using as the material for our argument facts of direct observation, supplemented and controlled by the evidence of official statistics. An examination on similar lines will also be made of the quasi-criminal phenomena of suicide and prostitution. The obvious difficulty of treating so vast a subject within the narrow limits of a single chapter will, it may be hoped, be

¹ Dr. Sullivan's contribution to the 1907 edition of this volume appeared under the title of "The Criminology of Alcoholism". The present chapter is in great measure a new presentation of the Relation of Alcohol to Crime.—EDITOR.

regarded as sufficient excuse for the somewhat dogmatic form in which many of the conclusions arrived at have necessarily to be expressed.

INDUSTRIAL AND CONVIVIAL DRINKING

Before we enter on the examination of the clinical and statistical evidence which we propose to utilize, it is necessary to direct the reader's attention to certain considerations regarding the social causes of intemperance, which, important as they are in the study of every aspect of the drink problem, are absolutely indispensable to the clear understanding of the relation of alcoholism to crime. These considerations have to do especially with the distinction, pointed out by the writer some years ago,¹ between the two opposed types of drinking which give rise to alcoholic excess, and which, having regard to the main factor in each type, we may most conveniently term industrial drinking and convivial drinking.

In the first or industrial mode of drinking, where alcohol is taken for the sake of its effect in causing a temporary diminution of the feeling of fatigue, it is necessary that the dose should be moderate, so that this action may be obtained in maximum degree and may not be neutralized by the disturbing influence of the drug on other functions; and it is further necessary that the dose should be repeated within a short time, so as to keep up the unæsthetic effect and prevent the onset of depression. In industrial drinking, therefore, the alcoholic action is constant, and is for that reason peculiarly apt to induce the tissue changes of chronic intoxication; but it is not intense, and hence is not primarily a cause of drunkenness.

¹ Sullivan, W. C. : "Social Causes of Alcoholism," in "Journal of Mental Science," 1904.

In convivial drinking, on the other hand, where alcohol is taken as an emotional exhilarant, there is no such reason for moderation of dose, and hence, in individuals of low culture, this form of drinking is very likely to lead to gross drunkenness. But, as the opportunities for its indulgence are ordinarily intermittent, such drinking is usually not continuous and does not tend to cause chronic intoxication. As may readily be supposed the industrial drinker is very apt to indulge also in convivial excess when he gets the chance; but the converse is not true—convivial drinkers may, and in a great many occupations must, abstain altogether from the use of alcohol as an aid in their work. This condition is typically realized in the mining industry, and is the explanation of the seemingly paradoxical fact, to which we shall refer later, that in the mining districts we have the maximum of drunkenness combined with a minimum of chronic alcoholism. We have to bear these points in mind in interpreting the statistics by which it is sought to measure the amount and distribution of intemperance; in such statistics we have to recognize the existence of two sorts of drunkenness—the drunkenness that occurs without chronic alcoholism and indicates primary convivial excess, and the drunkenness that occurs with chronic alcoholism and indicates the convivial excess which is a secondary result of industrial drinking.

THE IMPULSES OF THE ALCOHOLIC

The distinction between these two modes of excess is of special importance from our present point of view because of the marked difference between simple drunkenness and chronic intoxication in their influence on disorders of conduct. Drunkenness in a healthy individual, i.e. in an individual of average nervous organisation and free from

the morbid changes of chronic poisoning, gives rise to impulses of acquisitiveness and lust, but only in rare instances or under exceptional circumstances does it directly generate impulses of violence. In chronic alcoholism, on the other hand, homicidal and suicidal impulses are extremely frequent, and represent in fact the natural reaction of the diseased state on the emotional life. The suicidal impulse in particular is characteristic of the chronic intoxication, so much so indeed that in this country the frequency of abortive attempts to commit suicide, which are due in a very large majority of cases to this cause, may be taken as a rough but fairly reliable index of the incidence of chronic alcoholism. Impulses of acquisitiveness also occur in this condition, and impulses of lust; but these latter, as we shall see later, are very frequently of a different type from the sexual impulses of simple drunkenness.

The crimes connected with chronic alcoholism may sometimes occur, especially in the later stages of the disease, without any immediately antecedent excess; but much more often they are committed in a state of actual drunkenness. This drunkenness, however, which supervenes on the chronic intoxication, differs very materially from ordinary drunkenness, not only, as was pointed out above, in the nature of its dominant impulses, but also in the character of the nervous disorder which it involves. In ordinary drunkenness, where all the levels of the central nervous system are affected in regular and fairly rapid succession, there is necessarily very little chance of the performance of acts of a complex kind, and therefore the range of criminal conduct in this condition is comparatively restricted. On the other hand, in the drunkenness of the chronic alcoholic, which is the most frequent

and important form of what has been termed pathological drunkenness, the higher brain centres are affected more readily and more profoundly than the rest of the nervous system, with the result that the drinker, despite the derangement of his consciousness, is capable of apparently deliberate and purposeful acts. It is in this dream-state, which may last a considerable time, that the morbid impulses of the alcoholic are most often carried into effect.

ALCOHOL AND CRIMES OF VIOLENCE

It is in the category of crimes of violence that the influence of alcohol and alcoholism is most potent. Of course, owing to the ordinarily complex character of homicidal offences and to the varying extent in which other factors are associated with the organic factor of intoxication, this influence is operative in very different degrees in different cases. In some instances it is so far the predominant element that we may attribute the crime solely to the intoxication; this is so, for example, when a habitual drunkard commits murder in the alcoholic dream-state or in conformity with the delusions of chronic alcoholic insanity. In other cases, on the contrary, its influence may go no further than to effect a slight lowering of the power of self-control, as when the tipsy disputant enforces his argument with a blow. Under ordinary circumstances, as was pointed out above, casual drunkenness acting in this latter way does not, as a rule, lead to grave acts of violence; but in exceptional conditions of excitement, and particularly when the excitement affects a large number of persons collectively, it may give rise to extremely destructive and murderous conduct. This has been noted, for instance, in times of strikes and labour unrest; and a recent illustration of the same action on a large scale may be

seen in the atrocities of the German troops in Belgium. Normally, however, the alcoholism which causes homicidal crime is the chronic intoxication. This fact is brought out very clearly when we compare crimes of violence, drunkenness, and chronic alcoholism with reference to their regional incidence, as is done in the accompanying table borrowed from my work on "Alcoholism".

Comparative Mortality Figures.				Annual Average per 100,000 Inhabitants (1891-1900).		
Alcoholism.	A. and Liver Diseases.	Occup. Groups.	Areas.	Homicides and Assaults.	Drunkenness.	Attempted Suicide.
4	21	Agriculturists .	Agricultural counties. .	116·33	226·3	3·46
4	21	Miners . . .	Mining districts . .	237·34	1091·2	2·43
{ 7	30	Textile workers	Manufacturing			
{ 11	40	Metal workers .	towns .	265·73	479·8	6·42
52	78	Dockers . . .	Seaports .	409·73	990·6	10·56

It will be seen from this table that the distribution of homicidal crime corresponds fairly well with that of chronic alcoholism, taking as a measure of the latter condition the rate of attempted suicide and the alcoholic mortality in the occupational groups representative of the several composite areas. On the other hand, there is no such correspondence as regards regional incidence between homicidal crime and drunkenness. The mining districts show this most clearly; in these districts, where convivial drunkenness is enormously prevalent but where industrial drinking, and consequently chronic alcoholism, is as rare

as in the agricultural counties, the rate of homicidal crime is lower than in the manufacturing towns and far lower than in the seaports, though the mining districts rank considerably above both in the scale of drunkenness. Drunkenness, of course, has some effect in this direction, as is shown by the higher rate of crimes of violence in the mining districts as compared with the agricultural counties. But it is obviously of relatively small significance beside the influence of the chronic intoxication.

Direct observation of alcoholic criminals confirms fully this interpretation of the statistical data. Thus in a personal investigation regarding this point in the English prisons I have found that about 60 per cent of graver homicidal offences, and about 82 per cent of minor crimes of violence were mainly attributable to the influence of alcoholism. In the graver cases this influence was almost always due to chronic intoxication, except in some instances where an initial abnormality of nervous organisation had created a special susceptibility to the action of alcohol. In the less serious cases, on the other hand, as many as 15 per cent of the criminals acted under the influence of merely casual drunkenness. The difference between the two series of cases is presumably to be accounted for by the co-operation of non-alcoholic causes in some proportion of the more trivial offences, whereas the graver crimes were ordinarily the expression of a primary destructive impulse, associated in a good many instances with the allied impulse to suicide.

ALCOHOL AND CRIMES OF LUST

From the point of view of alcoholic causation it is necessary to divide this group of offences into two classes, according to whether the objects of the sexual violence are

adults or children. In both classes alcoholism is a factor of considerable importance, but there is a remarkable difference in the nature of its influence in the two cases. Sexual offences committed on the adult are very often due to casual intoxication; they are indeed the only form of serious delinquency that can be in any large degree set down to the account of simple drunkenness. Violation of children, on the other hand, when due to intemperance, is more often connected with chronic alcoholism, and the perverted appetite of which it is the expression is in fact a relatively frequent trait of the moral and physical enfeeblement of the advanced intoxication. In a very large number of instances the drunkard's own children are the objects of his lust.

With regard to the relative importance of alcoholism as a cause of sexual crime in this country, our information is rather scanty. Judging from personal experience I should be disposed to attribute to its influence something less than half the crimes committed against children, and rather more than half the cases of rape on adults. It is difficult to test the question by appealing to the criminal statistics, because offences of this kind are, more than any other, influenced by local conditions: where these conditions supply a legal outlet to the sexual impulse, as for instance in large towns, then the effect of alcoholism in stimulating that impulse will not lead to an appreciable increase of sexual crime; while on the other hand, in rural districts any extension of drunkenness is very likely to bring in its train a corresponding increase of this class of offences. Lombroso¹ has shown this relation very clearly in the case of Italy; and it is traceable in this country, though

¹ Lombroso: "Il vino ed il delitto". "Archivio di psichiatria, Vol. I., p. 192. 1880.

somewhat indistinctly, in the general tendency of sexual crime to rise and fall with the state of trade and employment.

Even in regard of regional incidence also, despite the qualifying considerations referred to above, some evidence of alcoholic influence may be made out. Thus, if we take the same composite areas which we used in speaking of homicide, we find that they show the following ratios of sexual offences per 100,000 inhabitants: Agricultural districts, 4.96; mining districts, 5.56; manufacturing towns, 2.95; and seaports, 4.50. These figures may be reasonably interpreted to mean that outside the agricultural counties, where the thinness of population is the dominant factor, the incidence of sexual crime corresponds pretty well with that of drunkenness. On the other hand, if we consider only the offences against children (offences against the Criminal Law Amendment Act) we get a different result: Agricultural counties, 1.33; mining districts, 1.08; manufacturing towns, .89; and seaports, 1.48. Here we note that the violation of children, which we have connected rather with chronic alcoholism, does in fact attain its greatest frequency in the seaports where alcoholism is most rife, and is very much less common in the mining districts where other forms of sexual crime are most prevalent. Without attributing too much value to these figures, we may at all events claim that they show that such statistical evidence as we have agrees with our estimate of the importance of alcoholism in this category of crime.

ALCOHOL AND CRIMES OF ACQUISITIVENESS

In contrast with the two great divisions of serious delinquency discussed above, in which the connexion be-

tween the criminal act and its informing impulse is generally close and obvious, the offences that we have now to deal with are, for the most part, of a much more deliberate and complex character, and are influenced in a different manner and in a more extensive degree by many social and economic forces.

In the causation of these less impulsive forms of crime, we may naturally anticipate that the part of alcoholism will be relatively small; and in point of fact its contribution to the total volume of such offences is practically insignificant, and is moreover confined almost entirely to their most trivial varieties: thus it may occasionally lead to petty larceny, or even, though more rarely to minor malversations and breaches of trust, but in the skilled crimes of this category it is so far from being a causal element that it is positively incompatible with their successful pursuit. This independence of alcoholic influence is abundantly evident in the statistics of crimes of acquisitiveness: their seasonal incidence differs widely from that of crimes of impulse, and in their regional distribution and in their periodic variations they show no correspondence with alcoholism. Despite its purely negative import, this conclusion is worth recording here because it gives a very necessary warning of the futility of those estimates of the relation of alcoholism to crime which refer to criminality taken in its integrity.

ALCOHOL AND SUICIDE

Chronic alcoholism, as was pointed out above, is the predominant cause of suicidal attempts. It is natural to expect, therefore, that it will also have a considerable, though, doubtless, much less important part in the causation of actual suicide, and this, as I have endeavoured to

show in detail elsewhere,¹ is, in fact, the case. Its influence is clearly apparent in the general correspondence between alcoholic mortality and the suicide rate in the different occupational groups. Amongst publicans, for instance, where alcoholism attains its maximum prevalence, the suicide rate is more than double that amongst occupied males in general; and, on the other hand, in the large occupational groups which are comparatively free from industrial drinking and where the alcoholic mortality is correspondingly low, the suicide rate is considerably below this standard; thus in coal-miners and agriculturists the comparative mortality figures for suicide are respectively 9 and 10, as against 14 in occupied males as a class. If we regard the excess of this latter figure over the rate in the typically non-alcoholic industries as a rough measure of the share that alcoholism has in the suicide of the occupied male population between the ages of fifteen and sixty-five, we should arrive at an estimate of from 28 to 35 per cent. The proportion for the entire population of all ages and sexes would, of course, be much lower, since alcoholic influence is of less significance in women and at ages outside the limits specified; it is probable, however, that it amounts to at least 20 per cent. If this estimate is approximately correct, local differences in the prevalence of alcoholism ought to make themselves felt in the suicide rate, at all events to this extent that where alcoholism rules high the suicide rate cannot be low. The converse, of course, need not hold, and where alcoholism is relatively rare, suicide may be frequent or infrequent, according to the varying activity of the other

¹ Sullivan, W. C. : "Relation of Alcoholism to Suicide in England," "Journal of Mental Science," 1900; see also "Alcoholism: A Chapter in Social Pathology," Chap. VIII. London, 1906.

forces that enter into its causation. This is, in fact, what we find. Thus, taking the figures for the quinquennial period 1905-9—the latest available—we observe that in the more alcoholic counties, those which contain large centres of industrial drinking, there is always a fairly high suicide rate; in the West Riding of York, for instance, and in Warwick, the two counties which stand highest in the list of attempted suicide (12·7 per 100,000 of population in the former and 12·5 in the latter) the rates of actual suicide are also high, viz. 10·5 and 9·8; but, on the other hand, non-alcoholic counties may show a very high suicide rate, as do Suffolk (13·3) and Cambridge (11·3), or a very low rate, as is the case with Cornwall (7·8), and with the very drunken but non-alcoholic county of Durham (8·4).

Lastly, it may be remarked, that in a statistical view the suicide of alcoholism differs from ordinary suicide in several important characters, notably in that it tends to earlier age incidence, that it shows a predominance of the cruder and more impulsive methods of realization, and that it is not influenced by forms of religious belief—a factor of considerable moment in non-alcoholic suicide. The tendency to earlier age incidence and the greater frequency of impulsive methods are features which are shared by suicide in the alcoholic groups and by the general run of cases of attempted suicide—a fact which affords further confirmation of the predominantly alcoholic origin of the latter phenomenon.

ALCOHOLISM AND PROSTITUTION

While the frequent association of intemperance and prostitution is a fact of general knowledge, it is extremely difficult to ascertain to what extent, in the relation of the two phenomena, alcoholism is to be regarded as a cause and to what extent as an effect. It is not a question on

which statistical data would be likely to give much assistance, even if such data were available—and in this country at all events statistics of prostitution are practically non-existent—for the factors of the problem are too complex and intricate to be dealt with by ordinary methods of analysis. We must be content, therefore, to indicate the main facts which present themselves to the direct observation of the social worker, without attempting, on the basis of this necessarily limited and partial survey, to formulate any general proposition regarding the relative importance of the several forces that come into play.

Considering in the first place the influence of alcoholism as a cause of prostitution, we have to note that casual drunkenness, or conditions of alcoholic action falling short of definite drunkenness but involving a lowered power of control, may lead to the occurrence of seduction. This is an explanation which, since it can be regarded also as in some measure an excuse, is likely to be put forward more frequently than strict accuracy would justify; but that it has, nevertheless, a real and wide application is sufficiently shown by the fact that variations in the local and general conditions which give rise to drunkenness are found to affect the illegitimate birth-rate in the same way in which they react on the incidence of sexual crime. Another mode in which alcohol may be causally connected with prostitution is through the influence of occupation; women engaged in trades where industrial drinking is rife frequently drift into prostitution, partly through the degradation induced by their alcoholic habits, and partly as a consequence of the same unfavourable economic conditions that have led to their alcoholism. Instances of this evolution are common amongst barmaids, bookfolders, and amongst the women who work in the nail and chain-making industry in the Midlands.

Turning now to the consideration of alcoholism as a result of prostitution, we may summarize the facts by saying that it is practically the rule for prostitutes, at all events those of the economically lowest class, to become addicted, sooner or later, to alcoholic excess.¹ As many of these women are feeble-minded and are morbidly susceptible to the action of alcohol, their drunkenness is commonly of a very obtrusive and turbulent sort and brings them into frequent conflict with the police. Cases of this kind form the large majority of the so-called "inebriates," dealt with under the Act of 1898, and this accidental circumstance has been largely responsible for the fallacious doctrine of an "inebriate diathesis" as the essential cause of the alcoholic habit.

GENERAL CONCLUSIONS

To close this brief survey of the relation of alcoholism to crime, it remains to sum up the chief results to which it has led us. Considering the several categories of serious delinquency, we have found that alcoholic intoxication is answerable for about 60 per cent of indictable crimes of violence, and for a rather higher proportion of minor offences of the same class: that it is probably the cause of nearly half the crimes of lust; and that, on the other hand, it makes no appreciable contribution to crimes of acquisitiveness. And we have further seen that, while in one form of sexual crime—rape on adults—the alcoholic condition which leads to the act may be no more than simple drunkenness, all the other varieties of delinquency due to alcoholism depend almost entirely on the chronic intoxication.

¹ See Dr. Helen Wilson's article in "Human Derelicts," edited by Dr. T. N. Kelynack. London, 1914.

VIII

ALCOHOLISM AND POVERTY¹

BY

THE REV. J. C. PRINGLE

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THE heading of this chapter really covers the subject-matter of a considerable portion of the whole volume. It is therefore necessary to devote the allotted space to a specific contribution towards the elucidation of the problem these two words suggest. I am asked, as Secretary of the London Charity Organisation Society, to attempt this, and the work and method of the Society determine at once what that contribution should be. The aid of the Society is generally sought when the troubles of an individual or family are complicated, and it has adhered for many years to the principle that adequate and suitable help can only be given when the circumstances under which the trouble arose are carefully ascertained; and that help should then be given in such a way that not only is the immediate trouble got over, but the resources of all kinds strengthened for meeting further trouble. This particular

¹ This chapter, kindly provided by the Rev. J. C. Pringle, takes the place of the chapter on "Alcoholism and Pauperism" contributed to the 1907 edition of this work by Dr. Ralph H. Crowley.—EDITOR.

kind of experience is useful for disentangling the connexion between alcoholism and poverty.

It is possible that this disentanglement is of special importance at the present stage of this age-long investigation. The well-known calculations of Messrs. Rowntree and Sherwell, amply supplemented since, have established upon a very broad and sure basis the probable arithmetical connexion between the expenditure of our people upon alcohol and their unsatisfied needs in other directions. This calculation was pressed home with staggering effect by the census of production which, revealing the small amount of wealth produced, demonstrated the necessity of squandering as little of it as might be.

IMPOVERISHMENT DEPENDENT ON ALCOHOLISM

Medical and psychological research have enormously extended our conception of the impoverishment we suffer through alcoholism by way of lowered tone and stamina, moral and physical. This mass treatment of the question has given rise to mechanical explanations of a pessimistic character, such as that of Dr. W. C. Sullivan,¹ who held that alcoholism was a direct result of present-day methods of manufacture. The statistical treatment of a subject is bound to produce such a result, because if individuals are grouped in large enough numbers we seem to be in the presence of a necessity so powerful as to render the resistance of any given one of the individuals futile. Familiarity with the phenomenon of alcoholism on the rice and millet fields of Sindh and in the mountain glens of Japan leaves the present writer cold before an assertion that it is solely because he works in a British shipbuilding yard or cotton

¹ Sullivan, W. C. : "Alcoholism : A Chapter in Social Pathology". London, 1906.

mill that a given Englishman is an alcoholic. On the contrary the experience of the oldest workers in the C.O.S. has included such an immense variety of family and individual circumstances; they have seen similar circumstances met in such an immense variety of ways, that they are left with the conviction that there is always scope for choice, and that when men or women indulge to excess in alcohol, and in consequence lose health or employment or both, and neglect home and children, it is because they choose to do so. Necessitarians will retort that this only drives us one step back and does not help us. That may be metaphysics, but the social worker of long standing is apt to designate it by another name.

POVERTY AND THE ALCOHOLIZED INDIVIDUAL

It is as urgent as it is difficult to disentangle the individual aspect of the alcohol problem. The reproof of the vice is known to be at least as old as the art of writing, and the most ancient exhortations are by no means the least eloquent; but it is doubtful if the ill consequences have ever been explained to the whole mass of a people to the extent they have been in England and America during the last thirty years. Twelve years ago two Band of Hope children declaimed for the benefit of the writer a perfect harangue upon the fearful consequences of drink. They had neither read nor been taught it, but both were word perfect in the argument against the use of this beverage. It might fairly have been hoped that, building upon such a foundation, the appeal of the war, backed by the example of France and Russia, would have produced a wave of abstinence and even an acceptance of prohibition. Yet the latter proposal was hurled back in the teeth of the most popular of ministers, and the wave has failed to materialize

despite the King's example. It is impossible to escape the belief that a very powerful counter appeal is at work.

Poverty in every sense in which the word can be used is produced on a terrible scale by alcoholism. The most recent presentations of the fact¹ are as convincing and dumbfounding as were those of fifty and, for the matter of that, 500 and 5000 years ago. But the same distressing phenomena, blasted homes, neglected children, discomfort and discontent, are required for the all-powerful "Labour" movement. A creed held with modifications can never stir millions. To admit that even a few of the tears which the Labour movement undertakes to wipe away are shed in consequence of drink would undoubtedly weaken greatly the propaganda. To promise less than the millennium has never succeeded, and a teetotal paradise attracts but few. The lad fresh from the Band of Hope has it thundered at him (by a curious paradox) that the temperance movement is an attempt to chloroform him! and the right to drink takes its place among the others on the sacred programme. Equally troublesome to this propaganda is the doctrine of individual responsibility and power of choice. It is only environment that we can ever hope to change by political action, and therefore environment must bear the blame for all that is amiss in the lives of the people. Alcoholism has got to be a mere

¹ See Mr. Johnson Baker's "Economics of the Drink Problem". London: Church of England Temperance Society, 1911, or "The Alcohol Factor in Social Conditions". London: National Temperance League, 1914. The Royal Commission on the Poor Laws, 1906-9, may be fairly said to have been interested predominantly (1) in organisation and administration, (2) in economic and industrial conditions, but so successfully did alcoholism thrust itself willy-nilly into their investigations that we find no less than 151 persons cited in the general index under the heading "Pauperism, Causes of—Alcoholism".

symptom and by-product of causes which politicians can remove.

It is not proposed here to beg any of these great questions, but merely to suggest a possible explanation of the failure of a people, so nearly convinced of its necessity, to carry out a reform in their habit of life. The only escape from these disastrous mass arguments is to be found in an honest and diligent analysis of individual examples, and that is what this chapter proposes to present. I have before me twenty-five reports from C.O.S. workers in London, most of them elaborate, all dealing with individual examples taken from current (1915) work, many of them well worth submitting in their entirety. The C.O.S. worker is all the time confronted by specific needs and all the time endeavouring to solve the riddles, why these needs have not been satisfied in the past, and why they need go unsatisfied in the future. Alcoholism crops up with a certain definite frequency as the sufficient cause of the failure now and subsequently. This is quite apart from the *general* habit of the people to spend an extravagant proportion of their incomes upon this commodity, or from the consequent *general* lowering of character, efficiency, ambition, and love of home which affects almost every family we try to help. Generally the worker has examined every new case over a period of a month and picked out those in which drink could be disentangled as the efficient cause of the trouble. This method is highly recommended by John Stuart Mill as the "Method of Difference". Its value lies in the presence to the mind of the investigator of other examples where this cause is not prominently operative, and thus serves as a constant check and reminder that the cause in question, drink, may not be the efficient cause in this case either. That philo-

sopher is less respectful to what is a far commoner method of inquiry into this and other phenomena, to wit, the enumeration of a great number of cases where the effect and the supposed cause are found together. These produce a cumulative but not necessarily sound conviction that the supposed cause is the real cause, and are dismissed with scant consideration by people who have a motive for doing so. The reader will bear in mind, therefore, that in every case referred to here alternative possible causes of poverty have been duly weighed. That full justice has been done to them is evident from the fact that out of fifty-nine and seventy-two cases respectively in two of the very roughest districts in London our workers have both picked only seven as due to drink: in a district less rough but with an unenviable reputation of its own, ten out of sixty-four. The writers of these reports themselves raise the question whether the discomforts of poverty may not first have led to drink, the drink afterwards perpetuating the poverty. They recognize this as an ever-present possibility, but cite cases where the reverse seems to be established. In some cases the person in poverty, while admitting the drink habit, attributes it to a particular sorrow: an ex-school teacher, for example, now an inebriate, filthy, an "in-and-out" of the workhouse, claims to have begun drinking through sorrow caused by a love affair and the death of her mother and brother. Workers of twenty years' standing express scepticism about the frequency of the drink habit being caused by the discomfort and strain of poverty. The devil-may-care hand to mouth drinker does not come into these examples at all because no one refers such people to the C.O.S.

