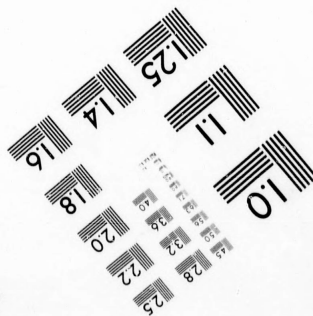
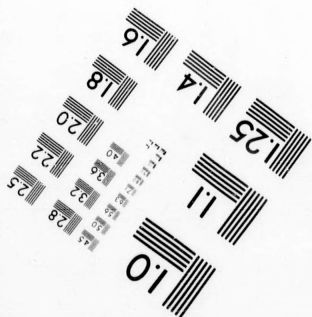
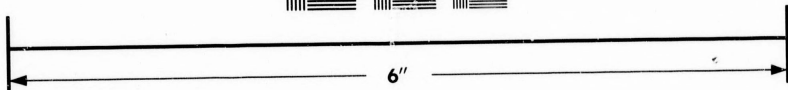
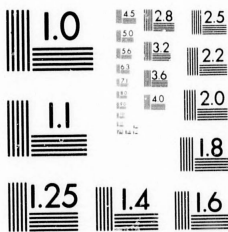


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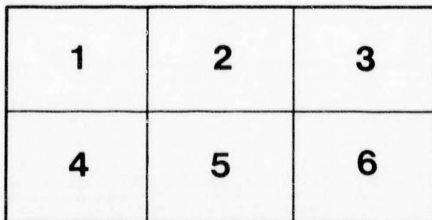
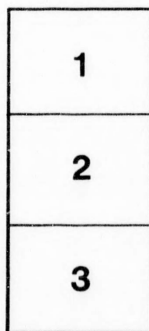
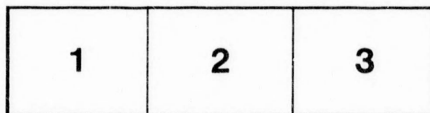
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ALCOHOL

IN

HEALTH AND DISEASE

BY

R. M. BUCKE M. D.

MEDICAL SUPERINTENDENT OF THE ASYLUM FOR THE INSANE, LONDON, ONT.  
AUTHOR OF "MAN'S MORAL NATURE"

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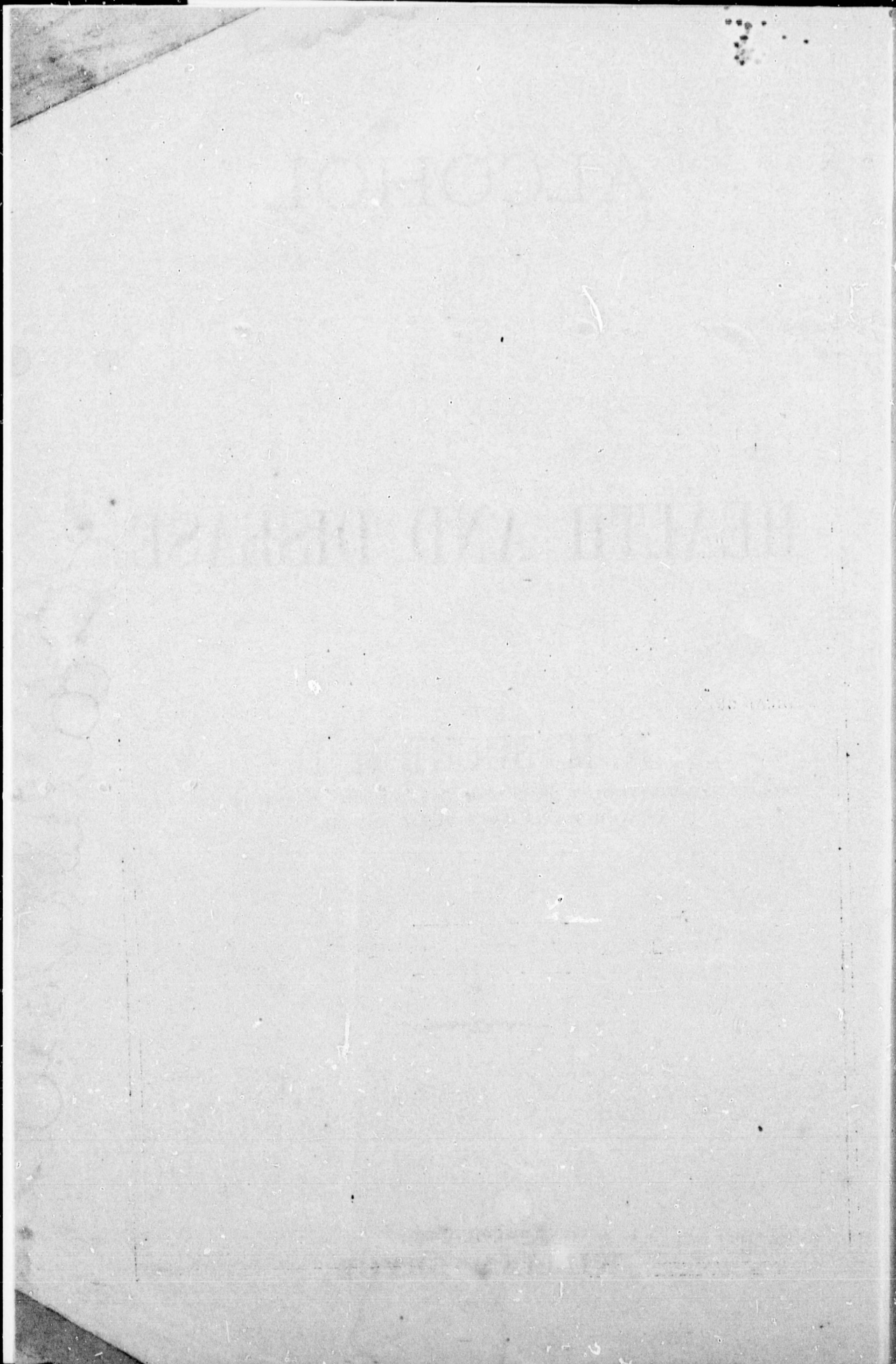
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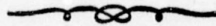
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# HEALTH AND DISEASE

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MEDICAL SUPERINTENDENT OF THE ASYLUM FOR THE INSANE LONDON ONT  
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London, Ont.  
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1880





## PREFACE

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This Essay was read, in an incomplete state, before the "Dominion Medical Association" at London on the 10th of September 1879 and was published next morning in the DAILY ADVERTISER. From that paper it was reprinted twice in England. Since then it has been re-written and a good deal enlarged. I have reason to think that in its original form the Essay did a certain amount of good. It made a certain proportion of those who read it realize more clearly than they had done before the fact that alcohol, no odds in what shape used, and no odds whether used in moderate or immoderate quantities, has not the power of adding to the sum total of our comfort or happiness. That, on the contrary, in the case of the average man or woman, that is in the case of at least ninety-nine out of every hundred people, alcohol lessens the comfort, the happiness, the value of life, just in proportion to the amount of it that is taken. We all know the enormous evils that accompany and follow drunkenness, such as deterioration of the intellectual and moral natures, poverty, broken health, and premature death. It seems to be a common opinion that the agent which causes these evils is also, when differently used, the agent of great corresponding blessings to mankind; that it is capable of diminishing the ills and adding to the pleasures of life; and that the proper attitude of the sensible man towards alcohol is that of discouragement of what is called its abuse, and commendation of what is considered its legitimate and desirable use.

It is the object of this little Essay to show that this view of the matter contains a gross and glaring fallacy; that alcohol, no odds how wisely, temperately and carefully used, and no odds in what pure and delicate forms taken, has not the power

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commonly ascribed to it of either lessening the pains, ills, or sorrows of life, nor of increasing its joys, comforts, or pleasures; but that it does the opposite of all this just in proportion to the amount of it taken; and that the only wise course which it is possible to pursue in regard to alcohol is to let it alone—to drink none of it, in any shape or in any quantity.

It is in the earnest hope that this little Essay may induce at least a few of those who read it to see the truth of this proposition, that it is now published in its present form.

R. M. B.

*London Asylum, April, 1880.*

## ALCOHOL IN HEALTH AND DISEASE

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There are few more important questions before the world to-day than the following :—I. Can alcohol be so taken as to be of value to a healthy organism ? And : II. Is alcohol of any value, and if so of what value, as a medicine ? Hundreds of able men are seeking answers to these questions, but so far have found none which have been able to make themselves accepted with anything like universality by the large body of intelligent men, in and out of the medical profession, who are waiting and listening for a decision on these points. For there is still a large and intelligent body of men, as well in Canada as in all the other countries of Christendom, who believe honestly, after life-long experience and mature thought, that alcohol, taken at proper times and in proper quantities, is capable of rendering life longer, more vigorous and more happy ; and there is another class, equally intelligent, thoughtful and honest, who believe just as firmly that, whether taken in greater or less quantity, the balance of results is always against its use ; that by so much, in proportion to the quantity of alcohol taken, be it more or less, the person taking it has his life shortened, his vigor lessened, and his happiness decreased. So again, considered as a medicine, there are many able physicians in this country, as there are all over Europe and America, who consider alcohol one of the most valuable drugs we