CLINICAL CASES

The sketches from life cited here are as drab as they can be. They are neither novel nor romantic, and might be found in Juvenal or Aristophanes as well as here. Their only importance lies in their actually belonging to A.D. 1915. They show how the various phenomena we collect under the term poverty may be brought about by drink at the present day.

We find the sustained efforts of a hospital to restore a man to efficiency by treatment checkmated by drink, and another man drunk and collecting money upon a letter from a hospital, a year old, offering on certain conditions to supply an artificial leg. We find a woman who dare not go into a hospital for treatment because it means leaving home and children to a drunken husband, finally removed to the Poor Law infirmary to find all she feared and worse has happened. We find a woman ill and lacking the necessaries for recovery while her children are sent out to fetch, not these, but liquor for the husband. We find three cases of men discharged unfit from the new armies through the effects of alcoholism, and another who, while neglecting his home for the sake of liquor, refuses to enlist though obviously qualified because it is "against his principles". Again we find two civilians with health broken down by alcoholism.

Irregular and ill-paid employment is, of course, a cause of poverty, but here we find a man with a good regular job stealing at his work to get extra money for liquor; a man with irregular work heretofore now earning high wages but drinking them away instead of trying to pull up his home. We find a gasworker with shares in the gas works selling them for drink and letting his home go to ruin, but

pulled up and steadied by enlistment ; another gasworker in the same job for twenty-two years and the same house fourteen but devoting to drink what might have made children healthy and happy ; the wife of another gasworker, in the same job ten years, clean and tidy herself but always at her wits' end to get what her children need through the drain upon the income of his drinking. We find an ex-sergeant capable of skilled work and high wages content to earn a precarious living with his wife, making paper flowers and selling them in the street, because his drinking habits make regular work irksome to him ; he is called up for the war as an instructor but discharged for the same cause. We find a man in general trouble ever since 1910 when he received £30 compensation for an accident and took to drink ; before that he had been known from 1905 as a steady, successful man. Perhaps as a parallel to this last, the writer may be allowed to go back to a case known to himself at the time when the newspapers were pushing their sale by " buried treasure ". A man with a flourishing hardware shop found one, and before he had finished drinking the proceeds he had reduced himself and wife and children to beggary.

Three carpenters appear in the list. One of them known to the society since 1896 has had no children, and through his drink habits has never known the comfort the good wages of that attractive trade can bring. Another earns from 30s. to 50s., besides 18s. contributed by earning children, and yet the home is squalid and the other children neglected. The third deserted his wife and five children, while she, well rid of him, has managed to pull through in comparative comfort. We find a man on highly paid government work for which he has already received part payment with his tools in pawn and his rent in arrears ;

and another man with good wages but children half starved, in prison for ill-treating his wife though she will never admit anything against him. Again we find children neglected and home squalid though the combined earnings of the grown-up members of the family make a handsome income, and a son in the navy sends a good allotment. We find a man the curse of his home deserting it; in his absence his wife gets it on to a prosperous and comfortable footing, but he comes back and plunges it again into misery. We find a milliner earning £2 12s. a week with her machine and furniture in pawn—for gin. We find a man with a constant job under a Borough Council (one of the desirable securities in an inconstant world!) with his wife in a Poor Law infirmary, one daughter in a reformatory, another in a Poor Law home, and a boy reported to have run away from another reformatory, though in addition to the father's wages two grown sons contribute to the home (one a soldier).

An employer of labour in the docks on a recent Saturday paid sixty men wages averaging over £5 for the week's work. On the Monday fifty of them asked for a "sub" out of the ensuing week's wages to carry them through the day. From one of our workers comes a case of a docker whose wife is also at work but the home squalid and wretched, and a girl of twelve sent to the cleansing station, owing to drink. We find a steady man trying to maintain a decent home but obliged to leave it from time to time when his wife thinks fit to convene her boon companions for a carouse. A man with a constant job steals money entrusted to him and takes up with a woman of similar habits whose husband is in the workhouse. His health gives way and the doctor despairs of him unless he will leave liquor. Meantime the Poor Law infirmary

keeps him while waiting for the National Health Insurance Commissioners to do so. The woman is a skilled hand, but drink loses her her jobs as death relieves her of her children. A valet with an excellent character loses his master, killed in France, and drowns his sorrow. He is now in an asylum, his insanity attributed to chronic alcoholism brought to a climax by a shock. A grown-up son dare not entrust his widowed mother with money, and she attributes her inebriety to sorrow caused by her husband's death, and spends her time seeking charitable aid. A man spends his old age pension in common lodging houses cut off from his relatives by his drinking habits, while another respectable old man is similarly isolated and wretched because his drunken wife has alienated his prosperous children. Another old man has gone into the workhouse to escape his drunken wife who is left to her old age pension, as the children have one by one reluctantly withdrawn their support. A respectable woman of sixty-four is past work and has lost touch with her brothers and sisters owing to the habits of her drunken old mother whom she cherished to the age of 103. The society has known the woman since 1877, and is satisfied that she was kept in poverty and isolation by the mother's vice. A worker has made a study of a street of seventy-five houses for us. In five there is poverty due to drink. In four the children constantly require free dinners and visits to the cleansing station. In two the boys have been convicted of stealing. In the fifth there are no children, but both man and woman are in and out of prison. Another worker has reported on a block of one hundred and eighty dwellings she is familiar with. She can speak with certainty of eighty-five of them. Thirty are free from drink trouble. Thirty lack comfort through preference for alcohol; and twenty-five display the

more painful phenomena of "poverty" due to drink, neglected children, visits from N.S.P.C.C. inspectors and sanitary inspectors, constant applications for free dinners, while they enliven the block by fights on the balconies after drinking bouts. She recalls but few cases where girls other than daughters of drinking parents have lost their character and none of married women doing so apart from drink. Another worker has made a study of four consecutive houses in a notorious slum. One contains the wife of a man on good wages. When drunk she challenges a neighbour to a fight and they roll together in the street like wild beasts; the next, a young widow with four children, home and children spotless, herself absolutely steady; then a drunken man with a sick wife; and in the fourth a woman with some history of hereditary drink, who responds to efforts to help her but has relapses into inebriety. This little study is of value as throwing light upon a cause of drunkenness to which our reporters, like Solomon, attach great importance—dissolute companions.

These records contain numerous examples where an increased income due to separation allowances has not led to better homes and better cared-for children, but *the reverse*, while the same windfall in sober houses has produced these desirable results. Several of our workers make us special reports on what may be called war drinking.¹ These I will endeavour to summarize. When war broke out there was a great increase of drinking among the women. This slackened off for a while but increased at the time of the second raiding of provision shops and has been maintained. They now keep up a state of lawless

¹ This was written in July, 1915. The regulations brought into force since that date have altered the situation sketched here.

excitement which is imparted to the children and noticed in the schools. Women previously sober admit that they have not the courage to keep out of these drinking parties. Up to 11.30 the women may not go to the public-houses, and men are paid $\frac{1}{2}$ d. to fetch the drink; 11.30 adjourn to a public-house; about 1.0 move out and sit in a row on the kerb still drinking. To go home and get dinner for the children is out of the question. These are given 1d. and sent to get fried fish and potatoes for themselves. In the evening this carnival is continued till late hours, either at houses to which liquor is fetched, or, *sub rosa*, at the public-houses themselves. Petitions have been sent up asking for further restriction of the sale of liquor to women, especially on Mondays and Tuesdays. The picture palaces and parochial savings banks and clubs are alike neglected this year for the drink shops. In one street lately, there were four convictions for drunkenness, and in the same street a woman with a sick baby went over to the public-house with it in her arms. While she was there it died but she stayed on drinking and holding the dead baby.

The soldiers' wives with allowances to spend, no need to go to work, and no man to control them are said to be the leaders in this sinister fashion, but it has spread largely to their neighbours. Even cantankerous and brawling women are condoned if they will join in the drinking. A young woman without children, wife of a soldier, and hitherto of quite an elegant type, is rapidly becoming an inebriate, staying away equally from work and from the war club to which she has cordial invitations. Following the prevailing fashion quite young girls, coming out of a sweetmeat factory, are seen to go straight into public-houses in gangs. Finally, children stand in the doorways

of the public-houses and their mothers bring them out drink (this I also observed for myself at the end of this road a few nights ago).

It has seemed worth while to dwell upon this war drinking phenomenon as it may have an aftermath of much poverty in years to come.

IX

ALCOHOL AND NATIONAL EFFICIENCY¹

BY

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THE EFFICIENCY OF A NATION

TO-DAY, when the promotion of physical and mental efficiency among the nations is imperative; when civilization is fighting for its life; and when liberty, social justice, and human brotherhood are in the balance against material force, cruelty, and barbarism, it is of supreme importance that the fitness of our manhood should be maintained at the highest pitch. No question is so closely connected with this quality of being fit and effective as the use and abuse of alcohol among the people. The success of a nation, whether in peace or in war, depends in part upon high ideals, but also greatly upon the physical state

¹ Dr. Armstrong-Jones contributed Chapter XIII to the 1907 edition of this work. The chapter bore the title "Alcohol and National Deterioration". The present chapter is an entirely new one, and deals with the subject in the light of the needs of to-day.—EDITOR.

of its individual members, and this is a matter of the utmost concern to us as a people. As the bed-rock of our progress lies with our industrial community, it must follow that this section of the nation, if it is to be efficient, must be strong, vigorous, and healthy, both in mind and body.

ALCOHOL AND ITS INFLUENCE ON PHYSICAL HEALTH

That there is a close connexion between alcohol and impaired physical health is an accepted and irrefragable fact. The evidence of social students, of religious teachers, of workers in connexion with benefit societies, and of experts directing life-insurance companies is as convincing upon this point as are the findings of Royal Commissions and Departmental Committees. Drink and drunkenness are causal factors in the production of miserable homes, impaired physical development and arrested growth in the young; as well as of most of the poverty, degradation, crime, and lunacy which exist in our midst. It is difficult to realize the widespread range of the custom of drinking. The habit certainly is not generally established until after the period of puberty, and its initiation is often due to the example of older men and women, who for social reasons capture adolescents and young adults. The craving for new sensations and for the enjoyment of strong feeling in the young is probably responsible for the first indulgence, but its effect is like that of all excitants, viz. first to stimulate and then to paralyse, but whether the paralysis of the higher and controlling portions of the brain, or the direct stimulus of the lower ones be more marked, is uncertain, we know that the shackles of a less highly evolved plane of mind are set free and the veil is removed from the uncontrolled feelings.

The sense of greater vitality and of exhilaration result-

ing from the action of alcohol is a false elation—it is a strength which is not maintained, and a vigour which is not preserved, for a subsequent slackness and carelessness are as evident in individuals as in groups of people; also both sexes alike demonstrate the deteriorating effect of alcohol and the penalty is surely exacted, for there is soon apparent a physical indifference, a weakening of the moral nature, and a heedlessness of personal responsibility which are in marked contrast with the earlier stimulation. Although temperance advocates often view drunkenness as the greatest if not the only vice, it is certainly the short cut to almost all the others, and alcoholism is certainly the greatest bar to all industrial, social, and religious progress. Mr. Charles Booth states that although incompetence and ill-health are contributories of drink and drunkenness it is an actual *causa causans* of poverty, and a history of the habit may be obtained in almost every case that comes up for relief. Mr. John Burns stated publicly a while since that in over 100,000 persons who, during a period of twenty years applied for poor relief at Wandsworth, only twelve were abstainers.

ALCOHOL IN RELATION TO CRIME AND INSANITY

The late Lord Alverstone has stated that nine-tenths of crime that occurred was due to drink, and this is the comment of most of the judges on circuit. It is further known that one-fifth of all registered male insanity is caused through or associated with drink, and it is indirectly responsible for the most fatal form of mental disease. The drinking habit is a serious problem to the community, and those of us who are in official positions in lunacy know too well the usual story of drink, loss of employment, deterioration in health, destruction of the home, and lastly, the fatal

ravages of disease and insanity. The community is thus under an imperative obligation to control these drinking habits among its members. The Report of the Interdepartmental Committee stated that if the drink question could be solved, then three-fourths of the difficulty in regard to distress, poverty, and deterioration would disappear. It was further added that the "drinking habit" deadened all desire for improvement, and that it brought on a social condition out of which there was no emergence.

EXPERIMENTAL WORK ON ALCOHOL AND DETERIORATION

Many experiments have been made with alcohol upon living protoplasm, and competent observers and scientific workers have reported fully and extensively upon its effects. It is found that alcohol stops the germination of spores and grains, and when the proportion of alcohol present exceeds 20 per cent in the material undergoing fermentation further action is stopped; so that this quantity of alcohol becomes lethal to its own continued production and all further development is arrested by its presence to this amount. It is thus fatal to its own development! In regard to living cells alcohol is a dysosmotic, and when taken internally it passes with some difficulty through the living cellular membrane of the capillaries into the tissues. It also causes a reaction on the part of these cells which, in consequence, proliferate and multiply and the capillary walls become thicker, in this way closing the tubes and so depriving the special organ of its proper and necessary nutriment. Further it retards the normal excretion of waste and useless material in the body. It is the accumulation of this effete material which has given rise to the view that poisoning from alcohol is not a direct toxæmia, but an indirect one

through the production and the accumulation within the body of poisonous products or leucomaines. It is also known that alcohol is a strong dehydrating agent, and as a fixed amount of water is necessary to healthy protoplasm—more necessary even than oxygen, which cannot re-invigorate dry protoplasm—the action of alcohol upon protoplasm is thus doubly injurious. The experiments of Féré upon incubating eggs show the evil influence of alcohol upon the delicate living and motile growing cells of young animal and vegetable life. It paralyses the sensibility, irritability, and contractility of all living cells, and when sufficiently concentrated it stops the action of all ferments within or without the body.

How is it possible for a living machine subjected to the influence of alcohol to work effectively when the parts of that machine are all being acted upon injuriously? If indulged in to excess—and who is to draw the line on each side of moderation?—alcohol brings about marked degenerative changes in the nervous, muscular, and glandular tissues of the body. Its action is a structural one, and changes of structure must imply altered function. An increase of fibrous or of the base cicatricial tissue, occurs in the blood-vessels and in the various secreting glands, so that malnutrition is induced and a lowered resistance to disease is brought about which reduces vigour and diminishes vitality. Changes described as “fatty” occur in the body and in the vital organs, and these interfere with the “building-up” process. Such an accumulation of fat is in part due to a general storage of waste matter which should be excreted, but it is also in part due to an active degeneration as well as an infiltration which exists at the expense of the higher protoplasm, which facts can be proved by the increased

elimination of nitrogen. Fatty infiltration and fatty degeneration are in fact the two great characteristic features of acute alcoholic poisoning.

ALCOHOL AND MENTAL DETERIORATION

The mental effects of alcohol differ as to whether they are induced by one small dose, and therefore described as functional or physiological effects, by one large dose—as occurs in ordinary alcoholic poisoning or in drunkenness—or whether they are the result of long continued drinking, even when this is done in what is generally described as “moderation”. It is a well-known fact to all surgeons that if an ordinary person who has drunk moderately for a long time—especially if the drink be spirits of any kind—meets with a severe accident, or is overtaken with a serious illness; or a severe mental shock occurs, the mental symptoms of excessive alcoholism may suddenly supervene. The person so affected tends to the development of illusions which result in impulses, upon which delusions of a persecutory nature are engrafted, and the conduct reflects the feelings within. The lives of innocent victims have on many occasions been sacrificed to the suspicious and persecutory notions of the alcoholic. Alcoholic madness is often used as a generic term for any mental perversion of which alcohol is the prime cause, and it is often difficult when describing the effects of alcohol to separate those cases which are “mad,” and which should be sent to the asylum and there detained, from the others which are “bad” and which persistently drink for the pleasure it affords, and this in spite of admonition or punishment, and irrespective of the misery and degradation this entails upon their families or dependents. These “bad” cases must have their drink, even if it pauperises them and ruins

their wives and children, and the pleasure to them has become a customary want and must be gratified at any cost. Both these classes are found in prisons, reformatories, and lunatic asylums, and both are creatures of impulse and not amenable to advice, discipline, or control.

The effects of alcohol vary somewhat as to whether the dose is small or large, or taken in continuous drinking. The effects of a small dose of alcohol are too well known to need description. The expansive happiness, the confiding conversation, the flow of words, and the lack of dignity are described as physiological effects. Dr. William MacDougall has performed interesting experiments at Cambridge which fully describe the "physiological" effects of alcohol. The effect of one large dose, as in ordinary drunkenness, is also sufficiently common unfortunately, and needs no special description ; but the effect of drinking for long intervals lowers the physical as well as the mental vigour. Mentally, in these cases, the hierarchy of the organic functions is attacked, i.e. those functions which are in the front rank, such as the power of inhibition, or of self-restraint, the sense of self-direction and lastly that reserve which is characteristic of the self-respect of the higher man. In consequence these persons are impulsive, spasmodic, irritable, and impetuous. It is impulse and impetuosity that characterize their conduct.

The extension of the effects of alcohol to the motor area of the brain is seen in the shaky and trembling movements, the lips, the tongue, the hands, and the voice all show this, and the organ most usually helpful to the individual is the first to be affected. The skilled craftsman and the technical mechanic manifest this deterioration in motor power in the loss of that fine "touch" so necessary to their work,

the clear eye is lost and the steady hand fails. In the Claybury Asylum the occupation of many of those who become insane from the excessive use of alcohol was from among engineers, watchmakers, surgical instrument makers, and skilled mechanics generally; printers, pianists, clerks, and typists. The alcohol very often showed an affinity for the highest developed and latest acquired functions, any stress rendering that particular faculty more vulnerable and more liable to surrender its former serviceable use: so much depended upon this special susceptibility of the most useful faculty. The muscular tissues of those affected became deteriorated through fatty changes, and the destruction even extended to the pyramidal cells of the brain itself. Drink had ruined the fine processes of these cells, which became swollen and useless from degenerative changes, their outlines were altered and distorted and their nuclei displaced or extruded, signifying extensive structural degeneration with consequent loss of former finely developed functions.

Owing to the affection of the brain and other portions of the nervous system sensation became affected, and feelings of cramp, loss of sensation in the legs, arms, and hands were common. When the mind had become affected, those persons very often complained of visceral, generative, and other delusions, some of electricity being used upon them, and others machines placed within them and working to their detriment. These pathological changes are met with in many of those who deny heavy drinking, and who describe themselves as just "moderate drinkers!"

ALCOHOL AND GENERAL DETERIORATION

When the separate effects of alcohol upon the individual are marked, when mental and physical results of a definite

character are observed, the general effect is that of a combined category of mixed poisons. The chief of these poisons, amylic alcohol, is always present in crude whisky served in a raw state. Such a poison as absinthe mixed and served with raw spirit has been recognized by the Government of France as a particularly hurtful poison, exercising a powerfully noxious influence, and measures have been taken to control indulgence in this dangerous deteriorative agent. Other countries have also given special attention to the subject of crude spirits, but our own is hitherto more or less apathetic in regard to the matter. When we see that in one institution alone, viz. the Claybury Asylum, of the London County Council, over 15,000 persons have been received as insane, out of which total probably no less than 2200, i.e. 20 per cent of all the men, and 10 per cent of all the women, have become insane through alcoholic drinks, then the question of alcohol as a deteriorating influence in a community is no light matter. To realize that, by their own act, all these human beings had suffered the loss of civil, social, domestic, and financial liberty, and that each had to be supported at the expense of the prudent and the thrifty, such a question raises the use of alcohol to an important economic problem and one that needs to be faced boldly and at once. That alcohol in certain quantities is a poison to the whole animal series goes without saying. That it cripples the worker, destroys his self-reliance, and ruins his health is also indisputable; and that it shortens many valuable lives is also certain, yet this great nation remains practically unmoved. Are we at this crisis in our history fulfilling our duty to our country, to the rising generation, and to our gallant Allies? Is anything being done to stop this traffic in mental, moral, and physical destruction which is going

on blatantly and openly among us as a Christian people? Mr. George B. Wilson's annual statement in regard to the National Drink Bill for the year 1914-5 shows an increase in spirit consumption, although the total amount spent on drink is less than for the previous year, when a temporary decline occurred owing to the war, but this was again followed by a rapid increase, which was possibly related to "clearances" from bond. Beer and wine showed an early increased consumption followed by a decline which continued in both commodities, the cessation of social functions doubtless accounting for the latter. The war had created considerable economic variations in the drinking habits of the people, as would naturally be expected, towards sobriety, but this tendency has been greatly neutralized by other conditions. The consumption of whisky went up partly because the beer duty was increased, and drinkers turned their attention to whisky; but the hours of sale were also restricted, and many of the troops left the country, whilst others were subject to military restraint, both of which caused beer drinking to go down; whilst high wages on the other hand, especially in the shipbuilding areas and the industrial centres concerned with war material, and money paid over to reservists and the separation allowances, all tended in the opposite direction. Whether the realization of the national crisis may be connected with diminished drinking can be answered in the affirmative as regards the middle and upper classes, but among the lower classes, who have all come in for unprecedentedly high wages and artificial prosperity, this is not the case, and the drinking women among the wives of soldiers supports this. It may be stated deliberately that this class does not realize the importance nor the magnitude of the present crisis, although many of its sons have responded splendidly

to the call of patriotism. Owing therefore to increased spirit drinking and to the consequent unsatisfactory production of the munitions of war serious appeals have been made in the press and elsewhere for lighter beers, i.e. beers of lower specific gravity, but such appeals are based upon the erroneous belief that the amount of alcohol would of necessity be lower in the lighter beers. The amount of pure alcohol consumed per head of the population in this country has been estimated to be 1·84 gallons (in France it is 1·20 gallons), and of this about 3 per cent was consumed in registered clubs. It is stated that there is fully six years' supply of home-made spirit in this country, and one and a half year's supply of foreign spirit at the present moment, and if the spirit consumption is to be kept down there is no urgency for working the distilleries, at any rate during the war, and more especially as 73 per cent of the barley used for distilling and brewing is imported; also as over 386,000 persons are being employed in the spirit business alone—of whom more than half are under the age of 35, and 85,000 are unmarried—this industry could well be stopped or modified. It is natural to assume that many of these persons would find a more patriotic occupation elsewhere. Since the war began the question of drink has become one of international interest. Russia had foreseen that this must be so, and early in the war decreed the total prohibition of the national spirit *vodka*, which has furnished her people with one means of safety for her military efficiency, her national resources, and home life. Not only has this radical prohibition in Russia been successful but the further prohibition of all alcoholic liquors for all ranks of the services has been enacted. This action has considerably increased the savings bank deposits and has also greatly improved the discipline of the troops. The example of Russia has inspired France to prohibit absinthe,

and these radical measures excited no opposition among the general public, and very little among the trade, whilst the legal measures decreeing this prohibition passed both Houses of the Legislature as a wave of "patriotism against pocket". General Joffre has, moreover, prohibited all liquor, except that issued officially, to all of his troops, because he considers that to diminish the moral and material strength of his Army is a crime against national defence! In Austria the military authorities have forbidden the serving of troops or of individual soldiers with intoxicating liquors at railway stations, and early this year, 1915, orders were issued by the civil authorities that no more barley should be used for brewing. In Germany neither wine nor beer was permitted to be supplied to the troops during mobilization at or near any railway station, whilst special orders as to drink in the field were also issued. In some of the Provincial Governments of the German Empire the power to close all spirit shops was allowed, and only 40 per cent of the average quantity of beer was permitted to be brewed, so as to preserve the barley for breadmaking. The Government of Italy has also joined this international campaign against spirits by altogether banning the sale of absinthe. In Switzerland absinthe was prohibited before the war, but except in Basle, where the sale of spirits to soldiers is forbidden, no special action has been taken since the war, although the Commander-in-Chief of the Swiss Army has requested all innkeepers to sell non-alcoholic liquors to soldiers at low rates, and has requested all army officers not only to speak to those under their command about the importance of temperance but also to show a good personal example, and efforts are being made throughout Switzerland to preserve the good conduct of their troops by the use of reading-rooms, recreation, and diversions.

What precautions against alcohol have been taken in this country, which is not even neutral, but which may be upon the brink of national disaster? It has been urged from the pulpit, in Parliament, and in the press that increased national efficiency would result from a suspension of the sale of intoxicants during the war. The King, Lord Kitchener, Mr. Lloyd George, and thousands of others, including Ministers of the Crown, have declared their views and offered their example. The Rev. F. B. Meyer, one of the leaders of the Free Churches, has declared that "the people are looking to us for guidance, and we shall fail them at our peril". The citizens of Belfast, under the direction of Labour leaders such as the managing director of Messrs. Harland & Wolff's shipbuilding yard, have joined the Trade Unions, the Boilermakers', Joiners', and other Societies in appealing to the Government to prohibit the sale and manufacture of intoxicating drink in all licensed houses and clubs during the war, protesting that the mere restriction of hours would not prove sufficient. The influence of the brewers, represented by the Allied Brewery Traders' Association and the great distillers, is so strong, however, that the truth about the effect of alcohol upon sustained muscular effort is kept back and minimized, and the workers engaged in production are deluded into the belief that they are being deprived of their freedom of choice and liberty of action as well as of a useful medicine! The view of doctors in the great industrial centres unanimously urges that some protection should be given to those who work in places like the Clyde districts against excessive temptation, for many workers now spend large proportions of their wages in drink, the result being that they are often useless as workers on Monday mornings, and that all through the week their efficiency remains impaired. Further, their homes under the "curse of drink"

are places of misery, their wives and children have no justice done to them, they are ill-clad, ill-fed, and frequently succumb to disease, and this in spite of higher wages than were ever earned before by the husbands and fathers. It is incumbent upon the State through its responsible Government to prevent itself from being doubly weakened by losing in the first place an efficient workman, and secondly, by having to support his dependents. It is vital to the national interests that the health and strength of the working community should be maintained at the highest level of productive efficiency if victory, moral and material, rather than a crushing defeat should be experienced.