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possess, who would consider that the man who withheld alcoholic stimulants from a patient with typhoid fever or typhoid pneumonia ought to be indicted for malpractice; while there are many other physicians, perhaps equally learned and thoughtful, headed by such men as Benjamin Richardson and William Gull, who rarely if ever use alcohol in any form in their practice, and who consider it of scarcely any or of no therapeutic value. It is highly undesirable that doubt should continue to exist upon such questions as these. For the sake of both the well man and the sick man, these questions should be answered as soon as possible, once for all, and set at rest for ever. For even if alcohol is not as harmful as the advocates of total abstinence say it is, still we know that the injury which it inflicts upon our race is far from contemptible. And on the other hand, if alcohol has half the value that its friends claim for it, then it is an agent the loss of which through hasty judgment and prejudice, should this happen, would be most calamitous, both to practitioners of medicine like myself and to the world. And it does seem not a little remarkable that upon points where experience is almost infinite in amount and freely accessible to every one, that these doubts should have so long existed, and the fact that they still do exist proves, I think, conclusively that whether alcohol be harmful or helpful in health or disease, it must be (taken in reasonable amount for a limited time) far less harmful or far less helpful than either its opponents or its advocates say it is. For if alcohol, used in moderate quantities, possessed the power to injure that our total abstinence friends say it possesses—or if it had one half the thera-

peutic value that its advocates claim for it—surely these questions would have been settled long ago.

The proper way to fix the value or no value of alcohol as a food or as a medicine would be to find out what the organism does with it, and what it does to the organism, when it is introduced into the circulation. If this action and reaction could be determined with certainty, the answer to the previous questions would follow without further trouble. Unfortunately, it has been found impossible to answer these questions with any certainty. There is no doubt that when alcohol is drunk in large quantities, the organism having at that time no need, in consequence of some exceptional condition, for these large quantities, there is no doubt, I say, that then a very large part of the alcohol leaves the body as it entered it, in the form of alcohol. Not having been altered chemically, and not being like water a constituent of the organism, it could not in this case have fulfilled the functions of a food, and if no medicine was needed at the time it could have done no good as a medicine; it seems clear then that in the case supposed, alcohol, however little harm it might do, could do no good. But there are other circumstances in which the problem is not by any means so simple, circumstances of exhaustion and disease, in which it is not at all clear to me that the alcohol, or some of it, is not oxidised in the body, and though it cannot supply tissue yet supplies force to the organism. It has been argued that alcohol is a food, because it is said those who habitually use it eat less than do those who do not use it. I believe this last is true, but I do not believe that the inference drawn from this fact is a correct

inference. Those who use alcohol use less food than do those who use no alcohol—but do they evolve as much force? If they do, then alcohol yields force to the organism; if they do not, then the argument breaks down. The fact is that those who use alcohol habitually do not and cannot evolve force—either mental or muscular—as freely and to the same extent as do and can those who abstain from alcohol; and as a class what Richardson calls the “alcoholics”\* are sluggish and incapable, as compared with those who use no alcohol; and that alcohol incapacitates those who use it for any work to accomplish which requires the utmost stretch of our faculties, whether the work to be accomplished be muscular or mental. In other words alcohol reduces our capacity for work, that is, our capacity for evolving force. So true is this that whenever great muscular strength and endurance is needed the best advisers forbid alcohol. And we all know, those of us who have ever seriously tried to think and who have used alcohol, that the smallest quantity of this drug impairs mental vision, and relaxes the mental grasp upon phenomena. Such arguments as this might be furnished on one side of the question or the other, *ad infinitum*, and no definite conclusion ever be arrived at, for the reason that, as I have said, the problem does not seem to be completely soluble from this side, because our knowledge of the total condition of force evolution by the organism is too limited. In the remarks which I propose to make at present I intend to approach the question not from the abstract side, the side of chemico-vital science; but from the concrete

\* See Dr. B. W. Richardson's admirable little book on “Total Abstinence.”

side, the side of experience. I propose to consider what may be called the historical side of the problem. Without calling in question directly the nutritive or therapeutic value of alcohol, I intend to inquire into the mental attitude of mankind at large toward this agent, and see whether something cannot be learned about it in this way.

It needs no argument to show that opinion upon the value of alcohol is far from being a fixed quantity. Putting aside certain particular cases, such as shock, in which alcohol is given, not as a stimulant, but for its special physiological action of relaxing the small blood vessels, and which cases as causes for the administration of alcohol are, in proportion to those about to be mentioned, almost infinitely few ; I say, putting aside these cases, five positions have been successively occupied by the friends of alcohol and attacked by its opponents. (1.) The first of these five positions is that alcohol in the form of beer,\* wine, or spirits is necessary to maintain a healthy man in health, and to preserve the vigor and strength of his body and mind when subjected to the wear and tear of ordinary life. (2.) The second position is, that in circumstances of unusual hardship, exposure, and exertion alcohol is necessary to prevent the exhaustion and breaking down of the organism. (3.) The third position is that if not a necessity alcohol can be so used by people in good health as to lessen the discomforts and add to the comforts of life ; that in fact it is capable of increasing our happiness, both absolutely and relatively to our unhappiness. (4.) In the fourth place it is said that if alcohol is not a necessity for strong and healthy people, it is a neces-



sity in the case of many people who are temporarily or permanently enfeebled from almost any cause. (5.) And fifthly it is claimed that alcohol is a valuable medicine, in fact indispensable, in acute adynamic states. I intend to make a few remarks, first, on each of these positions in turn, and then on all of them taken together.

It is scarcely credible to many of us now in this country that it was ever held that alcohol was necessary to enable a healthy man to maintain his strength and do his ordinary work ; yet a very few generations ago in England this belief was almost universal, and I myself have known many old people there who believed it as firmly as many of us now believe that a man would get weak if he ate no meat. Though there are still advocates of alcohol who hold this position they are few and they are not among the learned, and it may fairly be said, speaking generally, that this position is abandoned. The second position, that alcohol is necessary or at all events useful in circumstances of great exertion and exposure is still largely held, though the evidence against it is overwhelming. In arctic and other explorations, in training for boat races, and in fact in all cases where unusual endurance is required, and where the men who are to bear the strain are under competent discipline, the use of alcohol has been abandoned, and in every case with advantage. It is found that men bear exposure and fatigue, heat and cold, hunger and thirst, better without than with alcohol, even when this is given under the orders of skilled physicians, which is as much as to say that our present knowledge does not enable us to use this agent in such

a manner that it shall increase the energy of the organism. What now shall we say of the third claim which is made for this agent, viz. : that properly used, alcohol is capable of increasing the comfort and pleasures of human life absolutely and relatively? If alcohol can do this its use may be justified even if through it the total duration of life is lessened. This is not a question which can be settled by reasoning, it must be decided entirely by experience. No one who has always been in the habit of using alcoholic stimulants can be heard on this point, because, having had no experience of life without alcohol, such a person cannot draw a comparison between life with and life without that agent. The opinions of those who have never drunk alcoholic liquors must equally be disregarded, since they do not know of their own experience that they would not be more happy if they used them. We must confine ourselves, therefore, to the testimony of those who have for a certain part of their lives used alcoholic liquors as a beverage, and who for a certain other part of their lives have altogether abstained from the use of these stimulants. Now, I have known a great many people of this class, and have spoken to many of them upon this point, and I am able to say that beyond all doubt, as far as the testimony of these people is concerned, the balance is strongly against alcohol. The verdict is unmistakable—it is that the pleasure derived from alcoholic stimulation, no matter how slight or how great this may be, is on the whole more than balanced by the depression following it. I am also able on this point to give my personal opinion based upon careful observation of my own experience.

For many years I used alcohol in moderate quantities in the forms of wine, ale, and whiskey, sometimes using one and sometimes another for weeks or months at a time, and often going weeks or months without using any alcoholic liquid ; and my mind is at last fully made up that I, for one at least, enjoy my life more without alcohol than with it ; and acting upon this conviction, I something over a year ago abandoned its use altogether, and my present intention is to drink no more alcohol in any form or in any quantity as long as I live. Now, if such evidence as I have given will not settle this point, it will show at least that this claim which is made for alcohol with so much confidence by many persons is not settled in favor of the use of alcohol, but that it is either settled against its use or else remains undecided.

Since writing this paper I have met the following remark in an article on "Alcohol : its Action and Uses," by Dr. Gasquet, in the *Dublin Review* for April, 1879, and I was much struck with the singular resemblance between it and what I had just written a day or two before. Dr. Gasquet says : "I have questioned many persons who, having been always temperate, have become total abstainers, and have almost always been assured that they were conscious of an increased mental vigor and aptitude for work, and," the Dr. says in conclusion, "my own personal experience has been the same." But if we say that alcohol is not capable of adding to the pleasures of life (however much harm it may do along with this supposed good) how shall we account for the almost universal consent of mankind to use this agent for this purpose ? The answer to this question is, that