The heads of four of the largest religious bodies in Ireland — Roman Catholics, Protestant Episcopalians, Presbyterians, and Methodists — appealed to the Prime Minister strongly urging that the example which had been set by Russia, France, and even Germany should be followed by Great Britain and Ireland. They requested that the *bona-fide* Travellers' Act should be repealed, that "wet canteens" should be discontinued in military camps, that there should be a prohibition of the sale of drink after 1 p.m. on Saturdays and after 6 p.m. on other days, and that all public houses should be closed on Sundays.

Many other schemes have been urged upon the Government, one suggestion being to apply the law as existing in Canada that all immature whisky should be bonded for a period of five years. There would thus, it is claimed, be less drinking, because spirits would be more expensive owing to the cost of storage and because of wasting by evaporation, and even in the interests of Public Health this would be a gain, but it would also have the great effect of diminishing serious inefficiency. The Royal Commission on Whisky and other Potable Spirits, 1909, made the same suggestion as to storage.

The most recent suggestions made to the authorities have been of a twofold nature, viz. firstly, the control of the licensed trade in munitions areas; and, secondly, further heavy taxation of beer and spirits. As to the first, the Government, it may be observed, already possesses the necessary Parliamentary powers to enable control to be exercised through the Defence of the Realm (Amendment No. 3) Bill, introduced on 29 April, 1915, whilst, in regard to the latter, Parliament passed a resolution in Committee of Ways and Means, imposing additional taxation on spirits, and on all beers containing over 7 per cent of proof spirit. The duty on spirits was also nearly doubled, for it was fixed at 14s. 9d. per gallon. The wine duties were at the same time quadrupled, and an additional 15s. per bottle was imposed on sparkling wines. As soon as they were passed these resolutions would have a provisional effect, requiring only to be embodied in a Finance Act to become permanent. Unfortunately, however, these resolutions at a later stage were abandoned, and all that the discouraged Government then asked for was that spirits should be bonded for a period of three years.

Hitherto, so far as this country is concerned, the only approach to prohibition or control has been a restriction in the hours of sale, and we have just experienced its application by an Order in Council defining ten areas in which the sale and supply of intoxicating liquor has been controlled, on the ground that "war material is being made, loaded, unloaded, or dealt with therein". The first order made by the Central Control Board (Liquor Traffic), and the first district to which the order was applied, was Newhaven. Other orders have been made for the Northern area of Scotland—including Dundee, Aberdeen, and Inver-

ness, also for the Tyne, Mersey and Clyde districts—including Middlesbrough, Newcastle, Barrow, Liverpool and Cardiff. The London Metropolitan District has also been included, and inquiries made with the view of effecting similar restrictions for Birmingham, Leeds, Sheffield, Pembroke, Plymouth, Portsmouth, Devonport, Sheerness, and some others, in all about fifteen district areas. It is hoped that the whole of this country will be placed under restrictions in spite of the enormous brewery and distillery interests working adversely to it and the public interest. We have yet to appreciate the illuminating lesson from Russia, where the prohibition of vodka, the national spirit, has resulted in so much increase of the national savings and of work, the former to more than three times their previous total, and the latter to more than half as much again. The reduction in the amount of drunkenness and the improvement in public order are immediate, but less immediate is the control effected over the roll of pauperism, vagrancy, crime, lunacy and disease, as well as premature death. It is certain that these restrictions in the hours of sale for drink are the best means to attain efficiency in the men as well as in their satisfactory time-keeping when at work. Enquiries are now being made of the Medical Officers of Health for London, and their reports are entirely on the side of continuing restrictions for the sake of order in the streets, better homes, and the diminution of drunkenness; particularly noticeable has been the great improvement in the behaviour of soldiers and sailors themselves. In fact nothing but good results have attended these compulsory restrictions, and it is earnestly hoped that the Defence of the Realm (Liquor Control) Regulations, 1915, will be the initiation of a similar permanent scheme throughout the land.

X

ALCOHOL AND WORK

BY

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ALCOHOLIC drinks are consumed all the world over, but their consumption is to some extent influenced by such circumstances as climate, the degree of coldness and humidity of the atmosphere, and the nature of man's employment. On the whole it is safe to say that within limits the practice of drinking increases as we pass away from the equator, or in other words with the greater intensity of all forms of human activity. Men do harder work in moderately cold climates, muscular movements are more energetic and respiration is more active. Alcohol diminishes the resistance to cold. This was proved in Napoleon's campaigns and is the experience of the Monks of St. Bernard, so far as persons travelling over the well-known Swiss Pass in winter are concerned. Distilled spirits, such as whisky and brandy, are more harmful than beer. Mild beer may not contain more than 2 to 3 per cent of alcohol or one-thirtieth of that of strong spirit. The toxicity of the alcohols increases in proportion as their atomic formula is raised.

THE ACTION OF ALCOHOL ON WORKERS

The usual mode of entrance of alcohol into the body is by the stomach, but in places where alcohol is freely dissipated in the atmosphere inhalation of the vapour is capable of inducing intoxication. It should be remembered that some persons are more readily influenced by alcohol than others. Women and children are less resistant to it than men. While certain occupations, such as working in hot and confined places, are said to predispose to indulgence in alcohol, much depends upon habit. Hard muscular work not only induces free perspiration but creates a sense of exhaustion. Dusty occupations by creating dryness of the throat favour the use of alcoholic beverages. I found this particularly to be the case among the buhr millstone builders both on the banks of the Thames and at Fiesté-sous-Jouarve in France.

The influence of heredity too cannot be ignored. The age at which people commence drinking varies. So far as occupation is concerned the habit often commences during the early working period of life, partly from bravado by youths trying to imitate their elders, and partly from the absurd practice of "treating". So much is "treating" regarded as a cause of alcoholism among the working classes that in some parts of the United States one person is not allowed to "treat" another. A similar step has been taken by our own Government during the war. Opinions differ as to whether indulgence in alcohol is becoming more or less prevalent among the working classes. I think the working classes do not drink more than they did, if anything they are more temperate, and towards this I think we must admit that improvement in the conditions of labour, shorter hours, and the Sunday's

rest have contributed. Notwithstanding all this, drinking is still too prevalent a circumstance for which, despite what I have said, abuse of the week-end rest is partly responsible. This point will be made clearer later on. How far drinking has been responsible for the reduction of the output of munitions of war in the present crisis through men not putting in sufficient time, I am not prepared to say. Employers are convinced that drink is responsible for the slacking. There have, however, been other factors in operation, one of which is the reduction in the amount of skilled labour through many men having gone to the front. Allowing for this the possibility of drink having played a part cannot be ignored. To this further reference will be made. Various excuses are offered to extenuate the drinking habits of the working classes. Enforced idleness and its consequent mental depression, the fact of young people being forced into work of too hard and laborious a nature for their age, bad housing, exposure to cold, and "hanging about" during times of irregular employment have all been advanced.

ALCOHOL AND ENERGY FOR WORK

There is a belief among working men that alcohol is capable of supplying energy. Even if this is admitted the amount of energy capable of being utilized by the human body could be in no way proportional to the quantity of alcohol consumed. Some persons, for example, find after the ingestion of even small doses of alcohol that their brain activity diminishes. In all instances where muscular work is concerned any increase of work obtained through the use of alcohol is temporary, and is followed shortly afterwards by a decline. On this point experience has much to say. Men who are about to train

for running or for other athletic contests, even if at other periods they indulge in alcohol, have told me time and again that during training they eschew alcohol. Cyclists repeat a similar story. Nansen in his voyage to the North Pole refused to give the men stimulants, and to this circumstance he attributed the ability of the men successfully to withstand the extreme rigours of an Arctic winter. The question of alcohol being a food does not concern us here for the subject is probably dealt with elsewhere in this volume. Opinions are divided in regard to it. All that need be said is that any increased work alcohol is capable of inducing is of brief duration and is followed by a reduction. The "doping" of greyhounds and of racehorses is an illustration. Doping, or the administration of stimulants to animals about to run in a race, was formerly more in vogue than it is to-day. Owners and trainers of these animals so timed events that stimulants were given before starting to bring out at the proper time the maximum of speed due to the spurt which alcohol creates, but if perchance there was delay in commencing the contest, trainers for the race knew quite well that when the short period of stimulation had passed away "doping" had placed the animals entirely beyond all chance of success.

Experiments have been made in the physiological laboratory in the hope of throwing light upon the relationship of alcohol and work. Lombard¹ was one of the first to use the instrument known as the ergograph in this connexion. He found that alcohol primarily increased the amount of work done and that this lasted for a short time afterwards. Rossi also found a slight

¹ Rivers, W. H. R. : "The Influence of Alcohol and Other Drugs on Fatigue." London, 1908.

increase followed by a fall when alcohol was given before work; Frey found that the effect in most persons was a diminution in the amount of work done, but if given after a certain amount of work had been done, in a word after fatigue had developed, that it had a beneficial effect. He therefore concluded that alcohol had a double effect: (1) an injurious one upon the nervous system, and (2) a beneficial action as a food for muscle substance. Frey's conclusions led to considerable controversy and drew other investigators into the field of inquiry. Of these Destréa, while coming to the same opinion as Frey that alcohol stimulates tired muscle, did not find the effect on unfatigued muscle which was said to take place. Destréa's experiments confirm the statements I have already made that the stimulating action of alcohol is fugitive and is followed by a fall in the amount of work done—the fall being below the normal. The results of experiment and experience do not exactly tally. One of the effects of alcohol is seen in a disinclination for work. This mental attitude to work, although based upon a physical condition of the nervous system, the ergograph cannot demonstrate.

Elsewhere in this book the relationship of alcohol to other diseases is discussed. There is abundant evidence as to liquor taken to excess predisposing to tuberculosis and to it causing convulsions in men of and under middle age. Combined with the influence of hard work, alcohol causes disease of the heart and blood vessels; it hastens in the body the advent of structural changes usually called senile. In the case of lead workers alcohol hastens the development of plumbism and precipitates the worker into its worst form, that in which the nervous system is mainly affected. Alcoholic excess is responsible for some of the worst forms of neuritis.

There are circumstances incidental to certain occupa-

tions which are not without their influence in causing a craving for stimulants. One of these is "over-speeding" or working at too great pressure. Prolonged overstrain creates a desire for stimulants. The effects of the increased amount of Sunday labour introduced into several factories during the present war have been reported upon by the Federation of Trade Unions. The Management Committee is of the opinion that Sunday labour ought to be restricted as far as possible as there is evidence of an increased sickness rate in consequence: in addition the intense fatigue created thereby obliges the men after a few weeks' trial to relinquish the practice and to lie in bed over the week-end in order to recover. Besides, to relieve the sense of tiredness stimulants are apt to be resorted to. Working in dark and badly ventilated workrooms has a depressing effect upon men and it encourages a taste for drink. Formerly in many of the large works stimulants were allowed to be brought into the factories, but in most places this is now contrary to regulations. A few years ago, when acting upon the Dangerous Trades' Committee of the Home Office, I saw beer brought into one of the laundries in London and sold to the women workers. The practice has been stopped and with improved results so far as the character of the work and the health of the women are concerned. Defective feeding is partly responsible for many working men taking to drink, and especially is this the case where the home is uncomfortable and not made attractive.

I have alluded to "increased speeding". This not only wears out the individual, but by exhausting the workman it becomes a cause of accidents. Increased speeding induces fatigue, and fatigue is a cause of accidents. Fatigue is due to the action upon nerve endings and nerve cells of

poisonous products formed within the body as the result of muscular metabolism. For a fatigued person to add to his blood, unless in minute doses, another poison in the form of alcohol is only to make matters worse rather than better. What are required are longer periods of rest, and this leads me to a debatable part of this paper. Statistics show that in all countries wherein work is carried on upon a large scale the largest number of accidents in factories occurs on Monday and Saturday. The accidents of Saturday are probably due to the men becoming tired as the week draws to a close, just in the same way as the larger number of accidents during the hours 9-12 a.m. and 3-6 p.m. on working days is believed to be due to the men becoming fatigued. The large number of accidents occurring on Monday can hardly be explained by fatigue, for in peace times most of the working men are off all Saturday afternoon and the whole of Sunday. Some other factor is in operation. Either the men have not got sufficiently into the swing of the work or, since many of the men voluntarily absent themselves from work on Monday either for the whole day or part of it, and are still found to be drinking when they should be working, it is reasonable to presume that it is alcohol which has kept them from the factory, and that in the case of some of the men who resume work the effects upon the brain and nervous system of the alcohol taken over the week-end have not entirely passed away, a circumstance to which some of the accidents in the factory may be due. Alcohol not only contributes directly and indirectly to accidents in factories but it is the experience of all physicians that alcoholic subjects who meet with an accident have neither the resisting power to withstand the effects of the injury nor have their tissues the healing power of those of abstinent persons.

As a determined attitude has been taken by the Government in regard to the excessive consumption of spirits by the working classes having played an important part in the slackening of work seen in the reduced production of munitions in the war, also in consequence of the statements made in the House of Commons upon the drinking habits of the working classes and slacking of work, I placed myself in communication with two managers of large steel and iron works in the North of England, and invited from them answers to such questions as whether in view of the hard work the men were engaged in, and the heat of the blast furnaces, stimulants were a necessity, and whether as regards output there was any difference between that of men who are abstainers and that of those who are not. I will simply reproduce the replies I received. One manager writes: "Of 101 men at the furnaces, but not engaged in the hot part of the work, thirty-two are total abstainers: of 108 engaged in the hot work twenty-two are abstainers, i.e. nearly 25 per cent of the men engaged in the laborious part of blast furnace work are teetotallers. I was surprised to find among the men," he says, "so large a number of abstainers, and I think it is the best answer you can give that stimulants are not necessary to the performance of their duties. It would be risky to say that teetotallers are better workmen than the others, or that they attend to their work more regularly. Between the total abstainer and the moderate drinker there is nothing to choose from an efficient workman's point of view. We have a few men who drink to excess, and who by getting drunk every pay week lose a good deal of time. None of the men are allowed to leave the works for meals. Most of the men drink a home-made ginger beer—a few drink ordinary beer. Between meals water is drunk: during hot weather

oatmeal is supplied to the men to mix with the drinking water, the feeling among the men being that it prevents cramps."

Another manager writes: "It is almost impossible to generalize, but attempting to do so, I should say that alcoholic drink is not by any means necessary for men doing laborious and hard work: indeed it is comparatively quite common to have teetotalers: these men do their work quite as well as moderate or heavy drinkers. On the other hand, there are plenty of instances of heavy drinkers who do their work quite efficiently. Of course, when one speaks of 'heavy drinkers' it is necessary to differentiate between a man who gets more or less intoxicated after the finish of his shift and another who only has a 'burst out' at the week-end. I presume one may take it for granted that a heavy drinker becomes old and incapable of doing severe work earlier than if he had been more temperate, but this is somewhat difficult to prove. I have known instances of men who were drinkers doing heavy work under severe conditions on to quite an old age, indeed such an age as one would expect would be the limit for those who had been temperate. Our men are not allowed to bring intoxicating liquor into the works, except beer, which is brought in with their meals, and in the course of their occupation, speaking generally, the workmen drink water or a home-made ginger beer. At one time, in very hot weather, we used to serve out oatmeal which the men put into the water, and, after it had settled, used the water as a beverage, but this gradually fell into disuse and it has not been done for some years. As the men have made no complaint, apparently they have not felt it a deprivation."

The importance of the subject, Alcohol and Work, demands that it should be dealt with from a broad-minded point of view. I have therefore given at length the

replies of managers of blast furnace works in which the processes are arduous and the men are exposed to great heat. Between the amount of work done by the moderate drinker and that by the total abstainer these gentlemen say there is apparently little to choose, a remark which applies also to regularity of attendance. Notwithstanding this it is the experience of some of the managers and foremen in shipyards on Tyneside and elsewhere that indulgence in alcohol is one of the commonest causes of men losing time. In "The Times" of 31 March, 1915, two specimen attendance sheets are presented from which it would appear that while drink is not in every single instance the cause of men absenting themselves from work, it is so in a very large number of cases. An analysis of the tables shows that of 900 working days possible 270 were lost through drinking. This gives an average loss for the fortnight of 33·5 days, or nearly two days per man per week. If this is so, and the cause mentioned is correct, it is a bad outlook for British industry after the war is over. All factories fortunately are not the same. In "The Times" of the same date the manager of a small engineering works states that all of his workers are professed total abstainers. Assuming that a week's work is forty-nine hours, 100 men would represent 4900 hours of work. In no one week did the loss of work in the factory exceed forty-nine hours, and more often it was less than fifteen. In some factories the loss of work has been from 15 to 25 per cent, that is between 700 and 1200 hours per week out of a total of 4900. The manager of the engineering works alluded to remarks further that the quality and quantity of the output are satisfactory, and that at a time of stress like the present a total abstainer is a better man and that his record of overtime work is more satisfactory.

The statements made by Mr. Lloyd George regarding the relationship of drinking and the reduced production of munitions were not allowed to pass unchallenged. Mr. J. H. Thomas, M.P., in an address delivered on 2 May, 1915, remarked that it was not only his own feeling and that of his colleagues but of the public generally, that no Government, and certainly that no minister, should have accepted any figures presented to them by one section of the industries alone. Admitting that a great deal of time has been lost, Thomas states that there has been more sickness among the men during the last four years than formerly. Taking the figures of his Society, the National Union of Railwaymen, he finds that there has been an increase of 10 per cent in sickness benefit during the last year, and that this has been largely brought about by over-pressure of work. It is impossible to have long hours and men working in arduous processes every day of the week, Sunday included, without a reaction taking place. All the circumstances therefore which enter into the situation must be taken notice of. Nearly all persons, however, are agreed that drink is a factor, probably one of the most important, in the reduction of output, and that short of real disease there is nothing which so unfits men for work as indulgence in alcohol.

XI

ALCOHOL AND WAR

BY

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WHEN a country is engaged in a great war the strain upon the individuals and upon the whole community is more intense and more prolonged than under any other known condition. This strain for the individual is physical, mental, and moral, for the community it is economic, political, and moral also. It involves the whole nation, and even those most remote from the field of battle, the dockyard, and the arsenal are involved in its widespread effects and issues. Because then in a time of war the strain upon the individual and upon the community is all-embracing and is at its maximum intensity, it is of special importance to know what are their allies in the great struggle and what their enemies, and it is well to see whether alcohol is a friend or a foe in the time of man's extremity. It might suffice just to refer the reader

to what is contained in the previous chapters of this volume, but the question is so grave and so important, especially just now when we are engaged in the greatest of all wars, that it seems well to summarize the chief facts and to demonstrate how far-reaching and how grave are the effects of the consumption of alcohol by a nation at war. We will deal with the subject very briefly and refer the reader to what has gone before for the proofs of the statements made. It will be well just to set out what are the conditions essential to the most successful conduct of a great war.

THE RÔLE OF THE SOLDIER

The soldier should be capable of great and long-continued muscular exertion, often culminating in a supreme effort, and to recover from fatigue quickly. He often has to withstand extremes of heat or of cold and be exposed to such adverse conditions as wearing wet clothes and sleeping on the bare ground. To put it briefly he must be capable of great physical endurance. He requires also to have all his senses alert, his vision and hearing sharp, his perceptions accurate, and his response to any stimulus rapid and precise. His judgment must be at its best, quickly formed, unwavering, and sound. His emotions must be well under control, whether of courage or fear, joy or sorrow, hope or despair. The successful soldier needs not only great powers of physical endurance, but well-trained senses and carefully disciplined emotions—his higher nervous functions must be at their best. Alcohol lessens man's power of physical endurance, delays recovery from fatigue, increases the ill effects of great heat or cold, blunts the senses, retards nerve response, diminishes self-control and blurs the judgment.

In all these ways, therefore, alcohol gravely lessens the fighting value of a man.

But in every campaign the soldier has other enemies to contend with than his official foes. His food may be scanty, supplied irregularly, and of coarser kind than usual: he needs therefore to have his digestive organs working at their best. Far more important than this, however, is the exposure to infections of many kinds which is a grave danger in all wars—cholera, plague, enteric, and typhus fevers, small-pox, malaria and yellow fever, are some of the chief of these. The incidence of these diseases in an army depends not only upon exposure to infection but largely upon the soldiers' powers of resistance to the specific organisms. This protective power may be largely increased by artificial means, such as in typhoid and small-pox vaccination; it may be diminished by exposure, by fatigue, by over-crowding, by fear or despair, and certainly by alcohol. When armies have to be guarded against epidemic disease by other means than a protective vaccine, careful attention to details—sometimes irksome—is essential, and anything that tends to lessen the sense of personal responsibility or full self-control, is a great cause of failure of these prophylactic measures. Alcohol, by lessening men's self-control and sense of personal responsibility, may mar the success of the best-laid plans for their protection from disease.

INFECTIOUS DISEASE AND MILITARY LIFE

Infection, however, plays an important part in every campaign as a complication of the wounds inflicted in war. Bayonet wounds are as a rule directly fatal, but only the minority of the wounds caused by bullets and shells are directly and immediately fatal. The deaths

occurring later—a large number—are due almost entirely if not indeed wholly, to the effects of infection of the wound by disease-producing organisms. And wound complications necessitating amputations, causing secondary hæmorrhage or leading to stiffened joints or to delayed healing, to abscesses, to grave illness, and to prolonged convalescence are due to the same causes. Some of these pathogenic organisms are “accidental,” such as the tetanus bacillus and the gas-gangrene bacillus, but others, the more frequent, are practically ubiquitous, such as streptococci and staphylococci. Against only one of them have we as yet a protective inoculation—antitetanic serum—and the chief protection against infection, and against its ravages when once it has occurred, lies in the special protective powers of certain cells and constituents of the fluids of the body itself. It has been clearly shown that phagocytosis is lessened by even minute quantities of alcohol, and it is equally assured that the rapid and effective production of anti-bodies is hindered by alcohol. All “septic” processes—spreading cellulitis, suppuration, sloughing, secondary hæmorrhage and the like—are more frequent in those who take alcohol, and are also made worse by alcohol.

Of less importance than infection, but still to be carefully remembered, is the influence of alcohol upon the immediate effects of wounds in battle—shock and hæmorrhage. Shock from similar injuries is certainly graver amongst those who take alcohol freely than amongst those who take none, and the same is probably true of those who take alcohol in moderation. There are many elements which combine to determine the intensity of shock in any given case, and it is not easy to apportion the share due to each, and we must speak with caution on this point. But there is no need for caution in asserting that the adminis-

tration of alcohol is not only uncalled for, but is actually harmful in the treatment of shock. Hæmorrhage is more profuse in the subjects of diseased arteries due to alcohol, and in all cases is increased by the administration of alcohol.

The civil population of a state at war requires in the first place an economical use of all commodities and especially of food, of clothing, and of fuel. The conversion of corn, rice, and sugar into alcoholic beverages is an uneconomical and wasteful consumption of valuable food-stuffs. The labour expended in the production and distribution of alcoholic drinks is at its best using labour for a purpose which does not further the prosecution of the war, and is therefore wasteful and improper. In proportion to the gravity of the war and the extent of its demand upon the services of all males of military age and capacity, the interference with civil labour and production increases, and extra and unusual demands are made upon those not serving in the ranks, including women as well as men, the young, the inexperienced and the old. Along with this there is an urgent demand for the rapid and increased production and transport of everything used by the Army. It follows that the physical robustness and capacity for work of the civil population is only second in importance to that of the fighting force. Anything that like alcohol lessens the quantity and quality of the national output is harmful and diminishes the strength of the "men at the front".

WAR AND THE TESTING OF CIVILIANS

In some instances the civil population is as much exposed to the risk of infectious disease as is its army in the

field; the sick and wounded soldiers may bring back infection with them, and the depressing, impoverishing, and insanitary conditions caused by war may convert sporadic or mild endemic diseases into widespread and very fatal epidemics. What has been said of the injurious influence of alcohol upon soldiers applies with equal force in such cases to its use by the civil population.

The strain of war upon the emotions of civil populations is obviously great and may become most intense. Apart from the general anxiety there are the special anxiety of the relations of those in the fighting line and of the wounded, the grief of the bereaved, the distress of the impoverished, and the fear of those exposed to the horrors of siege, of bombardment, or of the incursion of a hostile force—possibly of a brutalized soldiery. In moments of victory rejoicing may be excessive and lead to foolish acts, and in times of defeat and disaster excessive depression may paint the picture too dark, paralyse an enfeebled resistance, and lose an opportunity of changing defeat into victory.

When war draws towards its close the clearest judgment is needed to choose the right moment to make or to accept overtures of peace, and to distinguish between those conditions which make for a permanent and honourable peace, and those which though gratifying for the moment have in them the seeds of future strife or are incompatible with national and personal honour. The national judgment needs to be at its best at such a crisis, and for this as during the whole course of a war, the rule of the highest mental endowments of the whole population must be at its strongest and best. And if this is true of a people considering how best to end a war in a just and honourable peace, how true it is at those supreme moments when

a nation has to decide whether and when and how peace is to be broken and the dogs of war let loose !

The last point on which it is necessary to say a few words in connexion with the civil population at a time of war, is the need to repair as quickly as possible the loss of life occasioned by the war. This naturally divides itself into the increased care of infant and child life, and to increasing the birth-rate. In previous chapters these questions have been dealt with at some length. Here it suffices to say (1) that alcohol certainly should have no place in the dietary of infants and young children ; (2) that alcohol taken by nursing mothers is injurious to their breast-fed infants ; (3) that among all but the wealthy—i.e. in the very great majority—money spent in alcoholic beverages is wasted and during a war any waste is disastrous ; this waste deprives growing children of food, of proper clothing, and of other favouring conditions upon which the scanty means of their parents should be wholly expended ; and (4) that indulgence in alcohol on the part of parents leads to careless treatment of their children, to a lessened sense of parental responsibility, and often to neglect or even cruelty.