up to a certain stage of development of the human mind an immediate pleasure is more coveted than is a more remote though greater pleasure, or than a much greater but remoter evil is dreaded. In the mind of savages the present has a much greater preponderance over the future than with ourselves, and the tendency to drunkenness with them is very much greater than with us; so true is this that many tribes of savages are rapidly dying out, largely on account of their excessive use of alcohol. And if they could procure alcohol as readily as we can there is no doubt that very many races of savages would soon become entirely extinct. And I do not expect that direct arguments in favor of temperance will ever do very much toward making mankind abandon the use of alcohol, for nearly every one knows now that the use of this agent is a mistake—a game where the chances are infinity to one against the player—a game where loss is indeed certain and gain impossible. If, therefore, mere knowledge on the subject was any use, we should all be to-day abstainers. What is wanted is something deeper than knowledge. It is the clearness of vision which enables us to see and realize the future as if it were present, and the moral firmness which enables a man to do what he knows to be for his true welfare, and to leave undone (whatever the temptation to do it) that which being done he knows would be to his ultimate injury. In fact the habit of mind which makes men drink alcohol in whatever quantities, that habit of mind which places instant gratification before ultimate welfare, is essentially the same habit of mind as that which makes men gluttonous, liars, thieves, and unchaste; it is in fact, as I have said,

the habit of mind of the savage, as contrasted with the habit of mind of the civilized man. And civilization itself, a higher civilization than we have yet reached, is the remedy for the use of alcohol, and this is the only remedy, as far as I can see, which is likely to do any real good.

What now shall we say about the use of alcohol by feeble persons, invalids, and all those the vigor of whose systems is below par? I have lately made a very large experiment which bears directly upon this point.

I have discontinued the use of alcohol entirely at the asylum of which I have charge, except in the cases of persons who are not only feeble but who are actually ill; and even in cases of actual illness, as will appear further on, I use very little. At the time I assumed charge of the London Asylum the average number of patients at that institution was about six hundred; these people used about twenty-five hundred dollars worth a-year of beer, wine and whisky. Now if alcohol does any good to feeble people it ought to have done good to these people, for they belonged to the very class who appear to need stimulants the most, and the stimulants were given to them, not according to their own notions or feelings as to when they were to take them and how much they were to take, but by thoroughly competent physicians, who had the patients under observation, either directly or indirectly, day and night. Over a year ago I entirely ceased to use beer, wine, whisky, or brandy in the asylum. About two years ago I began this reform (as I call it). Each month I reduced the number on the list of those who were given beer, wine, whisky, or brandy watching carefully all the time the effect of the with-

drawal of the stimulant. I saw nothing to warn me against the course I was pursuing, and something over a year ago I closed the spirit lists entirely. No evil consequences have followed this step, the health of the asylum was never better, I doubt if it was ever as good as it has been since the use of alcohol has been discontinued; the death rate has fallen slightly; there have been a larger percentage of recoveries to admissions than there were while alcohol was being used; and in fact the change seems to be a change for the better in every way. What struck me as being most remarkable about this total abstinence movement was that the patients did not seem to mind scarcely at all being deprived of their beer, wine, or whisky, as the case might be. Scarcely any of them begged to have it restored to them, and the few who did so forgot all about in a few days. In watching the individual patients as the stimulant was taken from them, I could very seldom see any difference in their health or strength which could be attributed to this cause. In the case of one very old man who had been a soldier, and who had probably used alcohol every day of his life for over fifty years, there was considerable loss of strength, and after a few weeks I put him on stimulants again; this man had been failing for some years, and since then he has died of old age. This was the only patient that seemed to feel the withdrawal of the stimulant. In the case of another patient, a very feeble woman, the result was the reverse. This woman had not sat up for many months, she lay on a bed or sofa all the time, she had no disease as far as I have been able to make out, she was simply weak. My chief

assistant said, "If you take away her wine she will die." And I put off taking it from her, for I was a little uneasy as to the consequences of the step myself. At last, over a year ago now, I did stop it. In a few weeks afterwards she began to sit up, and she has sat up and walked about every day since. Now, even if the experiment just detailed to you stood alone, it would almost settle the question we are now discussing, for if six hundred feeble people are as well off without alcohol as with it, why not six thousand or six millions. But the experiment I have cited does not stand alone, many other institutions of the same kind or similar to the London Asylum, also do without alcohol; and while I have known of several asylums leaving off the use of alcohol, I have never known of one resuming the employment of this agent after a fair trial without it. This being the case I think we may fairly say that though alcohol, used in moderate amount, under the direction of a physician, may not be injurious, or at all events not very injurious to the average invalid or feeble person, yet that it is certainly not indispensable to such persons, and that the probability is that in almost every, if not in every case, they are better without it.

We come now to the position in which alcohol is most strongly entrenched, that is to its use as a medicine. Considered as a drug, alcohol is supposed to be most valuable in circumstances of extreme exhaustion, in what the doctors call acute adynamic states—*i. e.* in states of great and rapid prostration—as in typhus and typhoid fever—in typhoid pneumonia—in malignant scarlet fever—in small pox—and generally in states of the system where the patient is likely to die from asthenia or exhaustion.

within a few days or a few hours, and where if his life could be prolonged for a short time, the disease running its course, he would be carried over the point of extreme depression and his life saved. What shall we say about this? We will say, in the first place, that it is very hard to tell, when the patients recover in such cases, what caused them to recover; whether they recovered because the disease was not severe enough after all to kill them; because their constitutions were stronger than supposed; or because they had some medicine which supported their strength or weakened the force of the disease. We will say, in the second place, that the best physicians, such men as Benjamin Richardson and William Gull, do not use alcohol nearly as freely, in either acute adynamic or any other cases, as did the best physicians of twenty or thirty years ago, or any time before that; and that the men of most ability and experience to-day do not believe in the power of alcohol to tide the patient over a crisis with anything like the confidence that was reposed in this agent down to very recent times. But besides these considerations there is another, which I think is entitled to still more weight. It is this: whether we use or give alcohol to support the body under the strain of ordinary life, or under exceptional strain or exposure; whether we take it with a view of adding to the happiness of our lives; whether we give it to those who are merely enfeebled; or to those who are suffering from acute and dangerous exhaustion—we give and take it in every case with the same view, with the same expectation. This expectation is that it will in some way increase the ability of the organism to evolve force, or that it will in some way



make the old supply of force go further in maintaining the functions of the body. Now either alcohol possesses this power or it does not possess it. If it does possess this power it seems to me that all the claims enumerated in this essay which are now or have been made for alcohol must be eventually sustained. If it does not possess the power in question, then I think it is equally certain that all these claims must be abandoned. That alcohol does not possess this power is believed on the grounds of chemico-vital science by those who have studied its physiological action the most deeply, and, as I have shown above, experience does not tend to the belief that alcohol possesses any such property. This being the case it seems to me that we are obliged to conclude that so far we have no sufficient warrant for the use of this drug either in health or in disease, and that if we use it at all it must be merely in the way of experiment and with the full understanding that a vast preponderance of the evidence so far collected on this point is against the assumption that alcohol can be taken with advantage except in certain very rare and exceptional cases either in health or in disease. And in connection with this general view of the case we should never lose sight of the fact that while we know that alcohol introduced into the system either continuously in moderate amounts—or at one time in larger quantity—is capable of producing the gravest evils—of even causing death—it still remains doubtful whether in any amounts, or under any circumstances it is ever of value to a living organism. This being the case the attitude of reasonable men towards this agent ought surely to be—instead of giving or taking it as a matter

of course until the point was settled—to leave the drug alone until it be shown—if that time ever comes—when and how it may be used so that the balance of results from its use may be on the credit and not on the debit side of the ledger ; and meantime let experiments be made by the members of the medical profession, and others who are competent to conduct such experiments, as in the case of any other drug the value or application of which is in doubt. For what would any physician say if he were asked to countenance the indiscriminate use of any drug, say quinine, on the chance that its daily or habitual use by a large part of the community might possibly on the whole result advantageously ? Would he not indignantly scout such a proposition, if indeed he could be brought to consider it at all ? But if physicians countenance the habitual use of alcohol as a food, as a beverage, or as a medicine, simply because people like it and expect them to countenance it, and without being convinced at the time when they permit or order it that it will be on the whole beneficial to the person who is to take it, what better are they in this case than they would be in the other which I have just supposed ? It was this reflection which led me to see my own responsibility in this matter, and which dictated to me the course of action in reference to this drug which I have detailed in the foregoing pages.

There is a curious parallelism between the use and disuse of alcohol and blood-letting. There was a time, not so very long ago either, when almost the same claims were made for blood-letting as those mentioned above which have been and are made for alcohol. It was said (1) first, that for a healthy person to remain in