Drunkenness in parents is a potent cause of sterility, of miscarriage and still-birth, of ill-developed offspring, and also of an excessive infant mortality. It cannot be doubted that the habitual taking of alcohol, in quantities short of that necessary to produce inebriety, has the same effect upon the birth-rate and upon the standard of the children born, in a proportionate degree. Nor must it be forgotten that in the terrible anxieties and the despair, as well as in the exaggerated rejoicings in times of success, those who use alcohol are particularly prone to take it in unusual quantity—often to great excess, and it is in

times of war, therefore, that its grave effects upon the community are prone to develop. It is also to be remembered that the most horrible excesses of a victorious and brutal soldiery have been generally if not always made possible or greatly added to by their drunkenness, or at any rate by their free indulgence in alcoholic beverages: the facts recorded by Lord Bryce's Commission afford the most recent proofs of this fact.

THE PLACE OF ALCOHOL IN WAR TIME

To sum it all up we assert that the use of alcohol in a time of war is bad for the soldiers because it lessens their power of physical endurance and recovery from fatigue, it diminishes the accuracy of all sense-impressions and the rapidity and assurance of reflex and voluntary response, it interferes with the soundness of their judgment and the control of their emotions, and it lowers their power of resistance to extremes of heat or cold and to all infections whether primary or secondary to wounds.

To a nation at war alcohol is a traitor, it is made by a wasteful expenditure of much-needed food and labour, it lessens the physical fitness and power of effective work of the civil community, it blurs their judgment, lets loose their emotions, exposes them to greater risk from epidemic diseases, and it undermines their power to make good the most serious ravages of war—the serious loss of the young adult male population.

Against this indictment what can be urged? The comfort of continuing a long-established habit: the non-interference with a long-established trade: the soothing and narcotizing effect of a drug that at great cost lessens the sense of the accumulating horrors of war and mortgages the future for a momentary deceitful indulgence.

In times of peace and of great national prosperity the use of alcohol is attended with terrible cost and grave dangers, and at such times the careless and the custom-ridden may resolve to pay the price and to run the risk. But in a time of war when the fountains of the deep are opened, and every day takes its heavy toll of human life and labour, the nation that deliberately lessens its fighting capacity, increases the cost of the war in all that is most precious, and its power of recovery from the disastrous effects of war, even to the victors, is blind to its true interests.

XII

ALCOHOLISM AND LEGISLATION

BY

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THE legislative aspect of the temperance problem has for nearly half a century in this country provided one of the most troublesome, difficult, and, from a party point of view, dangerous social and political questions with which statesmen and Parliament have been called upon to deal.

THE TRADE IN ALCOHOL

The trade in intoxicating liquors has been regarded as an exceptional one, and has been subject to more or less stringent restriction, regulation, and taxation for 400 years. The principle upon which legislation has proceeded has been that, unless the sale of alcoholic liquors was exceedingly carefully safeguarded, it was likely to have undesirable surroundings and consequences, and be very injurious to the best interests of the community. Since the time of the Stuarts the right to keep a public-house or inn has

been restricted to persons specially authorized to do so, the object being to insure that only suitable and reliable people should be allowed to keep what we now generally know as licensed premises, and that the privilege granted would be liable to be withdrawn if the conduct of the person holding it should be unsatisfactory, or if, for any reason, it should be considered by the responsible authorities desirable in the public interest that the privilege should cease. During the whole of that period the duty of determining where inns and public-houses should be placed, and by whom they should be managed, subject to the conditions and regulations from time to time enacted by Parliament, has been placed upon the shoulders of the local Justices of the Peace.

Until shortly after the end of the first quarter of last century the only houses licensed for the sale of alcoholic liquors for consumption on the premises were fully licensed inns and public-houses, in which all kinds of drink—spirits, beer, and wine—could be sold.

LEGISLATIVE CONTROL

The legislation of the last 100 years has run on two main lines. One has been a curtailment of the hours of sale and a reduction in the number of licensed premises; the other has gone in the direction of encouraging the provision of facilities for consuming beer and wine on premises where spirits are not sold, and also for obtaining various kinds of liquors in bottle from places where drinking on the premises is not allowed.

The curtailments which have, from time to time, been made in the hours during which licensed premises could be open for the sale of intoxicants have been entirely

advantageous. A hundred years ago public-houses were allowed to be open practically without limit as regards hours of sale, and they are now allowed to be open very much longer than is necessary. In Scotland the hours of sale are very much shorter than in England, and a curtailment of several hours a day might be made here with great benefit to the community. Sunday closing has been in operation in Scotland, Ireland, and Wales for a long period. That it is unquestionably a great boon and is highly appreciated is proved by the fact that not a single elected public body in any one of those countries has ever asked Parliament to repeal the law, and no member of the House of Commons from any of those countries has ever dared to introduce a motion or a Bill into that Assembly for the purpose of restoring Sunday opening.

The reduction which has been made during the last fifty years in the number of places licensed for the sale of intoxicating liquors for consumption on the premises has been very large in England and Wales in proportion to population. In 1869 the number of fully licensed houses and beer-houses was 117,488, or fifty-three to every 10,000 of the population. In 1913 the number was 88,739, or twenty-four to every 10,000 of the population. One result of this reduction and of the difficulty of obtaining a licence for new premises has been to make a licence a very valuable monopoly, and consequently to increase the difficulty of Parliament and licensing Justices in dealing with licensed houses as the public interest requires. The financial interests involved in the liquor trade and the political and local influences which they have been able to exert have, for a very long time, been a serious obstacle in the way of effective legislative reform and administrative action. During the last thirty years that influence has

become more widespread, more efficiently organized, and has been more openly exercised than was formerly the case. The way in which the various branches of the liquor and allied trades have been able to concentrate their political power and bring it to bear locally and nationally, and the extent to which they have been willing to subordinate every other consideration of public interest and well-being in order to resist any and every effort to restrict the sale of drink, has led a large and influential body of thoughtful social reformers to the conclusion that effective dealing with the legislative and administrative phases of the drink problem would be enormously facilitated if the financial interest of those who are engaged in the liquor trade were reduced to a minimum.

THE DIFFICULTIES OF LIQUOR LEGISLATION

Difficulty attaches to, and serious controversy arises in connexion with almost every proposal for dealing with the liquor problem by legislation. On the one hand, there are those who urge that alcoholic liquors are worse than useless as ordinary beverages; that their consumption leads to grave social and public evils; that the teaching of all experience in every country in all ages is that these results must follow; that no system of regulating the sale or supply of these beverages ever has, or ever can, succeed in preventing their use from being a great evil, and a national danger and discredit; and that, consequently, the only sound and defensible course for the community to take with regard to them is not to attempt to regulate or in any way to sanction their sale, but to prohibit it. On the other hand are those who regard these beverages as something akin to necessities of life or, at any rate, as perfectly proper and desirable articles of daily consumption,

interference with the supply and purchase of which, except in so far as it is necessary in order to obtain from them a reasonable revenue for the State, is an unjustifiable inroad on personal liberty. Their view is that the undesirable results which are found in connexion with the general use of intoxicants in all communities are the consequences of their abuse, and not of what they consider to be their proper use, and are due to the shortcomings of the individual and of his social condition and surroundings, and that, consequently, the remedy for intemperance and the evils which flow from it is to be found, not in legislative interference with the sale of drink and the social customs of the people in connexion therewith, but in correcting the weaknesses of the individuals, improving their education, and ameliorating the economic and social conditions under which they live and work. Between these two diametrically opposed attitudes of mind, which are the result of fundamental differences of opinion as to what are causes and what are effects in connexion with the problems with which they are concerned, there are numerous grades and shades of opinion and corresponding variations in the solutions which are suggested, and the line of advance which is advocated.

Undoubtedly the problem is a complicated one in which causes and effects act and react. In my opinion, alcoholic beverages are certainly not necessities of life. If they were abolished at a stroke to-morrow, the world would be much healthier and the material, moral, and social well-being of the people would be enormously increased. At best they are a luxury. Vast numbers of persons enjoy them, and are convinced that no disadvantage whatever results to them from their consumption of them. They say that they object to being deprived of a legitimate

beverage which they believe is beneficial, if not indeed necessary, because others consume similar liquors unwisely. If the matter ended there, their contention might be a sound and conclusive one. But the real point at issue not only does not end there ; it is almost, if not entirely, missed. In this matter, as in most others, the Legislature does not interfere with personal and private habits and actions unless and until, and then only in so far as, they affect other people. A man may eat and drink what he likes ; but the law interferes with the sale of many articles of diet. So with alcoholic liquors, the law says nothing as to what or when or how much a man shall drink in his own house. It only concerns itself with the public sale. During the four centuries in which the sale of drink here has been regulated and restricted by law, the theory upon which our licensing legislation has been based has been that the sale of intoxicants should only be permitted by such persons and in such places as the legitimate requirements of the neighbourhood necessitate, and as are consistent with its well-being and good order. No one has either a moral or a legal right to demand, in order that he may obtain supplies of intoxicants, that a public-house should be opened or allowed to continue in any locality, if it would be contrary to the public interest if it were allowed. In other words, no one has a right to require that a nuisance, a danger, and a public evil should be imposed upon others for his convenience. The question is not whether he shall or shall not be allowed to drink what beverage he chooses, but whether, in order that he may obtain what he desires, the well-being, convenience, and comfort of others shall be imperilled, and their rights and liberties thereby infringed. The experience of ages in all countries has been, and is now, that grievous evils to the community

result from and are associated with the sale of intoxicating liquors.

For the last half century there has been an unceasing controversy in all English-speaking and in Scandinavian countries as to whether the evils associated with the liquor trade can be got rid of without prohibiting the trade altogether, and whether, if prohibition is the only remedy, the evils are sufficiently serious to justify such drastic action, and the remedy proposed is really a practicable and effective one. Clearly, it is and always must be difficult to give legislative and administrative effect to proposals which interfere with and cut right across the habits, appetite, social customs, and ingrained prejudices of a large proportion of the community. In democratic countries it will never be easy to carry such legislation, and it will be still less easy to enforce it unless public opinion in the area in which it is put in operation is strongly in its favour. Consequently, while the prohibition of the sale of intoxicating liquors is the policy advocated by almost all active temperance organisations everywhere, the form in which it is usually put forward, and the method by which it is proposed to obtain it, is that of giving to the people in their respective localities power to say, by means of a local vote, whether they do or do not desire premises and persons to be licensed to sell intoxicating liquors in their midst.

FINANCIAL INTEREST AND LEGISLATIVE CONTROL

Where and in so far as the policy of local prohibition is carried into practical operation, there will be little or no necessity for further licensing legislation : but when and where the power of local veto has either not been enacted or is not exercised, and the trade in drink exists and continues, the practical and pressing problem is, what is to be

done, and how can that trade be rendered as little injurious as possible? Much has been done and more remains to be done in the direction of reducing the number of licensed premises, shortening the hours of sale, closing on Sundays, and efficiently administering the laws which Parliament enacts; but at every step on these lines we find ourselves confronted and opposed by the political power and local influence of the liquor interest and allied trades and their friends. As an indication of what this means, and what would be gained if it were eliminated or reduced to a minimum, I may be permitted to quote from a recent article which I contributed to a well-known review.¹

“Not only is the direct financial interest which so many thousands of persons have in the trade the great barrier to legislative reform, but it is the great obstacle in the way of the effective administration of the law when it has been enacted. The retailer chafes at the restrictions which are put upon him, and continually exercises his ingenuity to avoid and evade them. It is his business to sell drink, and he resents anything that interferes with him in so doing. The brewer and distiller, the shareholder and the allied trader, are in the same boat. They are actuated by similar motives, and they cherish similar feelings. The whole weight of their ingenuity and influence is thrown against the effective administration of the licensing laws. At Parliamentary elections they are the warmest and most energetic supporters of the candidates who are most opposed or least favourable to licensing reform. When the question of appointing magistrates arises, every imaginable effort is made and every conceivable wire is pulled in order to secure the selection of men favourable to their trade, and the exclusion of others who would be likely to support a

¹ See “Contemporary Review,” 1915.

strict enforcement of the law. In municipal boroughs where the Watch Committees control the police, they are particularly active at local elections, and they spare no effort to secure the appointment of their friends on the Watch Committees, in order that they may thereby influence and largely paralyse the action of the police in all matters affecting licensed premises. The publican follows this up with gentle attentions to the police and discreet contributions to testimonial funds and the like. The brewers frequently complete the defensive wire entanglements by employing as their solicitors the firm of which the Clerk to the Justices is a member. Then all kinds of devices are resorted to to push the sale of drink—goose clubs, games, competitions, hawking, giving credit, snugs, partitions, and screens in public-houses: clubs are financed, shows and gatherings for sports are promoted, and advertisements of drink abound. The trade exists to sell as much drink as possible, and the whole of its organisation and arrangements have that object in view. Its aim is not to restrict drinking, but to extend it. Clearly it would be an enormous gain if the direct personal financial interest of the liquor trader were eliminated, and all pushing of the sale of drink and all inducements to the seller to evade the law were abolished. That can only be done by taking the trade out of the hands of those who now conduct it and placing it under the control of persons whose only object would be to promote the public well-being, and who would have no interest in pushing the sale or conniving at breaches of the law: that is to say, by placing it under disinterested management. There are more ways than one of doing this."

We may well ask what advantages would be gained? Some of them may be summarized as follows:—

1. The direct personal financial interest of individuals

deriving an income from the trade would be enormously reduced and largely changed.

2. The local and national, political and social influence, which is now so great a barrier to effective legislation and to the efficient administration of the laws which have been enacted, would practically disappear.

3. The number of licensed premises would be enormously reduced.

4. Grocers' licences would probably speedily disappear.

5. Shortening of the hours of sale, closing on Sundays, earlier closing on Saturday nights, the abolition of snugs and screens, back doors and side entrances, the stopping of credit and of hawking drink in casks and bottles, and many other minor but important reforms would at once be rendered practicable and easy, and could be carried out by the simple process of an administrative order.

6. Inducements to attempt unduly to influence and corrupt the police and pack our benches of magistrates and Watch Committees would cease to exist.

7. There would be an end of such contentious questions as compensation and a time limit.

8. The way would not only be clear for giving the people in their respective localities a wide power of local option, including local veto, but the ability to use the power would be largely increased because the opposition to it would be much reduced and be far less active and vigorous. There would not be any wealthy and organized liquor trade to fight.

BEER-HOUSES AND GROCERS' LICENCES

Reference has already been made to one of the tendencies of legislation during the middle of last century, namely that which ran in the direction of encouraging the provision of facilities for consuming beer and wine on premises

where spirits are not sold, and also for obtaining various kinds of liquors in bottles from places where drinking on the premises is not allowed. As the idea in which these tendencies had their origin is a plausible one, and has influential advocates to-day, it may be useful to point out where and why it proved to be disastrous in practice. The view which was widely held a hundred years ago was that the drunkenness and degradation of the people resulted from the drinking of "ardent spirits"; that beer was "liquid bread," and a necessity of life; and that the remedy for intemperance was to be found in providing ample facilities for obtaining beer on premises where spirits could not be sold, and consequently where there would be no temptation to drink them. The result was the passing of the Beer House Act of 1830, which allowed anyone to take out a licence, at a very low duty, and sell beer. The result was appalling. Drunkenness increased in every direction to an alarming extent. The New Parliament elected under the Reform Act of 1832 appointed an exceptionally strong Committee to inquire into and report upon the evil. They did so in 1834 in one of the strongest Reports on the liquor trade ever issued. Restrictions were imposed, but from that day to this, in spite of the many Acts of Parliament which have been passed with reference to them, the beer-houses of England and Wales have been one of the most undesirable branches of the liquor trade, and a constant source of difficulty to licensing justices and licensing reformers.

Thirty years later, in spite of the warning experience of the beer-houses, the same idea (in principle) found expression in the deplorable wine and grocers' licence legislation of Mr. Gladstone in 1860 and 1861. The theory was that if opportunities were provided for obtaining a glass of wine

at confectioners' shops, and if other alcoholic beverages could be obtained in bottle from grocers and other shops for consumption at home, many people would refrain from going to public-houses and would avoid the temptations to remain there and drink. The result, as in the case of the beer-houses, was not a diminution but an increase in the consumption of alcoholic liquors, and the increase in drinking among women, which has been one of the most regrettable features of the last fifty years.

It may be said, "But surely the substitution of beer and light wines for spirits would be a distinct gain?" Probably it would if the only result of the change was that those who formerly drank spirits turned to beer and wine, and drank no more of them than they previously did of spirits. But that is not what happens. In the case both of the beer-houses and of the wine and grocers' licences, they were additional facilities and temptations. It was not a case of closing existing fully licensed houses and opening these other licensed premises in their place, but of adding tens of thousands of liquor-selling establishments to those already existing. To imagine that sobriety would be promoted by enormously increasing the number of liquor-selling shops, at many of which drink could be obtained for home consumption under appearances of respectability and secrecy which were certain to be very tempting to many people who would have shrunk from entering a public bar, was a most extraordinary delusion; and results proved it to be a disastrous one.

PUBLIC-HOUSES EXIST TO SELL INTOXICANTS

The suggestion which finds favour in some quarters now, namely, that public-houses should be encouraged to develop the refreshment and social side, and should be so altered and extended that people who will not now go to

them would be induced to use them to obtain refreshments and spend a leisure hour, is equally mistaken. It would almost certainly not reduce drinking in public-houses by a single pint, but it probably would induce a very large number of people who seldom, or never, enter these places now, to frequent them and spend time there, with the inevitable result that the consumption of intoxicants would be largely increased. Publicans and brewers know this very well, and they warmly welcome and support the fallacy.

It should be clearly recognized that, broadly speaking, the consumption of alcoholic liquors falls into two categories: (1) drinking at meals, and (2) drinking between meals without anything of the nature of food being taken with it. Taking some kind of liquid as a beverage with meals appears to be something like a universal practice of mankind. Drinking between meals, apart from exceptional conditions of exhaustion or heat, is practically confined to the use of intoxicants. It is really a habit which is acquired in connexion with alcoholic liquor, and is indeed an alcoholic habit. The great distinction between these two classes of drinking is that those who drink intoxicants with their meals require some other beverage then if they cannot have, or do not take alcohol, and those who seldom or never take alcoholic liquors with their meals do, as a rule, require some other beverage; but those who drink intoxicants at other times than at meals do not want, and do not take anything else if they cannot have or do not take alcohol; and those who do not take alcoholic liquor between meals and those who do not take it at any time, do not require and do not drink anything else between meals. Those who drink intoxicants at other than meal times do not then want "refreshments" in the ordinary sense of the term: they do not want food and drink, they do not even

want a beverage other than an alcoholic one. They want what they call "a drink," and by "a drink" they mean a glass of intoxicating liquor and nothing else, and if they do not take, or cannot have that, they do not want anything else.

The bearing of this upon the legislative and constructive aspect of the temperance problem is very important. It means, and it is the simple fact, that all ideas that, apart from meals, there is a demand for refreshments, other than alcoholic liquors, and that a sufficient revenue could be derived from the sale of them to render the financing of people's palaces, working men's clubs, "public-houses without the drink," and similar enterprises practicable and easy, are a delusion. The vast majority of the public-houses and beer-houses of this country exist for the sale of drink, and of drink only. If they ceased to sell drink, they could not and would not be kept open for a single week. Only a very small proportion of them could live out of any trade in ordinary refreshments and non-intoxicants that they could develop. Such trade as there is in that direction is largely met by others. The public-houses of the present time are almost entirely owned or controlled by brewers, whose only interest in them is to maintain an outlet for the output of their breweries. Unless these places can sell beer in considerable quantities, the brewers who have put their capital into them have no use for them, and all devices for supplying other articles and attracting other persons are of no interest to them, unless and except in so far as they will promote and increase the consumption of beer.

The truth is that the ordinary publican's and beer-housekeeper's trade is almost entirely an artificially created and an unnecessary one, and if it ceased it would, so far as

the sale of drink goes, leave no void to be filled, and no want to be supplied. Consequently, so long as the present ownership of public-houses continues, nothing would be gained by any process of, so to speak, reconstructing them on the continental café or any other basis, the object of which was to attract to them more and other persons than those who now frequent them. The object aimed at should be to wean people from alcoholic liquors and the places where they are sold, and not to attract more people to it and them.

COUNTER ATTRACTIONS FOR SOCIAL RESORT NEEDED

As a place of resort and for social intercourse, a place where anybody and everybody may, without formality or cost, except the price of a drink, turn in and spend some leisure time, and meet congenial companions, the public-house undoubtedly meets a want and has a place in our social system, and that fact must be recognized and faced if more substantial progress is to be made in the direction of promoting sobriety and reducing the consumption of alcoholic beverages. Apart from and in addition to meeting the requirements of the mere drinker—the man who has acquired an appetite for alcohol and desires to gratify it more or less frequently—public-houses are used very largely by people who turn into them as places where they can easily and cheaply meet their friends, hear the news, and spend their time. It is unfortunate that this natural phase of our social life should be associated with the consumption of alcoholic liquor: but so it is, and the reason is obvious. Such places are not provided at the public expense. Consequently, they must be on a business footing. They must pay those who keep them. The sale of drink provides the means of making them profitable. The same

fact accounts for the spread of working men's clubs in recent years. It has been discovered that if drink be sold in them, they can be run on a small subscription from the members.

If the public-house and the drinking club are to be successfully competed with, some provision must be made for that social intercourse, the desire for which takes so many people to the public-house and the drinking club. My opinion is that what is needed cannot be provided on a commercial footing for those whom it is most important and difficult to wean from drinking surroundings, unless the sale of drink is allowed, and becomes an essential part of the financial basis of the undertaking. As that is precisely what it is necessary to avoid, if the object aimed at is to be achieved, I arrived long ago at the conclusion that the best interests of the nation require that places of indoor resort for the general public should be provided by the community in the same way, and for the same reasons as public parks, gardens, and recreation grounds are provided at the public cost. In this country for at least 250 nights in the year it is either dark or wet at those hours in the evening when working and business people are at liberty. Where are they to go, outside their homes or lodgings, for recreation and social intercourse? It is true that in many places there are free libraries, museums, and art galleries, but even if they are open at night a little of that kind of thing goes a long way after a full day's work. What are wanted are places of the nature of free clubs where men may sit and smoke and talk and play games—draughts, dominoes, chess, cards, billiards—or read the papers. They should be open to the public free, with small charges for the use of cards and the billiard tables. No propaganda, moralizing, or teaching of any kind what-

ever should be allowed in them. People should be made to feel as much at their ease in them as they are in our public parks ; the only regulations should be those which would be necessary to secure good order and the general comfort and convenience. The cost of maintaining such places would not be great, and the social, material, and moral advantages that would result would render them an excellent investment. No intoxicants should be allowed in them, and my own view is that in the great majority of them no refreshments of any kind need be supplied ; I do not think they would be required.

XIII

THE EDUCATIONAL DEVELOPMENT OF NATIONAL SOBRIETY

BY

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READERS of the previous edition of this work and those who peruse the present volume cannot but be impressed by the magnitude of the Drink Problem, and by the variety of aspects from which it may be studied. The recognition of alcohol as an inimical factor in the successful conduct of the present war, as illustrated, on the one hand, by the action of our allies in restricting or eliminating its use ; and, on the other hand, by its influences in producing loss of control, leading to debauchery, cruelty, and lust, among the men of all grades in the ranks of our principal enemy, has created a wide interest in the scientific and practical study of the subject.

THE EVOLUTION OF THE TEMPERANCE MOVEMENT

No social study is more fascinating and productive than that of the Drink Problem and of the measures designed to solve it. A presentation such as this volume seeks to

provide could hardly be considered complete without some description, however brief, of the remarkable movement which a century ago resulted from the national awakening to the evils of intemperance. To review the initiation and evolution of the temperance movement at all adequately would occupy a book no less bulky than the present volume: the following comparatively brief statement of facts, however, may point to still further educational developments by which there may be ultimately reached a higher standard of national sobriety.

The genesis of "temperance education" in its scientific sense may be traced to the action of the medical profession. As far back as 1725 the Royal College of Physicians, with the concurrence of the medical faculty generally, made a public "Remonstrance against the Common Sale of Ardent Spirits". Sixty years later the first treatise embodying the results of specific research was published by Dr. Benjamin Rush, of Philadelphia, under the title of "An Inquiry into the Effects of Ardent Spirits upon the Human Mind and Body".¹ Reprinted in "The Gentleman's Magazine" this treatise was widely read, and made a strong impression upon the thoughtful public in London and throughout Great Britain. The influence it exerted in its country of origin may be traced in the Memorial to the College of Physicians presented in 1790 to the Senate of the United States Congress, deprecating the use of ardent spirits and suggesting their higher taxation. So far simply external action was contemplated and that only against spirit drinking.

Even thus early the advantage of personal abstinence from all alcoholic intoxicants was supported by the evidence

Richardson, Sir B. W.: "Disciples of Æsculapius," Vol. I. London, 1900.

of medical science and the experience of practical workers. In 1776 Dr. Tobias Smollett testified in his "Travels Through France and Italy" that the longer he lived, the more convinced he was that wine and all fermented liquors were pernicious to the human constitution, and that for the preservation of health and "exhilaration of spirits" there was no beverage comparable with simple water: an opinion of great force, because nobody could call the genial doctor an ascetic! Later, in 1804, Dr. Thomas Beddoes declared: "Beer is a poisonous beverage; wine strengthens neither body nor mind; the true place for strong drink is on the apothecary's shelf". Evidence similar to these had accumulated during the eighteenth century from the clinical observation and quite incidental research of individual practitioners whose names have mostly lapsed from memory. Many of these pioneers of scientific truth lived more or less isolated lives in remote villages and provincial towns, but the names of some are still familiar to those acquainted with the literature of general science and medicine and figure in the current directories.¹ A considerable body of medical opinion as to the use of alcohol in health and disease was thus available for the enlightenment of the public at the beginning of the nineteenth century, when in reality was commenced "the educational development of national sobriety".