health it was necessary that he should be bled once or twice a year ; (2) second, that if not absolutely necessary still the person felt better and was better for the loss of blood ; (3) third, that in almost all severe accidents and diseases blood-letting was absolutely indispensable. These claims for blood-letting have been abandoned one by one in the order in which I have mentioned them, and in the same order in which the claims for alcohol are now being abandoned ; and I am fully satisfied that just as surely as the world has learned to do without being bled, except in very rare and special cases, so surely will it learn to do without alcohol except in equally rare and special cases. And I am also certain that just as the world is better off without the general use of bleeding both for the sick and well, so will the world be far better off when it learns to abandon the general use of alcohol both in health and in disease. And I believe it would be perfectly safe to predict that a time will come, and that perhaps before many generations have passed away, when it will be as rare for a physician or surgeon to prescribe alcohol, as it is now for either of them to prescribe blood-letting, and when a healthy man will no more think of taking alcohol with a view of preserving his health, or to make him feel better, than he thinks now of going to a surgeon to be bled with a view to the same end. Neither is this, as might be thought at first sight, an unfair comparison for surely it is as rational on the face of it to expect good results to flow from the withdrawal from the body of some of one of its constituent parts as it is to expect benefit to result (except in very rare and exceptional conditions of the system) from the

introduction into the body of a substance which has no chemico-vital relations with any of the tissues or fluids of any living organism. If then alcohol does us no good when we are well or when we are sick—when we are weak or when we are strong—how comes it that there is such a general consent among mankind to use this agent both in health and during the continuance of such a vast variety of illnesses? This is the question which I wish to consider before I close. And I wish to say here that if anything in this beautiful earth of ours was especially planned and made by Satan alcohol must have been the thing so invented by this arch-deceiver, so wonderfully is it adapted to flatter the strength and deceive the weakness of mankind; and so marvellously is it designed to creep into the very citadel of our being so as to overthrow the intellect, the affections, and all that makes life valuable, and finally life itself, while at the same time from beginning to end of the process making its wretched victim believe, in the first place, that it is a harmless plaything, and afterwards that it is his best and only friend which he cannot possibly get on without.

Alcohol possesses one property in common with all agents (such as opium, chloral hydrat, and hashish) which act in a manner at all similar to itself on the nervous system; and this property it is of the very utmost importance that we should all of us fully understand. It is that when used at all frequently, or at all continuously, it creates a demand for itself. As far as this bare fact goes everybody knows it is true, but very few understand the full meaning of it. How is it that alcohol after being

taken every day or every few days for a certain length of time alters the system in such a way that whereas in the first place there was no desire to drink it there comes at last to be a strong desire to drink it? The answer to this question can only be reached by analyzing the effects of alcohol upon the human economy. The immediate effect of a moderate dose of alcohol upon a person who takes it for the first time is to produce a decidedly pleasurable feeling, the basis of which feeling is that the moral nature is so acted upon that the positive functions of love and faith\* are exalted, and the negative functions of hate and fear lessened or abolished for the time. Other effects are of course produced such as a quickening of the intellectual processes, and the power of liberating an increased amount of muscular energy. The effect upon the moral nature, however, is the main fact and it is upon that that we have to keep our attention fixed at present. Looking steadily at that and shutting out of sight every other element of the case we see that the man is made for the time better and happier. It is not possible, however, by means of alcohol or any other agent to preserve the moral position so attained. No matter how used, or how much be taken, the moral exaltation passes away after a very few hours, and then a condition of things sets in which is exactly the reverse of that which I have just described—that is—there is then established a moral state the essential elements of which are an exaltation of hate and fear and a diminu-

\*By "faith" I mean the opposite of fear—just in the same sense as love is the opposite of hate—used in this sense "faith" means that which is common to the three moral states trust, confidence, and courage; and has no special relation to any religious ideas or doctrines.

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tion or abolition of love and faith; a condition in which the man, instead of being better and happier than usual is worse and less happy. Well now you might think, as many thousands have thought, that the bargain was a fair one, that the man had had his pleasure and paid for it, and that he and alcohol were even all round, and that there was nothing to grumble about. But this is not the whole story. It is only the beginning of the story. Unfortunately the whole story cannot be told, but I am going to tell all I can of it. The next chapter begins this way: By means of a chemical agent the man's nervous system has been forced into a state which it would not have assumed of itself under the ordinary conditions of life—as soon as this chemical agent is withdrawn the efficiency of the nervous system falls as much below par as it was raised for a time above the normal standard. What we have left afterwards is the injury done by the process of forcing above mentioned. Let the forcing be done only once, twice, or half a dozen times and the injury is almost or quite inappreciable, so that the man will say and think that he is as good a man as he was before he used any alcohol. But go to the other extreme and let the forcing be done a few thousand times, then the injury which is really done every time that alcohol is taken in any quantity, but which is not at first noticed, becomes by gradual increase so great as to be unmistakable. What we find to be the habitual condition of the man's moral nature then is this: It is habitually depressed—fear and hate are constantly unduly prominent and love and faith are reduced to a minimum. Formerly the man took alcohol for the pleasure it gave him; now he takes