THE COMMENCEMENT OF PRACTICAL MEASURES

The ideas which had germinated during the first tri-section of the last century in the minds of a large body of the laity, with many clerical and medical adherents who were concerned at the terrible prevalence of intemperance,

¹ As George Cheyne, Erasmus Darwin, A. Fothergill, Benjamin Pugh, Thomas Trotter.

in 1829 expanded into action, and were almost simultaneously vitalized into societies in the three Kingdoms. These were encouraged by members of the Royal House, the Episcopal Bench, Peers and Commoners and leaders in all classes of society, their remedy for intemperance being the elimination of spirit drinking; ale and wine being then deemed practically innocuous. Conviction derived from actual experience soon led some experimenters in complete abstinence to advocate its general adoption; then came the parting of the ways; some even of the most earnest founders of the first "temperance" societies being left behind in the new departure.

So logical did the total-abstinent position appear to its advocates that it is not surprising to find that most of the leaders of the "temperance" movement of 1829 were in 1832 advocating, and their followers adopting, the more drastic view. This was particularly the case in Scotland, where among the principal promoters of the change in the numerous societies which had been formed were Mr. John Dunlop, a hard-headed merchant of Greenock, and Mr. William Collins, the founder of the well-known educational publishing firm. The former was a philosopher as well as a manufacturer, and author of a remarkable treatise on "The Philosophy of the Drinking Usages," which he contributed to the discussion of the principles underlying the movement, and his influence told not only north of the Tweed, but in England. Mr. Collins' vogue was more on the platform, although he early advocated the new reform in the penny popular periodicals of which he was a pioneer. To these men may properly be ascribed the proud privilege of laying the foundations of the education of the people in temperance principles and practice. The direct fruit of their labours may be traced in the establish-

ment of societies throughout England and eventually in London. These organisations were originally only "anti-spirit," but as the practice of abstinence increased they became "anti-alcohol" in regard to the use of intoxicants in all beverage forms. The first society organized on the latter basis was formed on 1 September, 1832, by Mr. Joseph Livesey, who with his six colleagues became famous in temperance history as "The Seven Men of Preston".¹ The "Father of Teetotalism," as Mr. Livesey was often called, exerted great influence by the delivery and circulation of his celebrated "Malt Liquor" lecture. Other educational exponents who had been led to a study of the philosophy and science of the subject were Mr. John Cassell, the founder of the famous publishing house—"La Belle Sauvage," and Mr. Frederick Richard Lees, Ph.D., whose writings became the source of most of the direct teaching of the period.² The seed thus sown, and no doubt fertilized by the persuasive influence of such missionaries as Father Mathew, produced by the middle of the nineteenth century some active sense of responsibility among the people; much error and prejudice being dispelled by the light of progressive science.

MEDICAL MANIFESTOS RELATING TO ALCOHOL AND ALCOHOLISM

Probably the most influential instrument in affecting the new movement was the issue of an important series of manifestos which, extending to national dimensions,

¹ The original pledge is in the possession of the Y.M.C.A. National Council.

² Dr. Lees received a partial medical training; his works extend to forty volumes, and practically contain the whole philosophy and physiology of abstinence as known to his day.

periodically marked the advancing stages of development in scientific knowledge and medical opinion upon alcohol. The first English society, formed in Bradford, is notable for producing the earliest of the Medical Declarations against spirits in 1830; it was signed by *all* the local practitioners, led by Mr. Thomas Beaumont, M.R.C.S., whose name frequently recurs in the literature of the movement.¹ Further declarations soon followed; one in Cheltenham having twenty-six and another in Gloucester with sixteen names, while a third in Brighton was signed by eleven physicians and thirty-one surgeons. A remarkable declaration issued in 1839 was signed by seventy-nine eminent members of the Medical Faculty in London, and characterized as "altogether erroneous" the opinion "that the habitual use of some portion of alcoholic drink, as wine, beer, or spirit, is beneficial to health, and even necessary to those subjected to habitual labour".² Similar evidence was made public in numerous provincial towns, mainly through the labours of Mr. John Dunlop, who in 1847 issued his *magnum opus* in the form of a Declaration "that total and universal abstinence from intoxicating drinks of all kinds would greatly conduce to the health, the happiness, and prosperity of the human race," to which more than a thousand medical practitioners in the United Kingdom and India, including many of the highest distinction in the profession, had appended their names.

¹ The best-known pioneers of medical abstinence at this period included Drs. R. B. Grindrod and John Snow, and Messrs. J. Fothergill, J. Higginbottom, F.R.S., Julius Jeffreys and Henry Mudge, surgeons.

² Among the signatories were Dr. W. F. Chambers and Sir James Clark, Physicians, and Mr. B. Travers, F.R.S., Surg.-Extraordinary to the Queen; Sir Benjamin Brodie, Mr. Bransby Cooper, F.R.S., Professor R. Quain, and Dr. Marshall Hall.

In reviewing the contributory influences more or less responsible for such a conclusion on the part of so many medical men, two particularly interesting incidents may be mentioned: As far back as in 1833 Dr. William Beaumont, surgeon in the United States Army, published his "Experiment and Observation on the Gastric Juice, and the Physiology of Digestion," relating to the remarkable case of Alexis St. Martin, through an open wound in whose stomach the effects of the gastric juice on various substances introduced were observed. Dr. Beaumont found that the free use of any alcoholic liquors produced morbid changes in the walls of the stomach though the patient was not conscious of them. This case provided material for controversy and discussion for many years. It is interesting to note that Dr. Beaumont thus early described all fermented and distilled liquors as "narcotics".

The year 1840 is notable for a practical protest on the part of a young Quaker, Mr. Robert Warner, which has had far-reaching consequences. Desiring to insure his life, he could find no office to accept him except at an exorbitant premium because he was a total abstainer from alcoholic drinks. Being a young man of nerve and having the courage of his convictions, Mr. Warner with others of like mind founded the first Temperance Life office, whose records with those of contemporary competitors have long since destroyed the long-established delusion that alcoholic liquors tended to prolong life and that abstinence was in danger of bringing one to a premature grave.¹

The fifth decade of the last century was a period of much fertility in temperance reform. The Great Exhibi-

¹ Consult Reports of the United Kingdom Temperance and General, the Sceptre, the Abstainers' and General, and the Scottish Temperance Offices. See Chapter V of this work.

tion in the Crystal Palace in Hyde Park was successfully utilized for purposes of temperance propaganda. The Band of Hope Movement early gave great promise of practical developments. The formulation of a demand for the "total and immediate suppression of the liquor traffic," which received encouragement from the enactment of total Sunday closing for Scotland, indicated the legislative objective of many. Not a few leaders distinguished in varied spheres of public enterprise were first brought into connexion with the temperance movement by the eloquence of Mr. J. B. Gough, the famous Anglo-American orator, on his first return to this country. The revelations regarding the prevalence of drinking in the Crimea, by Dr. Russell of "The Times," and the intemperate conduct of some of the troops at home led to the commencement of active temperance work in the Army. About this time also the clerical profession, following the lead of medicine, issued a Ministerial Declaration. An encouraging circular addressed to temperance societies by four distinguished medical men led to the publication, in "The Times" of 9 May, 1859, of a Medical Declaration, signed by over 2000 members of the profession, and this naturally created much public interest in the hygienic and medico-sociological aspects of the subject.¹

Ever since the inception of the idea of abstinence from alcoholics the acceptance of the principles involved has

¹ Among the signatories were the Physician-Gen. R.N., Sir W. Burnett, M.D., the Director-Gen. A.M.D., Sir J. McGrigor, Bt., M.D., and the following other Fellows of the Royal Society: Dr. B. G. Babington, Mr. A. Billing, Mr. J. Bostock, Dr. R. Bright, Sir B. C. Brodie, Dr. W. B. Carpenter, Sir J. Clark, M.D., Dr. Copland, Dr. A. Farr, Sir J. Forbes, M.D., Sir H. Holland, M.D., Dr. J. Pereira, Dr. W. Prout, and Dr. P. Compton.

been materially advanced by opposition which has arisen in defence of vested interests or from prejudice dependent on deficient knowledge. At no time was this so emphatically the case as in the few years preceding the Exhibition of 1862, from which event may be dated not only a commercial but an intellectual revival. The leading reviews opened their pages to a critical controversy between different schools of scientific thought, and thus public discussion of the subject brought about a remarkable change in the attitude towards alcohol of the average medical practitioner, *malgré lui*. In "Blackwood's Magazine," the "Edinburgh Review," Fraser's Journal," the "National Review," as well as in many weekly periodicals, numerous distinguished medical men and others expressed opposing views all tending greatly to the elucidation of disputed points and to the arousing of interest and a demand for information on the part of the public. Thus the arresting opinions of individual investigators led to the germination of a spirit of research in the medical profession, albeit actuated alternatively by altruistic and antagonistic motives!

THE INFLUENCE OF PARLIAMENTARY INQUIRIES

Concurrently with the evolution of medical opinion various factors contributed to the arrest of public attention; none more important perhaps than the parliamentary inquiries of which no less than a dozen had been held before 1862. The Select Committee on Public-Houses of 1855 inspired Mr. Charles Buxton, M.P., himself engaged in the manufacture of alcoholic intoxicants, to write a remarkable article in the "North British Review" on "How to Stop Drunkenness" in which he declared that "the struggle of the school, the library, and the Church

all united against the beer-house and the gin palace, is but one development of the War between Heaven and Hell". Evidence which could produce such a statement as this naturally affected those who were concerned with the welfare of the industrial classes. No more significant conclusion in this connexion could have been stated than that of Mr. Richard Cobden, M.P., who wrote in 1853: "Every day's experience tends more and more to confirm me in my opinion that the temperance cause lies at the foundation of all social and political reform".

THE FOOD-VALUE OF ALCOHOL

But the fallacy that "beer is liquid bread" assiduously preached to the ignorant public—as indeed it still is in certain current advertisements—attached considerable importance to a discussion as to the food-value of alcohol, emanating from the publication of the researches of MM. Lallemand, Perrin, and Duroy into the rôle of alcohol in the human organism. This record of a long series of experiments appeared to lead to conclusions that ran counter to the previously accepted theory of Liebig, and which were controverted by Drs. Anstie, Thuddicum, and Dupré who held that the alcohol eliminated unchanged did not represent more than a small proportion of that imbibed: a position taken later by Atwater.¹ The "Westminster Review" for January, 1861, published an article by Dr. W. B. Carpenter and renounced its opinion of five years previously that alcohol was a food. At the Society of Arts, Dr. Edward Smith read a paper on "Alcohols" in further illustration of this topic, and in a valuable general work on "Food and its Digestion," by Dr. W.

¹ See Report of the "Committee of Fifty," United States, 1899.

Brinton of St. Thomas's Hospital, it was declared that men employed in arduous mental work "would generally concur in the statement that a single glass of wine will often suffice to take the edge off both mind and body, and to reduce their capacity to something below what is relatively their perfection of work". Upon this keynote the progressive development of the scientific investigation of alcohol may be said to have hereafter proceeded.

EDUCATIONAL EFFORTS

The year 1862 marked the advent of a remarkable progression in the educational and rational statement of the case against alcohol. The fundamental bases of the movement were reviewed and consolidated at a National Temperance Congress which dealt with the Religious, Industrial, Social, Economic, and Legislative aspects of the question, as well as with the "Medical and Dietetic Use of Intoxicating Liquors" and "Temperance in Relation to the Young". This congress initiated an important series, which included international and other national gatherings which periodically indicated the extent to which the truth about intoxicants was permeating the mind of the world. It is impossible to follow the gradual development in the Churches and the City, in Society and among working people, in the Press and in Parliament, of an intelligent and conscientious "Anti-alcohol" conviction, which has led to a vast and varied endeavour to fight alcohol as an "Enemy of the Race". Foremost and essentially fundamental in the factors making for such endeavours are the correlated movements of medical research and scientific statement, and the teaching of temperance in schools and colleges, all of which have proceeded concurrently from this memorable period.

An indication of the attitude of the leaders of the medical profession in London in 1862 is furnished by the fact that but fifteen men accepted an invitation to meet Professor Miller¹ of Edinburgh with a view to a more organized investigation of alcohol, and it may be added the Committee of medical men then appointed never manifested sufficient interest in their subject to present a report! The present writer is able to trace from his own relative and personal knowledge the truly remarkable developments since then. Medical experience given from time to time during "the sixties," at public and private conferences, and the reaction from Dr. Todd's deluge administration of alcohol weakened confidence in it as a "universal panacea". When in 1869 the first of the now well-known Breakfasts held in connexion with the annual meetings of the British Medical Association was given at Leeds no less than 150 members attended, a dozen of whom sustained a significant discussion, only three of them being abstainers. The evidence accumulated during the past half-century has been largely the product of these annual meetings of representative medical men and women, either by statement thereat or inspiration therefrom. The quarterly publication for twenty-one years of the "Medical Temperance Journal" provided a means to further study and inquiry. One of the early articles in its pages having attracted the attention of Mr. Ernest Hart, the editor of the "British Medical Journal," led to his suggesting to Mr. Robert Rae the "Medical Declaration" of 1871 in the preparation of which Professor Parkes of Netley, who wrote the first draft, the Presidents of both the Royal Colleges, Sir

¹ Dr. James Miller, Professor of Anatomy in the University of Edinburgh, author of "Alcohol: its Place and Power," and "Nephralism".

Thomas Watson and Sir James Paget co-operated.¹ This particular Declaration was chiefly distinguished by a special reference to the use of alcohol in disease, and by the deliberate expression of an opinion that its administration should be carefully restricted as to dose and duration, by nearly 300 leading London practitioners, many of whom were members of the staffs of the principal hospitals of the Metropolis. The inevitable controversy following its publication in the medical and general press, and its circulation to every practitioner on the medical register, witnessed to the great interest aroused. From this period "geometrical progression" in the scientific study of alcohol may be traced in the pages of the "*Lancet*," the "*British Medical Journal*," and other scientific and professional reviews, as well as in those specifically devoted to the subject.² The encouragement of research by the British Association; the discussion of the economic as well as the medical aspect of alcoholism at its Congresses, and at those of the Social Science Association; lectures before the Hunterian and Harveian Societies; the institution of the London Temperance Hospital,³ with Dr. James Edmunds and Dr. J. J. Ridge among its first medical officers, all contributed to the enlightenment of both the profession and the public, and carried forward the movement towards national sobriety.

To the work of Dr. Norman Kerr⁴ in regard to the

¹ The original hangs in the office of the writer of this chapter, and contains the 30 principal signatures secured by his father.

² These include the "*Medical Temperance Review*," founded by the late Dr. J. J. Ridge; the "*British Journal of Inebriety*," and the "*National Temperance Quarterly*."

³ Opened in 1873; consult annual reports for results.

⁴ Dr. Norman Kerr founded the society now known as the Society for the Study of Inebriety in 1884, and also the Inebriate Homes' Association; he was the author of "*Narcomania*," etc.

study of inebriety, and to that of Dr. (afterwards Sir) Benjamin Ward Richardson on alcohol, modern medical research owes a great deal. The monumental treatise of the former and the Cantor Lectures of the latter, showing "The Results of Researches on Alcohol," encouraged an increased investigation into the action of this "instrument of precision," as Richardson designated it. But these investigations did not lead in all cases, as with Kerr and Richardson, to personal abstinence, and even to-day after more than thirty years an article by Sir James Paget in the "Contemporary Review," expressing views rather adverse to Total Abstinence is occasionally quoted by some, oblivious to the vast change in medical science since those elementary days of the science and art of the prevention and arrest of disease. The work of Atwater, Bertholet, Brouardel, Kraepelin, Laitinen, Rivers, and others, and the remarkable report of the Inter-Departmental Committee on Physical Deterioration,¹ which, upon the evidence of some five-sixths of its witnesses, placed alcoholism second only to urbanization as a cause of deterioration, afford ample evidence as to the progress of a scientific study of alcohol and alcoholism. Further proof of this revolution in thought was evidenced in the presentation to the National Education Authorities, of a memorial signed by nearly 15,000 members of the medical profession, calling for the inclusion in the school curriculum of lessons in hygiene with elementary teaching regarding temperance.²

¹ Major W. McAdam Eccles, R.A.M.C. (T.F.), M.S., F.R.C.S., and Dr. R. Armstrong-Jones gave evidence on behalf of the National Temperance League's expert Medical Committee.

² See Chapter XII in previous edition of this work by Dr. Claude Taylor who was the Hon. Secretary of the Petition Committee above referred to.

INSTRUCTION OF THE YOUNG

Thus medical and educational science converge after having proceeded for long in close parallel and have now become a correlated factor in temperance reform. Mr. William Collins in 1830 suggested teaching temperance in the schools, but it was twenty years before Mr. John Hope, a pioneer of juvenile temperance work, instituted a weekly visitation of the Edinburgh Schools. Five years later another Edinburgh citizen, Mr. Thomas Knox, J.P., an advanced educationist of wide experience, wrote a series of letters to a progressive Glasgow newspaper, the "Commonwealth," of which his friend Mr. Robert Rae was editor-proprietor, laying down the lines upon which the teaching in schools should proceed. His scheme was put into practical operation in 1862, when Mr. Rae removed to London and arranged for illustrated lessons in the schools by the first chemical lecturer on temperance. Within ten years every grade of educational institution in the country had been visited; thus was initiated the influential organized operations which continue under various auspices to this day.¹

The essential factor in the successful prosecution of this work is the co-operation of the teacher. This was primarily secured by local conferences, the visitation of training colleges, and competitive examinations for students and pupil teachers in which the prizes were college entrance fees and books. Increasing interest was obtained and has been maintained since 1879 by the annual breakfasts with the National Union of Teachers at their Easter Parliament. The publication of textbooks has greatly aided;

¹ National Temperance League, 1862; United Kingdom Band of Hope Union, 1877; the Church of England Temperance Society; the Royal Army Temperance Association, etc.

Richardson's "Lesson Book" being perhaps the most influential inasmuch as its introduction to Holland, the United States, Canada, Australia, New Zealand, and South Africa initiated the systems of Temperance Education now established in those countries.¹ The great petition from the profession combined with the recommendation of the Inter-Departmental Committee on Physical Deterioration, drew from the Board of Education a series of instructions to teachers and students, culminating in "The Syllabus of Lessons on 'Temperance' for Scholars attending public Elementary Schools". This was first issued in 1909, and it is stated to have been put into operation by some two-thirds of the Local Authorities in England and Wales. Several agencies representative of medical, educational, and temperance interests are at work to still further popularize the use of the Syllabus.²

THE EDUCATION OF THE PUBLIC

The gradual enlightenment and evolution from prejudice to perception which have characterized modern science and education in regard to alcohol, constitute the prime factor in the public recognition of an existent necessity for further measures to secure a higher standard of sobriety. Most people, however, only reach the feeling that "something should be done," and fall short of personal action; only a minority respond to a call for abstinence. Many, moreover, ascribe prevalent comparative sobriety to quite

¹ For list of current textbooks application may be permitted to the writer at Paternoster House, 34 Paternoster Row, London, E.C.

² The National Temperance League Science and Education Committee (which includes representatives of the British Medical Temperance Association and the Society for the Study of Inebriety) and the Temperance Collegiate Association, with its Examination Board.

other influences than the temperance reform, in fact to "causes which were unexpected and which had worked quite unintentionally". But as is clearly shown the close connexion between medical science and temperance education has been and is complete.

Every temperance organisation without exception may claim its share in this educational enterprise, in which medical evidence has been supplemented by that derived from logic and reason, economics and sociology, religion and morals, and by which all classes and ages of the population have been influenced in the direction of sobriety. Environment indicates expectations to some extent, and it is interesting to observe that the annual returns of recruiting for some years before the war showed that about 60 per cent of the village lads presenting themselves were Band of Hope members. The New Army shows a high standard of sobriety among the more educated town dwellers, but a great body of the wage-earning class are still addicted to "convivial" and "industrial" drinking.

From this classification of drinking the "worker" is obviously the immediate educational objective, for while "convivial" drinking in varied degree is common to all classes, the obsession in favour of "industrial" drinking is almost entirely confined to the wage-earners.¹ The main reason for this is the inherent natural tendency to be satisfied with things as they are, a condition due in great measure to the use of alcohol, which renders a man "happy in the mire because he is not conscious of the slough,"² and prevents him from developing any adequate sense of responsibility. He is at once the product as well as the

¹ Sullivan, W. C. : "Alcoholism, a Chapter in Social Pathology".

² See Dr. Claude Taylor's article as Chapter XII, p. 224, of the previous edition of this work.

producer of the ever-revolving vicious circle in which the "child accustomed to witness the use of intoxicants is likely to have it rooted in his brain that they are at least inevitable and as such to be accepted, and, as far as may be, enjoyed".¹ The problem, therefore, must be primarily attacked by seeking to "cut off the entail". Each new generation calls for a fresh endeavour to raise the standard of life; the awakening of educational authorities to the urgency of anti-alcohol teaching, and especially of instructing the leaving scholar on the dangers of adolescence, is of most importance at the moment. Concurrent influence in the home by the school medical officer and nurse, the care committee and the municipal health visitor, can exercise some salutary control and thus meet the economic and educational pressure brought to bear upon the "man at work".

The circumstances of the present time of necessity emphasize all the factors instrumental in the production and maintenance of national inefficiency, and the "industrial" drinker has had impressed upon him by authority that he is a menace to the State. The restrictive measures now being adopted may be expected to produce some remarkable evidence, probably showing at the same time the equation of "convivial" to "industrial" consumption, and enforcing the conclusion that the elimination of alcohol from the individual is essential to industrial, environmental, and intellectual efficiency. The example and precept of abstaining leaders of organized labour² have done something to influence the thinking portion of industry among whom the new mentality derived from

¹ See note 2 on previous page.

The Trade Union and Labour Officials' Temperance Fellowship promotes personal abstinence and the holding of society meetings apart from licensed premises.

advanced elementary education has begun to tell. Indeed the moral and business superiority of the abstainer is generally admitted in his almost universal appointment to office in trade societies, but what is urgently required is a due recognition of the true rôle of alcohol in hindering industrial and social betterment.¹ However well-informed the modern school of public service may be upon the personal aspect of the drink problem, its attitude towards the temperance movement is that it "has been so successful that it has brought us to a point where its direct attack is ceasing to be effective and the more indirect methods of general social reform are likely to do more"; a conclusion vitiated by practical experience, as opposed to theoretical confusion between co-incidence and causation, unless direct anti-alcohol attack be included in general social reform.

THE LEAD OF THE MEDICAL PROFESSION

Nothing short of a steady, co-ordinated endeavour by the various agencies promoting public health, social welfare, and temperance will produce the desiderated dynamic to awaken an interest in themselves on the part of the new democracy which is slowly evolving from a servile state, due in great measure to ignorance and apathy dependent on an alcoholic narcosis. There must be a closer association between educational temperance organisations and those operating in matters of sanitation and public health,² and the public poster and the brief booklet, with the simple statement in the pointed paragraph, should be exhibited and circulated under these joint auspices and

¹ Blaiklock, George : "The Alcohol Factor in Social Conditions".

² The National Temperance League, e.g. is associated with the Royal Sanitary Institute and the British Institute of Public Health.

in co-operation with the National Insurance and Municipal Health Committees. Authoritative opinion from the medical profession is still needed to supply the material for such suggested propaganda. There is also a call for increased research regarding numerous disputable points. The so-called physiological aspect of the problem appears to be giving place in some measure to a biological and psychological study of the subject,¹ but the results of all, together with a clear statement as to pathological facts, afford evidence which, stated in simple form, may produce such an impression upon our working classes that they may rise to a sense of their high destiny in redeeming the race. It is hardly likely that ever again will even fifteen signatures be found forthcoming among members of the medical profession for a pro-alcohol manifesto.² In the near future it may be hoped that deficient data will not lead to defective deductions as to the influence of alcohol on offspring,³ for parenthood must learn something of the part that abstinence plays in the persistence and efficiency of a people. In the last resort, as it did in the first instance, it rests with the medical profession to lead in the Educational Development of National Sobriety, and in accordance with its traditions it will deem no sacrifice of personal pleasure, or of time devoted to investigation too great, if it can thus serve the highest interests of the State.

¹ See articles by Sir Wm. Collins on "The Ethics and Law of Drug and Alcoholic Addiction," "British Journal of Inebriety," January, 1916, and by Major Leonard Darwin on "Alcoholism and Eugenics" in "British Journal of Inebriety," October, 1915, and by Dr. H. Crichton Miller on "The Psychology of Alcoholism" in "National Temperance Quarterly," Autumn No., 1915.

² See "Lancet," March 30, 1907.

³ Consult Galton Research Laboratory Memoir on Parental Alcoholism, 1910.

XIV

THE ARREST OF ALCOHOLISM

BY

THE EDITOR

THE STUDY OF THE PROBLEM

WAR has forced the Drink Problem into the forefront. It is one of the most momentous and complicated of the numerous perplexing national questions which demand consideration. For long thoughtful and far-seeing minds have insisted on the importance of alcohol and alcoholism as deranging factors, but the majority have neglected or derided or denied all warnings. It has been left to these days of unexampled stress and strain for the nation to realize the seriousness of the menace within its own dominions. The fundamental facts and governing principles regarding alcoholism and associated morbid states have for many years been presented with scientific precision, but the community has paid scant heed. Now the great adventure of war, with all its circumstances, conditions, and consequences has amply confirmed the conclusions of scientific investigators. And in the haste to arrest and alleviate ills incidental to alcoholism there is danger of neglecting, or at all events of imperfectly ap-

preciating, the basal facts and fundamental principles which should guide and govern rational action. The Drink Problem must be studied in its biological and psychological aspects as well as investigated in its sociological bearings.

A study of the preceding chapters of this work will have convinced readers of the complex character of the question and have proved that no single and all-embracing solution is at present possible. It is indeed doubtful if we shall ever attain to any complete and satisfactory deliverance from the bondage of this self-imposed yoke. Man having discovered means for the production of intoxicants, and having for countless generations possessed a desire, often insistent and uncontrollable, for agents which he believes increases his sense of well-being and adds to his health and happiness, it seems unlikely that he will be ready to forgo an indulgence in the dangerous products of his ingenuity and applied knowledge. Alcoholism is an evil the first beginnings of which are lost in the mist of prehistoric days; and with human characteristics, propensities, and opportunities as they now exist, alcoholism will in all probability continue to exist as a problem which baffles the astutest thinkers and resists the attacks of the most energetic of social reformers.

Why do men desire intoxicating drinks? Many answers have been forthcoming, but we are still far from any complete and adequate explanation. The Drink Problem in its manifold ramifications is inextricably interwoven with the many ills which oppose and impede human progress. It is indissolubly connected with numerous forms of moral wrong, closely associated with much of mental deficiency and bodily enfeeblement, and has close relations with many of our most conspicuous social dis-

abilities. From the use of alcohol arise a considerable number of the morbid manifestations which are grouped under the numerous headings of individual and collective depravity. Alcoholism must be viewed as a morbid condition which is both cause and effect of much of the physical incompetence and psychological enfeeblement and derangement which exists in all ranks of society. In short, alcoholism is either directly or indirectly connected with most, if not almost all, of the perplexities which are encountered in the tangled web of the life of to-day. Directly, or by its concomitants and consequences, alcoholism is answerable for an immense amount and altogether incalculable measure of personal suffering, domestic misery, and national loss.

It is clear that while we speak of the "Drink Problem" we are not thereby to denote an entirely unique and isolated question which is to be studied according to exceptional methods and requiring the results of researches to be expressed in unusual terms. The Drink Problem is to be regarded and investigated as but a part of the much more comprehensive and complicated problem which relates to man in all his varied and multitudinous medico-sociological aspects. The alcohol question is one which is to be considered and dealt with by medical investigators and social reformers of every school of thought and action, but in all the spirit, purpose, and methods of science must be evident and should control.¹

¹ Reference may here be made to the aims and work of a strictly scientific body devoted to the study of alcohol and alcoholism: The Society for the Study of Inebriety was founded in 1884 "to investigate the various causes of inebriety and to educate the professional and public mind to a recognition of the physical aspect of habitual intemperance". The Society does not seek in any way to restrict the personal attitude of its members to alcohol. It exists to encourage

At the present time in our national history it is of the greatest importance that the medico-sociological aspects of the Drink Problem should be fully studied by all classes of social workers, and particularly by those who seek by educational, religious, and legislative measures, to deal with a widespread, powerful, and deadly foe to the conservation, expansion, and effectiveness of our national forces. The personal opinion and example of His Majesty the King, and many of His Majesty's Ministers, approved and followed by leaders in all ranks, and supported by an immense number of men and women in every class of society, have lifted this question high above the level of mere disputation, and made it one to be viewed and dealt with according to the dictates of an understanding patriotism.

THE SCIENTIFIC BASIS OF TEMPERANCE REFORM

Thomas de Quincey, long years ago, when that branch of social reform which is conveniently designated "The Temperance Movement" was in its infancy, described it as "the most remarkable instance of a combined move-

the systematic study of inebriety and the investigation of all forms of alcoholism. Meetings for discussion are held in the Rooms of the Medical Society of London, 11 Chandos Street, Cavendish Square, London, W., on the afternoons of the second Tuesday in January, April, July, and October. Qualified Medical Practitioners are admitted to the Society as Members, and others interested in the work of the Society are eligible for election as Associates. A copy of "The British Journal of Inebriety" is sent quarterly, post free, to every Member and Associate. The Journal contains all Papers read at the quarterly meetings of the Society, and many other communications dealing with alcohol and alcoholism. Special attention is given to the department of Reviews and Notices of Books on all phases of the Alcohol Problem and allied questions. The inclusive annual subscription is merely a nominal one of 5s.

ment in society which history perhaps will be summoned to notice". The progress of this awakening has been little less than phenomenal. The necessarily rough and ready methods of the pioneer have cleared the ground of many obstacles and useless encumbrances. Evidence bearing on alcohol and alcoholism has been rapidly accumulating during recent years, and observers and investigators in all parts of the world have furnished valuable contributions to the comprehensive study of the Drink Problem. During days when the visionary, the idealist, the materialist, the faddist, the pessimist, and eccentrics of every school are adding to the babel of would-be advisers, it is essential that the rational reformer should be content to base his lines of action on sure foundations. Only by patience, self-restraint, and a thorough appreciation of the relative value of all ways and means to the desired ends can satisfactory and abiding results be secured. While the greatest possible freedom should be permitted for the conduct of all experiments aiming at reasonable reform, and while all excursions into new fields of investigation are to be accorded encouragement and unfettered opportunities, it is most desirable to restrain a futile playing with grave issues, and a wise watchfulness is necessary to prevent the introduction of measures which are likely to stand in the way of further advance.

The principles of hygiene as applied to the maintenance of healthy life are now being extended to the care and control and general management of those who are the subjects of an innate physical or mental defectiveness, and all who have acquired morbid conditions which have led to a departure from normal standards. The results of modern experiments and recent experiences regarding the pharmacological and pathological action of alcohol have

done much to restrict the administration of alcoholic preparations as desirable prophylactics and the ordering of intoxicating agents as medicaments. It does not come within the province of this work to discuss the rôle of alcohol as a drug, but it is very necessary to state definitely that a narcotic such as alcohol, possessing possibilities for the initiation of habits and methods of life which may be productive of infinite evil, should never be self-administered and must only be employed as a therapeutic agent under strict and scientifically directed medical supervision.

THE RATIONAL PROPHYLAXIS OF ALCOHOLISM

It is now generally admitted that "the future of medicine rests far more in hygiene than in therapeutics" (Metchinkoff), and certainly in regard to all forms of medico-sociological reform the truth of the old saying that "prevention is better than cure" is being recognized as scientifically correct and accepted as affording a reliable guide to effective action. This is conspicuously the case in regard to alcoholism. To attempt to arrest the confirmed inebriate in his devolution is to undertake a task fraught with almost insuperable difficulties, requiring unremitting care, inexhaustible patience, and an expenditure of time and money, which, judged by merely apparent results, often-times seems scarcely justified and is indeed in the view of many persons an undesirable interference with the exercise of a natural law whereby the unfit works out his own elimination. To prevent the state of alcoholism with all its attendant disasters is to accomplish an action of the highest value to the individual and the nation.

Rational prophylaxis requires to be scientifically applied at every stage of human development. First and foremost the period of pre-natal life demands protection. During

this period of evolution the unfolding life must be safeguarded from the access of all toxic and deleterious agents and every form of deranging influence.

The widespread prevalence of alcoholism among women, and particularly among those of child-bearing age, raises a question of the utmost national importance and touches the very fount of racial existence. The peril entailed by maternal intemperance has long been recognized. In the Report of the Inter-Department Committee on National Deterioration issued in 1904, the threatening danger was forcibly defined: "The tendency of the evidence was to show that drinking habits among the women of the working classes are certainly growing, with consequences extremely prejudicial to the care of the offspring, not to speak of the possibility of children being born permanently disabled". During recent months in almost all parts of the country there has been abundant evidence that among large numbers of potential and actual mothers gross indulgence in alcohol has prevailed. Actual statistics even when available seem to be of but limited value in expressing the extent and seriousness of the alcoholism which exists among a considerable number of women. No good purpose can be served by discussing in detail in this volume the many and varied causes which have encouraged drinking habits among certain women. The main facts are known to all observant social workers. At a future time the subject must be openly discussed in all its bearings. Sufficient has, however, been stated in this volume to indicate the nature and probable consequences of the peril which threatens us as a people through the alcoholism of large numbers of the women of the nation.¹

¹The subject of "The Influence of Parental Alcoholism upon the Race" is fully discussed in Chapter XV of "Alcohol and the Human

Child life urgently calls for protection from the evils incident to our drinking customs. The coming race is to a great extent being brought up in an alcoholic environment which makes the maintenance of adequate preventive measures extremely difficult.

Parents are slow to realize that alcohol is an inimical agent to all developing life, and that no growing child and no adolescent boy or girl should be permitted access to any form of intoxicating drink. It should be recognized that to certain temperaments and to nervously constituted children, and especially to unstable adolescents, even small amounts of alcohol may arouse inclinations and weaken inhibitory powers which may ultimately lead to habits of dangerous indulgence.

Parents and teachers would do well to pay heed to the wise advice of the late Sir Thomas Clouston in regard to the pernicious practice of providing beer for schoolboys: "I unhesitatingly condemn this practice out and out as being bad for the growing brain at this period, and attended by many future dangers. Beer is not really a food in any proper sense, and it is certainly an unsuitable stimulant for this stage of life. It creates a taste for stronger liquors, too."

The opinion of Dr. Clement Dukes, for long the physician in charge of the health of the boys at Rugby, may also be mentioned: "Alcohol I believe to be unnecessary for boys, and I should like to see it, as is gradually coming to pass, less and less used as an ordinary article of diet. The

Body," by Sir Victor Horsley and Dr. Mary Sturge. Fifth Edition. London, 1915. See also Symposium on the subject in "The British Journal of Inebriety," April, 1911, and various articles by well-known authorities in recent issues of this official journal of the Society for the Study of Inebriety.

animal propensities of boys are quite sufficiently active without the stimulating effect of alcohol, and they are always ready enough for sleep without its sedative action. . . . To enable boys to abandon this needless drink, it is essential that parents and physicians should co-operate with masters. . . . I have never yet found cause to sanction the use of alcohol as an article of diet for boys in health."

It is to be feared that in many girls' schools opportunities are not taken to warn scholars of the dangers inseparable from indulgence in alcohol. There is reason to believe that in some establishments the use of alcohol in some of its most insidious forms and other drugs are exercising an influence making for permanent enslavement.

The alcohol habit is elaborately entrenched. Traditions, social customs, and conventions, business procedures, ceremonial, festive, and national functions, and even religious rites all tend to anchor us to a belief in the efficacy of alcohol. On all hands and among every class ignorance and superstition prevail in regard to the rôle of alcohol.

Many a mature and experienced worker honestly believes that alcohol assists in mental toil and manual labour. War has effectively focussed attention on the effects of drink in deranging and disabling the industrial worker. It is of interest to refer to Dr. W. C. Sullivan's able work which was published in 1906 and dealt with the desirability for statutory limitation of the hour of opening licensed houses: "The greater prevalence of industrial drinking in London as compared with the provinces, and in the latter as compared with Scotland, is probably in a great measure due to the fact that beyond the Border the public-houses are not accessible till 8 a.m., while in the British provinces

they open at 6 a.m., and in the Metropolis at 5 a.m." The experiences of conflict are convincing many who through long years have remained sceptical or regardless respecting the warnings of scientific and educational leaders. The great question of industrial drinking is now being faced, and some progress has been made in dealing with it on rational lines. But the real problem will remain unsolved until the worker realizes that efficiency in industry demands the prophylaxis of alcoholism. Attention is now being focussed on prohibitive and restrictive measures, and such are of course necessary; but it is to be regretted that so little is being accomplished towards educating the industrial classes to a clear understanding of the facts and principles on which measures making for national sobriety should be based. It is inexplicable that so-called Labour Leaders for the most part seem content to remain silent in regard to this question.

In bygone years all citizens more or less partook of intoxicants, and even up to comparatively recent years members of the learned professions and those engaged in intellectual pursuits considered alcohol an essential to effective thought and efficient vocation. Opinions and practices are changing. A rapidly increasing number of men and women engaged in all forms of mental labour are realizing the necessity for rigorously curtailing or abstaining from the use of alcohol while engaged in brain work. Even the generally accepted view that alcohol was desirable if not necessary for the advanced in life, an opinion expressed in the saying that "Wine is the Milk of Old Age," is now being discarded and declared by experts to be "a great and dangerous fallacy".

At every period of life's progress from dawn to sunset, and amidst all the storms and conflicts of human

development, science now testifies that it is of paramount importance to exercise a wise prophylaxis against the insidious and devoluting influence of alcohol.

THE EVOLUTION OF THE ALCOHOLIC

The Drink Problem is a biological problem: this has been fully demonstrated in the early chapters of this work. The problem with all its peculiarities and perplexities must be studied after the manner of the evolutionist. The evolutionary pilgrimage of the race must be borne in mind, and it must not be forgotten that the life of each individual tends to be an epitome of the history of the race. Alcoholism is an ancient evil. In almost all ages known to history and among nearly every variety of people man has hankered after some agent capable of increasing his sense of *bien-être* or likely to secure some measure of detachment from the manifold aches and pains incident to and inseparable from human existence. Alcohol is an agent which, from the very nature of its pharmacological action, in great measure accomplishes these greatly desired ends. Hence at all costs and in the face of almost insurmountable difficulties ways and means have been discovered whereby intoxicating alcoholic drinks can be prepared, stored, distributed, and imbibed. From the remotest ages both civilized and savage races have manufactured and consumed alcoholic beverages. They were used by the ancient Egyptians, and both Greeks and Romans were thoroughly acquainted with the manifestations of inebriety. The Gauls and Germans of bygone times gained a world-wide notoriety for their excesses. And in our own country, from earliest times even to the present day, alcoholism has proved a common cause of individual disaster and national difficulty. Indeed almost

every country seems to have its particular "taste" and special form of intoxicating drink. "In China *manduring* and *fan tsou*; in India, *arak*; in Thibet, *choug*, and in Nubia, *couja* have been made for centuries by causing infusions of rice or other boiled cereals, mixed or not with honey and spices, to ferment. *Palm wine*, *pulqué* of Mexico, *cachaca* of Brazil, *guaruzo* of South America, *mobi* of Virginia, etc., are prepared with the sap of the palm, American aloe, sugar cane, and decoctions of rice or potatoes. In Norway the sap of the birch is fermented; in the Alps an infusion of gentian roots; in the North of Europe they have made for a long time and still make *hydromel* from the honey of bees. Lastly, we know the *keptwi* of the Arabs and the *koumiss* of the Cossacks obtained from the fermented milk of the camel or mare. There is nothing, even to the *kangangtsyjen* made by the Tartars with lamb's flesh, mixed with cooked rice and other vegetables and fermented, which is not used as an alcoholic drink."¹ Such an enumeration is of more than mere biological and antiquarian interest: it indicates the peculiar difficulties that oppose prohibitive and restrictive measures enforced by legislation or exercised by educational influences. It has been suggested that this almost universal practice of making and drinking fermented drinks indicates the existence of an instinctive need; and some have contended that an indulgence in intoxicating liquors has served some purpose in the evolution of the race. Professor G. T. W. Patrick in a recent work conveniently summarizes the situation as follows:—²

¹ Gautier, A.: "Diet and Dietetics," English edition, translated by A. J. Rice, M.D. London, 1906.

² Patrick, G. T. W.: "The Psychology of Relaxation". Boston and New York, 1916.

"The desire for alcohol is common both to civilized and uncivilized man. It tends to increase rather than to decrease with the advance of civilization in spite of vigorous and to some extent successful efforts to restrain it. It has reached an unparalleled degree of intensity at the present time in prosperous communities relatively rich in comforts and luxuries. It is strong, again, in industrial and manufacturing centres among plodding and underpaid labourers. It is somewhat stronger in northern progressive races than among the less progressive southern people. It is particularly characteristic of the adult-male individual, the desire being decidedly less strong in women and children. It is not an appetite in the ordinary sense of the word, as it answers to no inner need of the body so far as is known. To these facts should be added . . . that alcohol apparently adds nothing to either physical or mental efficiency, that it contributes nothing to health or longevity, and does not enhance social well-being."

Dr. Patrick in the work already referred to throws helpful light on the problem by his approach along phylogenetic lines: "Alcohol is stimulating, not directly, for its physiological action is wholly depressive, but indirectly by inhibiting the higher mental processes and setting free the older and more primitive ones. Thus, alcohol appears as a depressant of voluntary attention and effort, of logical associations and abstract reasoning, of foresight and prudence, of anxiety and worry, of modesty and reserve, and the higher sentiments in general, while, on the other hand, it acts indirectly as an excitant, of speech, and laughter, and song; of emotional feeling and expression; of sentimentality; and, in increasing doses, of still older and more basic impulses, such as garrulity, quarrelsomeness, recklessness, immodesty; and finally, of coarseness and criminal

tendencies. Thus, under the progressive influence of alcohol, we see the whole life-history of the race traversed in reverse direction, for the criminal life of to-day represents the normal life of primitive man." This is a picture of the problem which very specially appeals in war days. It indicates clearly that at least to many a lapse into alcoholism is little more than the fulfilment of "an inherent need of mind and body for relaxation" or psychologically stated "the expression of a desire for release from the tension of the strenuous life". War itself is a resort to primitive methods, and in these days of unexampled stress and strain, bodily and mental tension, and persistent demands for unremitting effort, it is easy to understand how many welcome some agent which renders easy a return to elementary states of mind and morals and the adoption of simple manifestations of physical expression.

At all events it is clear that the Drink Problem is indissolubly bound up with the most intricate and mysterious elements in man's make up. It is for the evolutionist to attempt to unfold an adequate explanation for the world-wide existence of alcohol and alcoholism.

A rational study of the Drink Problem must also be based upon a sound foundation of pathology. No exposition of the nature of intemperance, and no forms of enterprise seeking its prevention, amelioration, and arrest can satisfy the critical mind or secure the approval of practical citizens unless there is a clear exposition available of the principles governing the morbid states which we for convenience group under the general designation of alcoholism. The how and why of this morbid state can and must be answered by scientific investigation. The whence and whither of the drunkard's progress may be traced with more or less precision. Clinical experience, experimental

research, observations in the post-mortem room and pathological laboratory have revealed much concerning the physical basis of the evil. Modern methods, psychoanalysis, and psychological inquiry are throwing new light on the morbid mental states of the alcoholic. The far-seeing medico-sociologist recognizes the right of the pathologist and psychologist to probe the drink ill to the uttermost. In the solution of this human problem there can be no sharply defined division into physical and mental, no clear-cut distinctions between bodily disorders and moral delinquencies. The problem must be faced and dissected in all its complex intricacies, and to the pathologist it is given to lift the veil from those derangements and deteriorations, whether transitory or permanent, curable or irremediable which form the material groundwork of the drink curse.

THE RESTORATION OF THE ALCOHOLIC

Man has ever been wont to seek out agents which stimulate or soothe mental activities. The existence of an almost universal longing for alcohol has been claimed by some to be a "natural instinct". This craving for an agent which alters the relation of the Ego to its environment undoubtedly exists, although it varies greatly in different peoples and manifests wide variations in degree in individuals of the same family, community, and race. It is essential that in any serious inquiry into the problem of alcoholism and in all attempts to secure the restoration of the alcoholic the morbid psychology of the individual inebriate be thoroughly investigated. All physical derangements must be detected and as far as possible rectified. A complete study of the case must be made if all ætiological factors are to be recognized and their influence

adequately judged. The paramount importance of these contentions will be admitted by all who have had experience of the almost insuperable difficulties which oftentime oppose measures seeking the restoration of the inebriate and particularly the inebriate woman.

No clear conception of "the public-house difficulty" can ever be arrived at either by would-be temperance reformers or legislators until at least a working knowledge is secured as to the psychology of the man and woman who is the habitual frequenter of the public-house. Those who glibly speak of "temptation" would do well to seek a psychological explanation of its nature. In regard to impressions made upon the senses we do well to remember the action of the law governing the "summation of stimuli". Further, no discussion of the much-discussed "barmaid question" can be satisfactory which leaves out of count the immense importance of sexual and other psychological elements. Indeed the whole question of the restoration of the inebriate requires to be viewed and discussed primarily from the standpoint of the psychologist, the investigator of mental activities in both their normal and morbid manifestations.

The redemption of the inebriate is a task calling for the exercise of the highest graces of faith, hope, and charity, and the practical application of many means and widely differing measures. The rational treatment of the disorder must be based on a sound knowledge of its bodily pathology and its mental psychology. Many expend time and energy and it may be added much money in a quest for what they term "a substitute" for alcohol, altogether disregarding of the truth that any agent which exercises a similar influence will in all probability prove equally baneful in its action.

The wise reformer will seek to employ the expulsive force of every legitimate motive, and will be ready to secure the conquering influence of each laudable emotion and elevating affection. The outlook must be of the widest, the analysis of the deepest, and the practical conclusions comprehensive and all-inclusive.

Incalculable harm and infinite loss often result from a blind experimenting with empirical measures or a following of quackish procedures. It does not come within the purpose of this work to deal with the treatment of inebriety. This is a matter which must be left to skilled medical care and experienced management. It is necessary, however, to offer a word of warning against the many much-advertised nostrums and so-called "cures" which are constantly being foisted upon an unscientific and patent-medicine loving public.

Inebriety brings such dire effects upon the drinker, and such far-reaching disgrace and disaster upon relatives and friends that it is perhaps not to be wondered at that even the most judicious and discriminating of advisers and the most rational of reformers are sometimes sorely tempted to resort to agencies which cannot be supported by science or approved by strict ethical standards. It is occasionally urged by superficial thinkers and inexperienced workers that in the treatment of inebriety "the end justifies the means". In the management of such a morbid condition as inebriety it cannot be too strongly insisted that such a conception is fraught with danger for the individual and will ultimately oppose anything like effective progress.

It is much to be regretted that not a few of the loudly lauded "cures" for intemperance and panaceas for inebriety are being patronized and publicly supported by many ignorant although well-meaning and philanthropi-

cally inclined persons. It is lamentable that "commercial frauds," as H. M. Inspector of Retreats designates most of these so-called patent remedies for drunkenness, should be encouraged in the name of humanity and for the sake of religion, and advocated by those who, if not altogether altruistic, are nevertheless recognized and respected as leaders of thought and trusted as reliable guides. It is clear that all such blind leaders of the blind stand in need of thorough enlightenment with systematic instruction, not only respecting the nature of inebriety and the characteristics of the inebriate, but also regarding the true aims of preventive, restorative, and alleviative measures and methods.

It is generally admitted that almost any form of treatment in which the "occult," the "supernatural," or any secret and mysterious procedures are allowed to play a dominant part in dealing with so neuropathic an affection as inebriety, often succeed or appears to succeed, at least for a time, and so long as the influence of "suggestion" remains as a controlling or modifying force.

With these reservations it may be safely urged that the rational therapist should make use of all means which can be honestly recommended and righteously applied.

Hypnotism has been employed in the arrest of inebriety with some small measure of success. When undertaken by an experienced and conscientious physician, "suggestion" in its various forms may certainly be admitted to rank as a justifiable form of treatment. In the hands of the ignorant and unscrupulous all procedures are fraught with danger. Certain drugs when administered under medical supervision are often of greatest service.

This reference to agencies likely to be helpful in the uplifting of the drink victim would be sadly deficient with-

out a very definite acknowledgment of the incalculable assistance which the wise worker and unprejudiced physician may obtain by seeking to bring the patient within the influence of that Presence and Power, the majesty and mystery, consolation and inspiration of which it is the mission of religion to reveal.

THE CARE AND CONTROL OF THE INEBRIATE

The inebriate is a disordered unit of the community who by his disorder and its consequences brings derangement and loss not only upon himself and his own affairs, but oftentimes upon his family and his associates and their affairs, and ultimately upon the community as a whole. The inebriate class forms a large and important section of the great body of human derelicts, the defectives, dependents, and delinquents who have to be borne as a heavy burden by the efficient and reliable members of the State.¹

Inebriety is now being more fully recognized as an anti-social influence, which calls for the fullest investigation and study. Inebriates are social misfits, morbid entities, inimical to healthy community life, sources of loss, anxiety, and danger to the State, and as such they must be viewed, cared for, and controlled.²

Of all human wrecks the inebriate derelict is the most pitiable. Much of this wastage and sorrow is due to an ignorance regarding the nature of inebriety and a lack of

¹ See Chapters by Dr. Mary L. Gordon and Dr. G. Basil Price on "The Inebriate Derelict" in "Human Derelicts," edited by Dr. T. N. Kelynack. London, 1914. Serviceable Bibliographies are provided.

² For references to the chief recent work dealing with inebriety and inebriates see articles which have appeared for some years past in issues of "The Annual Charities Register and Digest," published by The Charity Organization Society, London.

means to insure discrimination and direction and protection in regard to the inebriate.

Large numbers of inebriates are the subjects of innate mental defect. Dr. Mary Gordon has drawn a vivid picture of some of the types of mentally defective inebriate women, the care and control of whom proves so terrible a problem for the State: "Many inebriate, feeble-minded women are big, strong, healthy, and prolific mothers, and although they are responsible for a terrible rate of infant mortality, many of their children, in the hands of others, survive and grow up. Some of these people whose histories can be traced are found to come of a drunken stock, which is still reproducing itself freely—a stock in which multiple defects and degeneratives are manifest. These people do not die out; the supply is not decreasing in proportion as the country becomes more generally sober; they hand on their habits and idiosyncrasies often at compound interest. Their real condition has not yet received practical recognition, and they continue to be regarded as sane and responsible members of the community, who can learn by punishment or be touched by reformatory efforts. . . . If the real state of these persons were recognized and their permanent detention secured not only would the community save expense, and gain generally by their withdrawal, but they themselves would be able to live happier lives, usefully employed, and protected from the degradation into which they now fall. Some of the milder cases, taken early and thoroughly dealt with, might prove reformable. It is certain that the problem presented by this unfortunate class cannot be solved until some special means exist for saving them from themselves and for protecting the community from the consequences of their deplorable inheritance."

Not a few philanthropically inclined people are fond of contending that reformatories and retreats are failures, quite regardless of the psychopathic character of a large proportion of the patients dealt with in such institutions, and altogether neglectful of the valuable prophylactic purpose attained by detention of these potential parents. Dr. R. Welsh Branthwaite some years since found that no less than 62·6 per cent of the cases in Inebriate Reformatories were mentally unstable or defective.¹

With the coming of fuller knowledge regarding the pathology of inebriety and a clearer recognition of the characteristics of the inebriate, it is being realized that there is urgent necessity to provide legislative powers whereby not only the inebriate may be rationally cared for and reasonably controlled, but the interests of his family and friends protected, and injury and loss to the State as far as possible prevented or mitigated. Almost every civilized community has been driven to adopt procedures whereby some measure of protection can be secured from the evils incident to the presence of unrestrained and more or less irresponsible inebriates. Dr. R. Welsh Branthwaite long since indicated the legal measures which had been adopted by various states. He summarized the measures under the following heads :—

(1) *Penal*.—Measures regulating the punishment of occasional or habitual drunkenness by fine or by short terms of imprisonment.

(2) *Control* in penal establishments for lengthened periods.

¹ See Second Norman Kerr Lecture on "Inebriety : its Causation and Control," by Dr. R. Welsh Branthwaite, "British Journal of Inebriety," Vol. V, No. 3, January, 1908.

(3) *Interdiction*.—Laws prohibiting the sale of liquor to persons who are known inebriates.

(4) *Guardianship*.—Acts regulating the appointment of some person or persons to act as guardian or guardians, who may be endowed with legal power over the person, and over the estate of an inebriate.

(5) *Control* in special institutions with a view to reformatory treatment: (a) For the inebriate who makes voluntary application for admission. (b) By compulsory seclusion for the inebriate who refuses consent to treatment, and yet manages to keep out of the reach of the law. (c) For the inebriate who is a police-court resident, or who has committed crime caused, or contributed to, by drink.¹

As has already been shown in this volume the need for an extension of legislative powers for the protection and control of inebriates is urgently called for.²

Limited though existing powers may be, incalculable good has undoubtedly been accomplished by the work of

¹ "A Collection of British, Colonial, and Foreign Statutes relating to the Penal and Reformatory Treatment of Habitual Inebriates. Being a Supplement of the Report of the Inspector under the Inebriates Acts for the Year 1901." London, 1902.

² See Chapter IV, pp. 102-112. Consult also "Committee on the Inebriates Acts: Minutes of Evidence taken before the Departmental Committee appointed to inquire into the operation of the Law relating to Inebriates and to their Detention in Reformatories and Retreats, with Appendices and Indexes". London, 1908. Reference should also be made to "A Bill to Consolidate and Amend the Law relating to Inebriates," presented by Mr. Ellis Griffith, supported by Mr. Secretary McKenna, ordered by the House of Commons to be printed, 14 March, 1912. A summary of the Bill appeared in "The British Medical Journal," 30 March, 1912. See also "Annual Charities Register and Digest" for 1912.

reformatories and retreats for inebriates.¹ They have furthered considerably the scientific study of inebriety and have educated the public to a realization of the importance of legislation and adequate care and control for this unfortunate class of case. But the difficulties and disabilities connected with retreat work are numerous and heavy. Many existing establishments are ill-placed, old-fashioned, inadequately staffed, overcrowded, and oftentimes lack in scientifically directed management. Cases "Certified under the Acts" are sometimes permitted to mix in the same institution with uncertified cases, a procedure which to say the least is undesirable.

For the conduct of successful treatment the co-operation of the patient is desirable if not essential, but in large numbers of cases there is no acquiescence on the patient's part. An extension of legal powers for dealing with such cases is urgently required. It should be remembered that a considerable number of inebriates can only be induced to enter a retreat when financial and social pressure have exercised coercive force. It is estimated that

¹ A list of retreats and reformatories for inebriates will be found in the official annual reports of the Inspectors under the Inebriates Acts for England and Wales, Scotland and Ireland. A convenient "List of Homes for Inebriates" is periodically issued by the Friends' Temperance Union (Secretary, J. W. Harvey Theobald, 15 Devonshire Street, Bishopsgate, E.C.). Classified lists of institutions for inebriates will also be found in "The Medical Directory," published annually by J. & A. Churchill, "The Medical Annual," published every year by J. Wright & Sons, "The Annual Charities Register and Digest," issued by the Charity Organization Society, Denison House, 296 Vauxhall Bridge Road, S.W., and "The Classified List of Child-saving Institutions Certified by Government or Connected with the Reformatory and Refuge Union or Children's Aid Society," published by the Reformatory and Refuge Union, Victoria Street, S.W.

something like 80 per cent of all patients in retreats are being paid for by relatives or friends. It will thus be seen at once that the destitute inebriate and his poverty-stricken associates are commonly compelled to place the sufferer in an institution which, from the circumstances of the case, cannot but be limited in its opportunities, and is frequently unable to provide that open-air life and hygienically directed existence which is so essential for the redemption of alcoholic victims. At the present time the majority of inebriates are still permitted to labour for their own degradation and ultimate elimination, but this is usually a protracted agony which commonly brings financial and moral disaster and incalculable suffering to relatives and friends, and in only too many instances leads to an actual multiplication of individual misery. Even amidst the anxieties of these war days it would be a wise and economical course to adopt restrictive measures whereby the pernicious influence of inebriates could be removed from our community-life. The segregation of all feeble-minded inebriate women would be a prophylactic measure of the greatest value to the State, and would go far to lessen those repulsive displays of drunken bestiality which are now only too common in our great centres.

THE RÔLE OF LEGISLATION IN THE PREVENTION AND ARREST OF ALCOHOLISM.

From earliest days the State has claimed and exercised the right of attempting to control what for convenience it best termed "the liquor traffic". King Edgar, acting under the direction of Dunstan, seems to have been the first of our monarchs to apply legislative restriction.¹

¹ French, V. R.: "Nineteen Centuries of Drink in England". London.

A measure of "early closing" was provided for London as far back as the thirteenth century, when by the *Statuta Civitatis London*, passed in 1285, taverns were forbidden to remain open after curfew.¹ The scanty and scattered records of the fourteenth and fifteenth centuries contain abundant references to manorial and municipal expedients for regulating the sale of alcoholic liquors and limiting the evil effects resulting therefrom.² Interesting and instructive as the early legislative enactments for the restriction of the liquor traffic undoubtedly are for the serious student and rational reformer of to-day, the eighteenth and nineteenth centuries furnish the most important evidence of the slow evolution of organized thought and collective action in regard to this matter.³ Two centuries of experiments in licensing furnish striking evidence of an attempt to attain a double purpose, the safeguarding of the people from the evils incident to intemperance, and the raising of revenue by the taxation of the essential causal factors, the intoxicating drinks.⁴

In studying the legislative aspect of the Drink Problem it is most necessary to assume the spirit of the scientifically directed historian, and to view the slow development of taxation and other forms of restriction of the liquor traffic from the detached standpoint of the evolutionist.⁵

¹ Shadwell, Arthur: "Drink, Temperance, and Legislation". London, 1902.

² Souttar, Robinson: "Alcohol: Its Place and Power in Legislation". London, 1904.

³ See Appendices to the Sixth Lees and Raper Memorial Lecture on "Law and the Liquor Traffic," by the late Sir Wilfred Lawson, Bart., M.P. London, 1905.

⁴ Webb, Sidney and Beatrice: "The History of Liquor Licensing in England, principally from 1700 to 1830". London, 1903.

⁵ Rowntree, Joseph, and Sherwell, Arthur: "The Taxation of the Liquor Trade". London, 1906.

It will then be apparent that much if not all of legislative efforts have been little better than blind experiments, temporary expedients, and unsatisfactory compromises with selfish individuals and vested interests. Throughout there has been a conspicuous lack of any clear recognition of scientific principles which might guide thought and govern action. If legislative enactments in regard to the Drink Problem must lag behind popular opinion, then it is probable that mere expediency and selfish compromise will continue to govern progress. It is right, however, that statesmen should remember that with a rapidly growing recognition of medico-sociological truths legislation at least in regard to health should become a science, as well as remaining an art, if the greatest good is to be secured for the greatest number.

The State has ever reserved the right to interfere with the liquor traffic, to regulate the manufacture and sale of intoxicating drinks, to raise revenue from the same by definite taxation, and generally to exercise a controlling influence by the licensing of those engaged in the trade and the punishment of those who offend their country's laws through excessive indulgences in alcoholic drinks. From a study of the preceding chapters of this work it will be clear that the reformer and the statesman have need ever to bear in mind that the evil of alcoholism is essentially dependent on the presence in all forms of intoxicating liquors in common use in this country, be they spirits, wines, or beers, the products of the distiller, the wine-grower, and brewer, of a definite toxic agent. It is true that the poisonous action of this body may be increased and in a measure modified by the presence of adulterations and contaminations, but the chief deleterious action of all intoxicating drinks is dependent on ethylic alcohol, and

it is because of the presence of this body, with its characteristic action on the human subject, that most drinkers imbibe what is admittedly an agent possessing dangerous toxic properties.

Any satisfactory constructive legislation must also appreciate the existence of different factors in man's constitution which may act as ætiological influences predisposing him to a ready descent into intemperance or giving him a proclivity, if it may so be expressed, to the maintenance of sobriety.

It is further of paramount importance to bear in mind the important place which the public-house at present occupies in the common life of the nation and the personal habits of a large number of the individual units of the community. The relation of the public-house to the psychology of its frequenters and the hygiene of the people, requires careful consideration if legislation is to advance in accordance with scientific knowledge. There are good grounds for believing that in dealing with the unsatisfactory public-house as it now exists a method of substitution is likely ultimately to afford better results than a hard and fast policy of suppression.

The indissoluble association of alcoholism with other social evils must ever be borne in mind. This was wisely formulated in the Report of the Inter-Departmental Committee on Physical Deterioration: "Next to the urbanization of the people, and intimately associated with it as the outcome of many of the conditions it creates, the question of 'drink' occupies a prominent place among the causes of degeneration. The close connection between a craving for drink and bad housing, bad feeding, a polluted and depressing atmosphere, long hours of work in overheated and often ill-ventilated rooms, only relieved by the excite-

ments of town life, is too self-evident to need demonstration, nor unfortunately is the extent of the evil more open to dispute."¹ The Report, while indicating the necessity of employing educational measures, recognized the powerful aid which wisely ordered legislation was capable of affording: "The Committee believe that more may be done to check the degeneration resulting from 'drink' by bringing home to men and women the fatal effects of alcohol on physical efficiency than by expatiating on the moral wickedness of drinking. To this end they advocate the systematic, practical training of teachers to enable them to give rational instruction in schools on the laws of health, including the demonstration of the physical evils caused by drinking. At the same time the Committee cannot lose sight of the enormous improvement which has been effected in some countries, and might be effected in this country by wise legislation and their provisions extended."²

For long it has been apparent to would-be reformers that with the growth of large centres of population, the urbanization of the habits and manner of life of the people, the growing stress and strain of conditions of all forms of labour, the rapidly multiplying influences making for mental instability, and moral laxity, we have been developing characteristics which individually and nationally have rendered us one and all specially predisposed to succumb to the allurements of alcohol and conditions associated with or making for alcoholism, and certainly more susceptible to react to the toxic influence of alcohol.

During these recent days of war tension the element of

¹ Report of the Inter-Departmental Committee on Physical Deterioration. Vol. I, p. 30, par. 160. London, 1904.

² *Ibid.*, p. 87. London, 1904.

"fatigue" has without doubt played an important part in increasing the demand for intoxicants.

It does not come within the scope of this work to discuss in detail the many and widely differing schemes which have been vigorously urged as desirable features for legislative enactment. Recently it has become evident that the needs of the times have called for a thorough revision not only of what may be called prophylactic legislation but for the provision of powers whereby the manufacture and sale of intoxicating preparations could be more strictly safeguarded. As has already been insisted, the case of the inebriate has been sadly neglected. The Inebriates Acts have for long urgently required consolidation and amendment. Medical advisers and students of social progress have for many years united in urging the absolute necessity for restricting and scientifically regulating the promiscuous sale of intoxicating liquors. From the point of view of preventive medicine it has appeared to experienced social workers that it would not only be a rational but also a desirable measure to grant to a community powers for the regulation, and if considered necessary the exclusion from its midst of centres for the common sale of a body which is known to be so noxious as alcohol. Such a line of action is particularly required in places where the conditions of life render the use of alcoholic drinks especially dangerous, and where the allurements associated with its sale are exercising prejudicial influence on the well-being of the community. Many reformers have for some time desired that at least for urban districts some such system as that which well-accredited testimony represents as having produced beneficial results in Scandinavian countries should be attempted in this land.

Judged from the standpoint of the scientific sanitarian,

it certainly seems the height of folly to continue to submit the monopoly of a dangerous drug to those who must of necessity be financially advantaged in pushing its sale without regard to the physical, mental, and moral ills it inflicts on the individual, and the hindering and hampering influence exercised on the State. As long as the retail sale of alcohol is permitted to exist it should be effectively supervised and the sphere of its prejudicial action should as far as is possible be rigorously restricted. Much would be attained if the numerous existing enticements and inducements to drink were more strictly limited. So long as the public sale of alcoholic intoxicants is demanded by the people and allowed by the will of the State, such sale should be under the control of those whose monetary interest has been removed as far as is possible.

It is most desirable also that adequate powers should be granted to localities within defined limits and under carefully formulated conditions, to enable them to lessen the inducements to a dangerous indulgence and to promote counteracting agencies to the public-house and to establish community centres where sobriety can be promoted and intemperance discouraged. Recent experience has abundantly justified the contentions that "local licensing authorities might well have power to shorten the hours of sale, on any or all days, and to insist on entire closing on Sundays and on other special days," and that "much of our most serious industrial drinking might be prevented by securing the later opening of drink shops in manufacturing districts."

It may be well to remind the serious student and far-seeing reformer that while there are many insidious influences at work to-day making for an increase in some of the most detrimental forms of alcoholism and associated

evils there was probably never a time when there were so many inducements for the maintenance of sobriety among all sorts and conditions of men and women. In connection with agencies seeking to assist the Forces of the King and safeguard workers engaged in the manufacture of munitions of war, special reference should be made to the admirable centres conducted by the Y.M.C.A. These have afforded remarkable examples of how effective and popular public-houses may be made without the sale of intoxicants. Every agency which is labouring for greater physical efficiency, a sounder mental development, fuller moral forces, and a general betterment in the conditions of environment are to be welcomed as means to the furtherance of national sobriety.

WAR AND THE DRINK PROBLEM

No work professing to deal with the Drink Problem of To-Day could be considered satisfactory which neglected to recognize the important part which alcohol and alcoholism are exercising in relation to the Great War. The Drink Problem and all other problems can now be faced with the new power which comes from a rejuvenated spirit. In days of deadly conflict, when soul and body are at fullest tension, when perplexities and disasters threaten to overwhelm the feeble, and trials and tribulations strain the forces of the strongest, then it is that there is need to remember and prepare for the deranging action of alcohol. The dictates of a pure patriotism compel a consideration of the national causes and consequences of intemperance, and a thorough study of drunkenness in relationship to the psychological state of the people in time of war. The terrors and devastations of war are always increased by

alcohol,¹ but "neither war nor alcohol can be banished from the world by summary means nor direct suppressions" (Patrick). Both war and alcohol bring reversion to primitive types. Here is abundant material for serious study.

Those who seek to plan, conduct, prevent, or arrest war are compelled to give consideration to the rôle which alcohol is likely to play.

It is said that the Kaiser at the dedication of the new Naval Academy at Mürvik on 21 November, 1910, uttered these words of warning: "I know very well that the love of drink is an old heritage of the Germans. Henceforth, however, we must free ourselves in every direction from this evil by self-discipline. . . . The next war, the next naval encounter, will require of you sound nerves. . . . The nation which drinks the least alcohol will be the winner!"² The world knows that Germany gave but little heed to its Emperor's advice. The horrors of the rape of Belgium are believed to have been due in great measure to the drunkenness of German officers and men. This is clear from the Report of the Special Committee of which the Right Hon. Viscount Bryce, O.M., was Chairman:³ "Individual acts of brutality—ill-treatment of civilians, rape, plunder, and the like—were very widely committed. These

¹ For evidence of this statement reference should be made to the chapter on "Alcohol in the Services" in the fifth and last edition of "Alcohol and the Human Body: An Introduction to the Study of the Subject, and a Contribution to National Health," by Sir Victor Horsley and Dr. Mary D. Sturge. London, 1915.

² A lengthy report of this speech will be found in "The Anti-Alcohol Movement in Europe," by Ernest Gordon. New York and London, 1913.

³ "Reports of the Committee on Alleged German Outrages." London, 1915.

are more numerous and more shocking than would be expected in warfare between civilized Powers, but they differ rather in extent than in kind from what has happened in previous though not recent wars. In all wars shocking and outrageous acts must be expected, for in every large army there must be a proportion of men of criminal instincts whose worst passions are unloosed by the immunity which the conditions of warfare afford. Drunkenness, moreover, may turn even a soldier who has no criminal habits into a brute, who may commit outrages at which he would himself be shocked in his sober moments, and there is evidence that intoxication was extremely prevalent among the German army both in Belgium and in France, for plenty of wine was to be found in the villages and country houses which were pillaged. Many of the worst outrages appear to have been perpetrated by men under the influence of drink. Unfortunately little seems to have been done to repress this source of danger."

Alcohol has played no unimportant part in defeating the plans of our enemies. "The Times" in the early days of the war contained the following: "The trail of the German troops is marked by myriads of empty bottles. Their once proud soldiery is now typified by the colonel found in a drunken stupor amid his unconscious men beside a cask in an Epernay cellar. We may contrast with this picture the spectacle presented by the Allies—Russia absolutely prohibiting the sale of vodka and beer throughout her immense dominions. France forbidding the sale of absinthe, the British soldier marching through the best vineyards in existence, and temperately demanding his cup of tea. . . . In prohibiting the sale of spirituous liquor, Russia has already vanquished a greater foe than the Germans. Is it

fully realized that this is, to all intents and purposes, a 'teetotal' war?"

Experience gained in South Africa and in other campaigns has proved the importance of sobriety in maintaining the health and effectiveness of troops. The testimony of Sir Frederick Treves has often been quoted: "As a work producer alcohol is exceedingly extravagant, and, like all other extravagant measures, leads to a physical bankruptcy. It is also curious that troops cannot work or march on alcohol. I was . . . with the relief column that moved on to Ladysmith, and, of course, it was an extremely trying time by reason of the hot weather. In that enormous column of 30,000, the first who dropped out were not the tall men, or the short men, or the big men, or the little men—they were the drinkers, and they dropped out as cleanly as if they had been labelled with a big letter on their backs."

The prompt action of the Russian Government at the very beginning of the Great War in closing all vodka shops, not only surprised the whole civilized world, but rendered mobilization speedy, quiet, and effective, and this proved one of the main factors in overthrowing the plans of Germany and Austria-Hungary, and so turning the whole course of the war.¹

Leaders of thought and action were not slow to indicate the importance of securing sobriety among our sailors and soldiers, industrial workers, and members of the com-

¹ Reference should be made to the following: Carter, Henry: "Europe's Revolt against Alcohol". London, 1915. Sherwell, Arthur: "The Russian Vodka Monopoly". London, 1915. Johnson, W. E.: "The Liquor Problem in Russia". Westerville, Ohio, U.S.A., 1915. Useful references to articles relating to Alcohol and the War will be found in communications by Mr. John Newton in "British Journal of Inebriety," April and July, 1915.

munity generally. The King reminded all that Duty is the watchword. Lord Kitchener warned the troops that "Duty cannot be done unless your health is sound; so keep constantly on your guard against any excesses". The late Lord Roberts wrote a striking letter against the folly of "treating," closing with the words: "I therefore beg most earnestly that the public generally will do their best to prevent our young soldiers being tempted to drink". From all sources came warning voices, and among the appealing arguments one of the most telling was that of the editor of "Punch" in the scathing lines "To a False Patriot".¹

But pleas and arguments were not sufficient. Alcoholism prevailed to an extent which threatened national efficiency. Among the earliest Regulations issued in August, 1914, under the Defence of the Realm Act, 1914, were provisions giving to competent naval and military authorities power to close premises licensed for the sale of intoxicating liquors. The mobilization of the Reserves and the collection of Recruits was often rendered difficult by the prevalence of excessive drinking due in great measure to the prevalence of treating. The Intoxicating Liquor (Temporary Restriction) Act, 1914, sought to empower licensing authorities "if they think it desirable in any area temporarily to restrict the sale, consumption, and supply of intoxicating liquor," and also to limit the hours of opening both of licensed premises and clubs. The Bill as finally approved made it necessary that the approval of the Chief Officer of Police should be obtained before action could be taken by the justices, and further that his approval

¹ Sir Owen Seaman's fine verses appeared in "Punch" for 4 November, 1914, and reprinted in various forms, were circulated throughout the land.

should be on the grounds that "it is desirable for the maintenance of order or the suppression of drunkenness".

No stringent action on lines similar to that adopted by Russia was taken. The people generally seemed prepared for a wide-reaching measure of prohibition. Leading newspapers and experienced Statesmen advocated the application of sternly restrictive measures. In November, 1914, Mr. Lloyd George, then Chancellor of the Exchequer, in his War Budget imposed a war tax on beer which raised the retail price $\frac{1}{2}$ d. per half pint. This to some extent reduced the consumption of beer; but apparently in some districts, particularly in the north, favoured an increased consumption of spirits. Meanwhile it was becoming clear that alcoholism was proving a serious hindrance to industrial work and greatly delaying the manufacture of munitions of war. On 28 February, 1915, Mr. Lloyd George openly declared that "Drink is doing us more damage in the war than all the German submarines put together". On 29 March, 1915, a deputation of the great private shipbuilding firms waited on Mr. Lloyd George and Mr. McKinnon Wood and urged that as work was being impeded by the excessive drinking of a minority of the men, total prohibition should be applied. Every one realized the gravity of the situation. On 6 April, 1915, it was announced that "By the King's command no wines, spirits, or beer will be consumed in any of His Majesty's houses after to-day". Lord Kitchener and other leaders loyally followed the King's example, but the House of Commons, to the surprise of the whole Empire, declined on 20 April to follow "the King's lead". The view of the most patriotic was voiced in the words of the Archbishop of Canterbury: "We want drastic legislation or drastic action on the part of the authorities to whom the emergency legislation has given unusual powers. England

ought not to lag behind her Allies in so great a matter at this solemn time." The psychological moment was lost. Vested interests had proved too strong. No drastic measure of national restriction was applied.¹

Few know the full story of those eventful days. It is believed that many and varied schemes were propounded and discussed by those in responsible positions, including the possibility of the State purchase of the Liquor Traffic, which it has been estimated represents something like £300,000,000. The proposed liquor taxation which was to have been empowered by the Defence of the Realm (Amendment No. 3) Bill had to be dropped. A limited measure of restriction was secured by the passing of the "Immature Spirits (Restriction) Bill," of which the operative clause is as follows: "No British or foreign spirits shall be delivered for home consumption unless they have been warehoused for at least a period of three years".

Certainly the most effective work in limiting the worst manifestations of intemperance was accomplished by the action of The Central Control Board under the statesman-like chairmanship of Lord D'Abernon. The Defence of the Realm (Amendment No. 3) Act, 1915, was passed on 19 May, 1915. The Order in Council setting forth the Defence of the Realm (Liquor Control) Regulations, 1915, by which the Central Control Board (Liquor Traffic) was constituted the prescribed Government authority for the purpose of the State control of the liquor traffic in areas to which the Regulations apply, was made on 10 June,

¹ Students of the history of this period should consult "Hansard" for 29 April, 6, 10, 11, and 13 May, 1915, for Reports of Discussions in Parliament. Reference should also be made to articles appearing in "The Spectator," 27 November, 4, 18, 25 December, 1915, and 1 January, 1916.

1915. The Central Control Board carried out most thorough investigations regarding existing conditions, holding local inquiries at which were present representatives of the naval and military authorities, the local civil authorities, and employers and employees. Deputations representative of the licensed trade and organizations working for social betterment were received. Orders of a restrictive character were applied to many districts. The following are the main provisions of the orders issued by the Board :—

(1) The sale or supply of intoxicating liquor, whether for consumption on or off the premises, is ordinarily restricted to two and a half hours in the middle of the day, and to three (or, in some cases, two) hours in the evening, the sale of alcohol thus being prohibited before 12 noon and throughout the afternoon between 2.30 p.m. and 6 or 6.30 p.m. (2) In addition, the sale or supply of spirits is placed under additional restrictions. (3) "Treating" and credit sales are absolutely prohibited. (4) Clubs, as well as licensed premises, are made subject to the restrictions. (5) Licensed premises are permitted to open for the purpose of the supply of non-alcoholic drink and of solid refreshment at an early hour in the morning, so as to meet the interests of men proceeding to their work, and they are allowed to remain open for this purpose in the hours during which they are prohibited by the Board's order from selling intoxicating liquor. (6) Permission is given to dilute spirits to 50° under-proof instead of 25° under-proof only, as allowed by the general law.

It should be noted that a marked diminution in the number of convictions for drunkenness occurred in some of the areas scheduled by the Board, amounting in some instances to 70 per cent. In one area in Glasgow the

Board suppressed five licensed houses. It should further be pointed out that the powers of the Board extend to the taking over and conducting of licensed premises as well as suppressing houses which have proved dangers to the maintenance of efficiency in the neighbourhood. Experiments in State management of licensed houses are being carried out at Gretna, Enfield, and Invergordon. It may also be added that much valuable scientific research work relating to alcohol and alcoholism is being carried out at the instigation of the Board.

The Central Control Board is being directed with sound judgment and has accomplished untold benefit. It may be anticipated that it will be a permanent institution, and it seems possible that through this channel the maximum of benefit may be secured with the minimum of opposition.

What the future has in store it is impossible to foretell. At the present time many distilleries are being taken over by the Ministry of Munitions, and their equipment is being used for the manufacture of agents in the production of high explosives. It is stated, however, that there is in bond something like 130,000,000 gallons of Scotch whisky, or enough to meet the demand of the next three or four years.

It is difficult to obtain a complete view of the Drink Problem as it really exists at the present time. We are too near to gain anything like a proper perspective. The complete facts cannot be obtained. Statistics are liable to mislead. Opinions vary greatly. Conditions are not the same in all parts of the country. Complete data are unattainable.

As far as can be estimated the following points seem clear. There has been a general awakening to the im-

portance of the Drink Problem. Its relation to conditions on which depend either success or disaster are generally admitted. Large numbers of those who have been lifelong moderate drinkers have on patriotic, economic, or moral grounds become abstainers. Considerable numbers of men and women who have for long ranked among the chronic alcoholics have indulged in greater excesses than formerly. Among certain classes, emotional excitement, anxiety, sorrow, physical fatigue, and mental and bodily disorders have predisposed to alcoholism. The removal of various forces making for self-control, restraint, discipline, and their replacement by elements which stimulate the animal passions, can explain much. Economic factors have played an important part. While among the professional and middle classes there have existed economic conditions which have called for a strict limitation or renunciation of luxuries, in large numbers of industrial centres the workers have found themselves in possession of considerable sums of money with no opportunities and scant desires to expend it upon elevating recreations or wish to anticipate and provide for the coming of less prosperous days. Although the cost of alcoholic drinks has been increased, and the general consumption has apparently fallen, the income from the sale of intoxicants seems to have increased, and it is clear that hitherto the large manufacturing firms have suffered little if at all.

All classes of the community have hitherto failed to understand in all its bearings the importance of the economic aspect of the Drink Problem. Financial considerations loom large and must receive fullest consideration.

In conclusion it seems desirable to summarize some of the more important of the well-established statistically ex-

pressed facts relating to the Drink Problem.¹ The population of the United Kingdom in the middle of 1914 was estimated as 46,407,000. In 1914 the expenditure on drink equalled £164,463,000, or £3 10s. 10d. per head. The amount of liquor consumed was—35,661,000 36-gallon casks of beer, 31,694,000 gallons of spirits in proof, and 10,682,000 gallons of foreign wines. The average per head of the population can be expressed as .68 proof gallons of spirits; 27.6 bulk of gallons of beer; and .23 gallons of wine. The *per capita* consumption of pure alcohol in the United Kingdom was approximately 1.84 gallons: out of every 100 gallons of pure alcohol consumed 77 gallons were in the form of beer, 21 gallons as spirits, and 2 gallons as wine. During 1914 the retail sale of beer and spirits took place in approximately 141,000 shops, of which about 111,000 were licensed for consumption on the premises. This provided approximately one drink shop to every 330 persons, or one to every 200 adults of twenty years and upwards. About 97.5 per cent of the National Drink Bill was spent at these licensed drink shops and 2.5 per cent was expended in 9545 registered clubs. The official returns for 1913 indicated that 5451 persons died in England and Wales from alcoholism and cirrhosis of the liver, more than half being under fifty-five years of age. In England and Wales during 1914 there were 183,828 convictions for drunkenness, 146,517 males and 37,311 females. In 1914 in the United Kingdom there were 364,763 “proceedings” for drunkenness. In

¹ For many of the figures here given we are indebted to “The Alliance Year Book and Temperance Reformers’ Handbook for 1916,” edited by George B. Wilson, B.A., and also the “The Alliance War Almanack for 1916,” both being published by the United Kingdom Alliance.

1914 in England alone the proceedings for drunkenness amounted to 201,422. The pauperism of the United Kingdom in 1914 stood at 933,163, or a rate of 203 per 10,000 of the population. According to the latest returns of the Lunacy Commissioners there were 140,466 persons in January, 1915, confined in lunatic asylums of England and Wales of whom 129,402 were paupers. The Sixty-eighth Report of the Lunacy Commissioners expressed the opinion that a yearly average of 3135 persons have been admitted as lunatics during the last five years where alcoholic excess was a cause of their insanity. It is estimated that something like 20,000 men and women are now inmates of asylums who, to a greater or less extent, owe their insanity to alcoholic excess. The average cost of suppressing each licence in 1914 is estimated to be for full licences £991; for beer on-licences £1006; or for both classes £1000. In the ten years from 1 January, 1895, to 1 January, 1904, the average annual decrease in on-licences was 386. While for the nine years, 1905-13, the average was 1313, for 1914 it is estimated the decrease will probably prove to have been about 1032, making an annual average decrease since the Act of 1904 of about 1285. The number of Registered Clubs in England and Wales in 1914 amounted to 8738, or 2.35 per 10,000 of the population.

The following table is an estimate of The National Drink Bill for 1914, as prepared by Mr. George B. Wilson, B.A.

INTOXICATING LIQUORS CONSUMED IN THE UNITED
KINGDOM FROM 1 JANUARY TO 31 DECEMBER, 1914

Liquors.	Quantities consumed in 1913.	Quantities consumed in 1914.	Cost in 1914.
British spirits, 31s. 6d. per proof gallon	26,164,000	25,941,000	£ 40,857,000
Other spirits, ditto	5,680,000	5,753,000	9,060,000
Total spirits, ditto	31,844,000	31,694,000	49,917,000
Beer, 57s. per bulk barrel (11 months)	—	33,662,000	95,937,000
Beer, 75s. per bulk barrel (1 month)	—	1,999,000	7,496,000
Total beer	36,800,000	35,661,000	103,433,000
Wine, 18s. per gallon	11,427,000	10,682,000	9,613,000
British wines, cider, etc., esti- mated at 2s. per gallon	15,000,000	15,000,000	1,500,000
		£	164,463,000

The table on next page will be found of service for reference as it gives the returns since the year 1884.

The "Brewers' Almanack" for 1916 estimates that the total capital value of "the trade" amounts to £240,000,000, made up thus:—

Capital value of breweries and distilleries and their licensed property in the United Kingdom	£215,000,000
Capital value of all licensed houses not in- cluded in the above, say	15,000,000
Capital value of the wine and spirit trades, and all other trades in connection with alcoholic liquors, say	10,000,000
Total	£240,000,000

THE ANNUAL DRINK BILLS OF THE UNITED KINGDOM,
1884-1915

Year. Jan. to Dec.	Estimated Expenditure.	Per head.	Year. Jan. to Dec.	Estimated Expenditure.	Per head.
1884	£144,734,214	£4 1 0 $\frac{1}{4}$	1900	£184,881,196	£4 10 4 $\frac{1}{4}$
1885	141,039,141	3 18 3 $\frac{3}{4}$	1901	181,788,245	4 7 8 $\frac{1}{4}$
1886	140,550,126	3 17 4 $\frac{3}{4}$	1902	179,499,817	4 5 6 $\frac{3}{4}$
1887	142,784,438	3 18 0 $\frac{1}{4}$	1903	174,445,271	4 2 4
1888	142,426,153	3 17 2 $\frac{3}{4}$	1904	168,987,165	3 18 11 $\frac{3}{4}$
1889	151,064,035	4 1 3 $\frac{1}{4}$	1905	164,167,941	3 15 11 $\frac{1}{2}$
1890	159,542,700	4 5 1 $\frac{1}{2}$	1906	166,425,911	3 16 3
1891	161,765,291	4 5 7 $\frac{1}{4}$	1907	167,016,200	3 15 9
1892	161,527,717	4 4 9 $\frac{1}{4}$	1908	161,060,482	3 12 3 $\frac{3}{4}$
1893	159,020,709	4 2 8 $\frac{3}{4}$	1909	155,162,485	3 8 11 $\frac{1}{2}$
1894	158,932,134	4 1 11 $\frac{1}{2}$	1910	157,604,658	3 9 3 $\frac{1}{2}$
1895	163,133,935	4 3 4 $\frac{1}{2}$	1911	162,797,229	3 11 10 $\frac{1}{4}$
1896	170,426,467	4 6 4 $\frac{1}{2}$	1912	161,553,330	3 10 9
1897	174,365,372	4 7 6 $\frac{3}{4}$	1913	166,681,000	3 12 5
1898	176,967,349	4 8 0 $\frac{3}{4}$	1914	164,463,000	3 10 10
1899	185,927,227	4 11 8	1915	181,959,000	3 18 11

An analysis of the number of people employed in the Liquor Traffic in England and Wales seems to indicate that there are 386,045, or 271,017 men and 115,028 women. Of these 191,000 men are under forty-five years of age. At least 65,000 men are engaged in auxiliary trades not necessarily connected with the manufacture and sale of drink, such as carters, engineers, travellers, clerks, and the like. It is estimated that at least 85,000 or 31 per cent are unmarried men, and that 64,000 or 55 per cent of the women are unmarried.

No less than 60 per cent of the women are under thirty-five years of age. About 24,000 of the women are not employed in selling drink, but work as domestic servants and clerks. The mortality and morbidity rate among those engaged in the liquor trade is exceptionally high.

In order to provide the best available statistical data as to the consumption of intoxicating liquors in war the following instructive table prepared by Mr. George B. Wilson, B.A., may be reproduced.

THE DRINK BILL IN WAR TIME

Drink Bill for August, 1914, to June, 1915—*war time*, compared with the same period, 1913-14, *before war* :—

	1913-14.	1914-15.	1913-14.	1914-15.
BEER—	Bulk Barrels.		£	£
Aug.-Dec.	15,787,000	14,287,000	44,993,000	42,517,000
Jan.-June	17,721,000	14,766,000	50,504,000	55,372,000
Totals .	33,508,000	29,053,000	£95,497,000	£97,889,000
SPIRITS—	Proof Gallons.		£	£
Aug.-Dec.	14,741,000	14,093,000	23,217,000	22,196,000
Jan.-June	15,354,000	17,873,000	24,182,000	28,150,000
Totals .	30,095,000	31,966,000	£47,399,000	£50,346,000
WINE—	Gallons.		£	£
Aug.-Dec.	5,057,000	3,757,000	4,551,000	3,381,000
Jan.-June	6,076,000	5,069,000	5,468,000	4,562,000
Totals .	11,133,000	8,826,000	£10,019,000	£7,943,000

TOTAL EXPENDITURE

	1913-14.	1914-15.
	£	£
August-December .	72,761,000	68,094,000
January-June .	80,154,000	88,084,000
	£152,915,000	£156,178,000
	Before war.	In war time.

The above figures indicate that the total consumption in war time is as follows :—

Beer showed a reduction of 4,455,000 barrels, or 13·2 per cent.

Spirits showed an increase of 1,871,000 proof gallons, or 6·2 per cent.

Wine showed a reduction of 2,307,000 gallons, or 20·7 per cent.

For purposes of comparison it should be noted that the *extra* duty in the August to December period was about £1,500,000 ; and in the January to June period £10,630,000. *Less* the extra duty ; and on the pre-war basis the amount would have been : August to December, 1914 (five months), £66,594,000 ; January to June, 1915 (six months), £77,454,000—a total of £144,048,000.

As this work is passing through the press Mr. George B. Wilson has published his estimate of the National Drink Bill for 1915.¹

The facts and figures are so important and so essential to an up-to-date study of the subject that they are here included.

The total consumption of intoxicating liquors in the United Kingdom, measured in terms of pure alcohol, has been maintained at 92 per cent of the quantity consumed in 1914, and 90 per cent of the figures for 1913, while the actual expenditure of the nation in 1915 on intoxicating liquors shows an increase of 10½ per cent over the figures for 1914, and 9 per cent over those of 1913. Although many influences have been at work making for abstinence and strict sobriety there have been powerful incentives which have led to increased drinking among large sections of the community. Mr. Wilson enumerates some of these. The extraordinarily high rate of wages, the large numbers of unsteady casual labourers who are earning double or treble their ordinary pay, the abnormal development of the practice of “treating,” and the unprecedented disturbance of normal family life caused by the enlistment

¹ “Drink in 1915 : The Nation’s Bill for Alcohol.” “The Times,” Saturday, 11 March, 1916.

of our vast Army and by the present conditions of labour, which has resulted in a marked and deplorable increase in drinking amongst women, have all been factors making very strongly for an increased consumption of drink. The Central Control Board (Liquor Traffic) has placed various districts under restrictions and this no doubt has accomplished much in diminishing the prevalence of alcoholism. As Mr. Wilson well points out, "but for these and, to a lesser extent, the earlier restrictions, the nation would have had to face an expenditure on and a consumption of drink during 1915 which would have been of unprecedented and startling magnitude".

Mr. Wilson's estimate places the amount expended on alcoholic liquors in 1915 at £181,959,000, as compared with £164,463,000 in 1914, being an increase of £17,496,000. The following table shows the changes which have occurred:—

—	Expenditure.	Consumption.
	£	
British spirits . . .	+ 3,838,000	+ 2,437,000 proof gall.
Foreign ditto . . .	+ 1,401,000	+ 889,000 "
Beer	+ 12,667,000	- 4,781,000 bulk barrels
Wine	+ 410,000	- 460,000 gallons

The rise in foreign spirits is said to be entirely due to the enormous increase (929,000 proof gallons) in the domestic consumption of rum, which would appear to have received a new lease of life at home in consequence of its use by the military authorities abroad. Wine continues its steady decline. The rise in expenditure on beer, notwithstanding the decline in consumption, is due to the increased price.

The following table gives the details of consumption and expenditure in 1915. The figures do not include intoxicating liquors supplied to our Army and Navy outside the United Kingdom, but include the intoxicants supplied to the Forces within the Kingdom, either by the Government or in the military canteens:—

UNITED KINGDOM (population, 46,089,000).

Liquors.	Quantities consumed in 1914.	Quantities consumed in 1915.	Cost in 1915.
British spirits, 31s. 6d. per proof gallon . . .	25,941,000	28,378,000	£ 44,695,000
Other spirits, ditto . . .	5,753,000	6,642,000	10,461,000
Total spirits, ditto . . .	31,694,000	35,020,000	55,156,000
Beer, 75s. per bulk barrel	35,741,000	30,960,000	116,100,000
Wine, 18s. per gallon	10,686,000	10,226,000	9,203,000
British wines, cider, etc., estimated 2s. per gallon	15,000,000	15,000,000	1,500,000
			<hr/> 181,959,000

The average expenditure per head was £3 18s. 11d., and per family of five persons £19 14s. 7d., as compared with £3 10s. 10d. and £17 14s. 2d. respectively in 1914. The *per capita* consumption of spirits was .76 proof gallons; beer, 24.18 bulk gallons; and wine, .22 gallons, as compared with .68, 27.6, and .23 gallons respectively in 1914. The total consumption of pure alcohol was 78 $\frac{3}{4}$ million gallons, as against 85 million gallons in 1914, and of this quantity 72 $\frac{1}{2}$ per cent was taken in the form of beer, 25 $\frac{1}{2}$ per cent as spirits, and 2 per cent as wine.

The expenditure given in the table includes the follow-

ing taxes on liquor collected by the trade from the consumers :—

Spirits	£25,800,000
Beer	33,500,000
Wine	1,000,000
	<hr/>
	£60,300,000

The additional duty on the beer consumed in 1915 amounted to £22,210,000. If the 30,960,000 bulk barrels consumed in 1915 had been sold at the pre-war price of 57s. per bulk barrel they would have realized £88,236,000; at the increased price they realized £116,100,000, the higher price yielding £27,864,000; so that the public paid to the trade £5,654,000 over and above the amount which the trade collected for the State—a substantial allowance towards loss of profit on decline in consumption, higher cost of production, and expenses of financing the duty.

The following table shows the consumption of and expenditure on alcoholic liquors from the outbreak of the war to 31 December, 1915 :—

—	Quantities.	Cost.
Spirits (proof gallons)	49,113,000	£77,353,000
Beer (bulk barrels)	45,247,000	158,647,000
Wine (gallons)	13,983,000	12,585,000
British wines (gallons)	21,250,000	2,125,000
		<hr/>
		£250,710,000

Of this amount about £78,000,000 went in taxation. Against the revenue so derived Mr. Wilson enumerates the following :—

1. The waste of foodstuffs used in brewing and distilling which, in 1915, were approximately as follows :—

—	Brewing.	Distilling.
Malt (bushels)	43,670,000	7,824,000
Unmalted grain (bushels)	79,000	9,700,000
Rice and maize (cwt.)	1,217,000	13,500
Sugar and equivalents (cwt.)	2,644,000	996,000
Hops (lbs.)	51,500,000	—

The weight of the original barley and other materials thus destroyed was 1,800,000 tons, to prepare which at least 1,600,000 tons of coal were used. These materials, including coal, may be estimated at not less than £25,000,000. Allowance must, however, be made for the residual products, such as brewers' grains, yeast, carbon dioxide, etc., which were returned by the trade in 1907 on a larger output, at under 10 per cent of the value of the materials. During the past year, also, the demand for spirit for military as well as industrial purposes has probably absorbed more than half of the 47,990,000 proof gallons distilled, and during the present year practically the whole output will be devoted to nonpotable purposes. The quantity of spirits in bond on 31 December, 1915, was, however, considerable — namely, of home spirits 141,753,000 proof gallons, or, subject to the Immature Spirits (Restriction) Act, 1915, five years' supply; and of foreign spirits 12,844,000 gallons, or nearly two years' supply.

2. The area of land in the United Kingdom under barley in 1914 for brewing and distilling is estimated by the Board of Agriculture at 871,000 acres. 34,744 acres are under hops and 80,300 acres are devoted to apples and pears for cider and perry. The same estimate gives the number of men employed in these areas at 33,800. To these must be added from 5500 to 6000 miners engaged

in getting out coal, and about 465,000 persons employed by the licensed trade in the United Kingdom—a large supply of labour still available even after liberal allowance has been made for enlistments and for catering and hotel business not necessarily associated with the sale of intoxicants. To these must be added the labour involved in handling the raw materials and the finished products in their transport to and from the breweries and distilleries by sea, road, and rail. The weight of beer handled in 1915 was considerably over 5,000,000 tons, apart from the heavy casks. “Taken in the aggregate,” says Sir Alfred Booth, “the services absorbed by this trade are on a gigantic scale, and the net result of it all is a decrease in national efficiency.”

3. Nor can it be economically sound to raise a tax of £60,000,000 by diverting a further sum of £122,000,000 to a generally useless and often dangerous expenditure. During the fifteen years, 1900-1914, the people of this country spent £2,516,000,000 on drink. During the same period they only increased their deposits in saving banks (Post Office and trustee), their shares and deposits (1899-1913) in building societies and industrial provident societies and the ordinary and industrial life and annuity funds of their life assurance companies, by £300,054,000 in all. Russia, on the other hand, has even in war time increased her savings bank deposits by £55,000,000 in 1915, but then—she, at the same time, has reduced her spirit revenue from nearly £70,000,000 to £900,000!

These figures which have been compiled with scrupulous care provide data for serious reflection.

Although this work is mainly restricted to a consideration of the Drink Problem in its Medico-sociological aspects, it is believed that the preceding data will provide food

for considerable thought and possibly material for further investigations.

The whole problem is intricate and involved, but the highest interests of the nation are concerned, and in spite of all prejudices and every form of predilection searching study must be directed to its solution.

Of this we must at all events rest fully assured that no measures can be expected to attain any permanent advantage in preventing, ameliorating, or arresting the drink curse unless they are firmly based on scientific principles.

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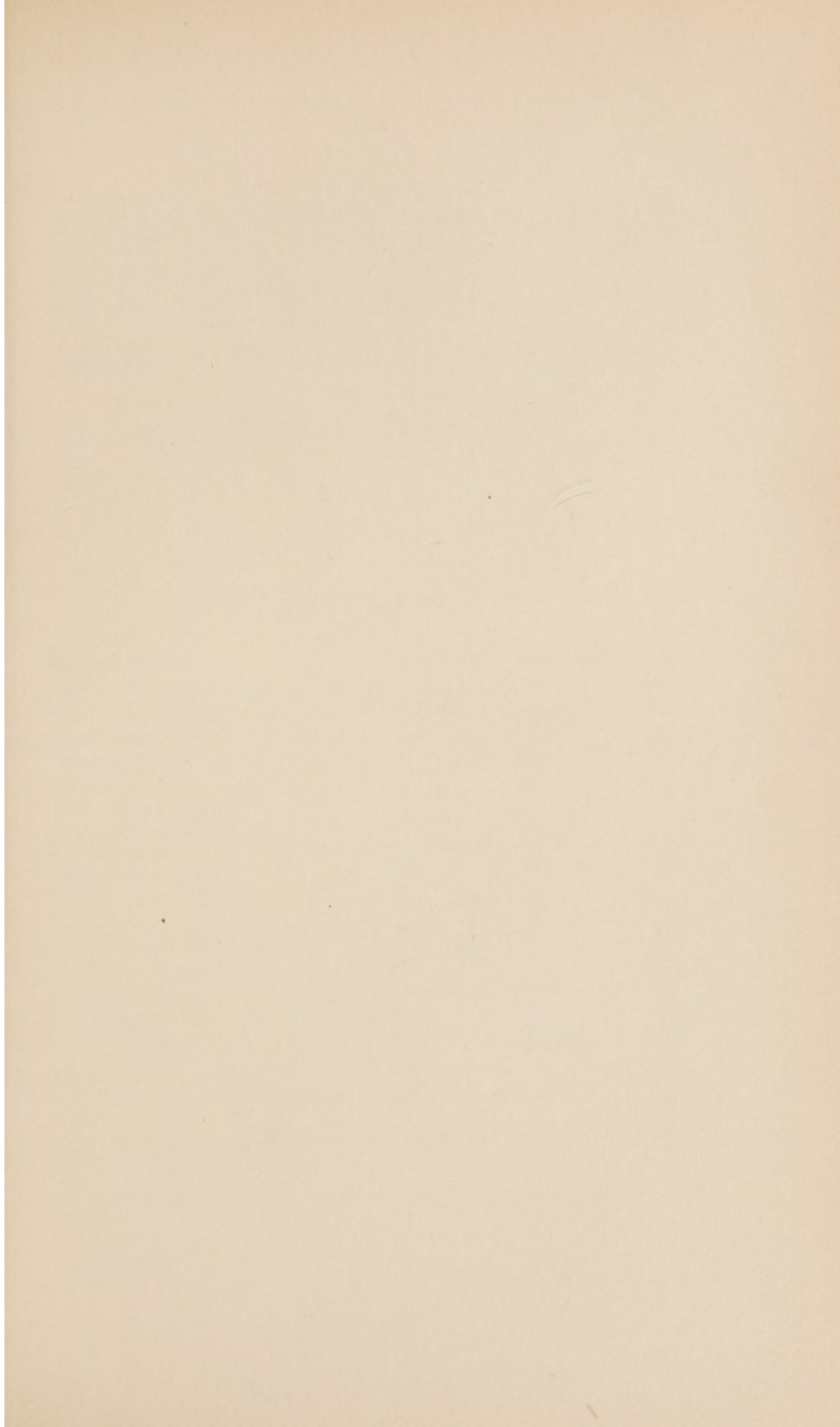
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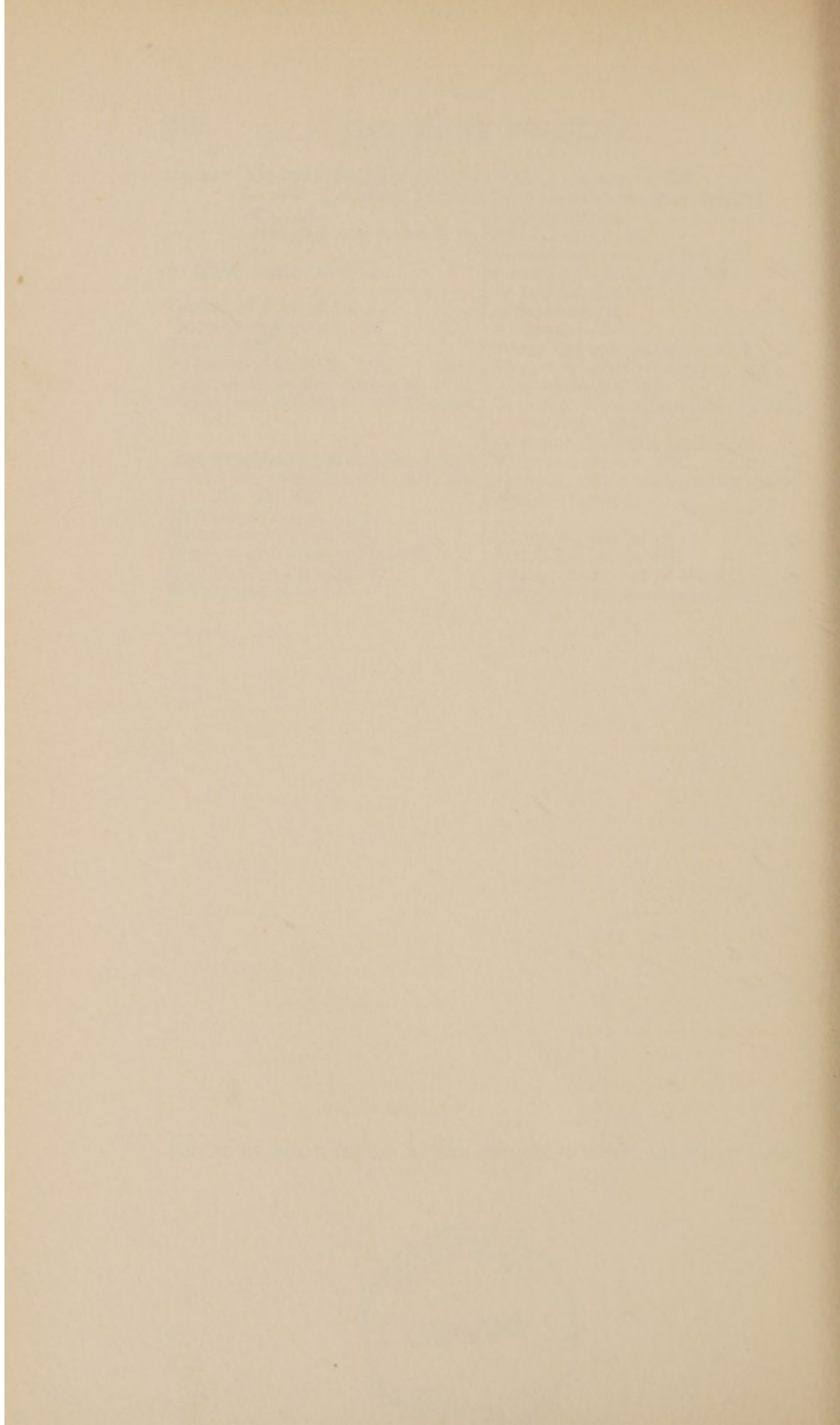
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