it to relieve him for a time from a state of suffering which is constant and which would be, without occasional relief, unbearable. But before the case has gone as far as this—half way we will say between the first glass and the condition we have just described—alcohol still gives pleasure, and the man can still do, or at least still thinks that he can do without it. But let the most moderate habitual user of alcohol not take any at all for a few days or a few weeks and he will have a feeling of unrest, discomfort, perhaps of vague fear, or of irritable temper—he will feel that he wants something; that he is not right. Now what does this mean? I will tell you what it means. The great nerve centres, the physical basis of all feeling and emotion have been injured by the successive forcings to which they have been subjected by means of this chemical agent called alcohol, and the product of feeling and emotion which they yield is therefore deteriorated in quality. You know that the intellectual product is also deteriorated, but we are at present confining our attention to the effects of alcohol upon the moral nature, *i. e.* upon the feelings or emotions; and we know that these are slowly but steadily degraded by this agent. At least every one of us who has had occasion to watch in ourselves or others the effect of the long continued, steady use of alcohol know this well, too well. But alcohol besides its primary, stimulating action has a secondary effect which is perhaps still more important for us to consider—and that is its sedative effect. As long as the man goes on taking alcohol every day or every few days this sedative action of the drug, by deadening sensation, hides from him the mischief that has been

and is being done—but let him not use any alcohol for a week or two then the sedative effect passes off and the unpleasant even distressing nervous sensations of which I have spoken no longer being concealed by the action of the drug are felt more and more plainly, and they declare in the plainest language the mischief that has been done. These very feelings which ought to be the strongest warning against the use of alcohol drive the man to a continued recourse to this agent. This road once fully entered upon the end can be predicted in nine cases out of ten. The supposed necessity for the drug becomes greater and greater, as the injury which it has done to the nerve centres grows more and more, and the man sinks downward lower and lower to a drunkard's death. If on the other hand the man awakened in time to a sense of danger, and a realization of the losing game that he is playing abandons the use of all alcoholic liquors—then the disagreeable feelings of which I have spoken gradually fade away—but no man who has used alcohol even in moderate quantities for several years will be fully restored to his healthy, natural feelings within a less time than from six months to a year after he has given up the use of it—and the effect of the alcohol may last much longer than this—many years or the rest of the person's life—in proportion to the quantity of alcohol that has been taken, the length of time the person has taken it, and the age at which it is abandoned. And it is my opinion after long and careful observation and thought that it will take a healthy system at least six weeks to recover fully from the excessive use of alcohol for one day.

No one denies that alcohol taken in quantities sufficient



to produce moral exaltation for say a part of every day for several years does injure the moral nature of the person taking it—that such a person is more prone to hate and fear than he was before he began to use the alcohol, and that his capacity for affection is materially lessened. But it is plain that this effect is produced gradually, and that since years of excess produce so great a change in the man days of excess must produce a proportionate amount of injury. We know that alcohol is capable of producing happiness—is there not then some way by which we can secure the happiness it is capable of affording without paying for it more than it is worth? If we could do this we should be really making use of alcohol, *i. e.* we should be getting something out of it over and above what we have to pay for that something—just as we do in the case of food, or as in the case of our natural affections—all of these we work for and in some sense pay for but the happiness or pleasure they afford us is out of all proportion to what they cost us. Could we not also in the case of alcohol so use *it* that the pleasure it is undoubtedly capable of affording could be enjoyed at such a price that after it was paid for a margin of profit would be left? Well let us see: In the first place it is certain, from the nature of the case that any moral exaltation derived from alcohol must be followed sooner or later by a corresponding moral depression; this is proved by universal experience, and I have never heard it denied by any candid person who had given alcohol a fair trial. But it is also proved by scientific considerations quite apart from experience, for science shows that alcohol does not supply any of the energy which it causes to be

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evolved by the organism when it has taken into it. But if it supplies no force itself, then when it causes an unusual amount of force to be given out by any part of the organism, it must leave that part of the organism more or less exhausted when its effect has passed off; and this is exactly what we find to be the fact. It is capable of the clearest proof, therefore, that alcohol cannot be profitably taken even if it left behind it no permanent injury to the nerve centres, and when we come to reckon this injury along with the discomfort of the depression immediately following its use, we begin to wonder how it is that men continue to take a drug the disagreeable effects of which are so immensely out of proportion to its agreeable effects.

Men take alcohol at first because its effect is pleasant; after taking it for some time, and finding that they are paying the full price in discomfort for any pleasure they are getting, they go on taking it because they find that they have not got the same nervous system with which they started in life, and that without alcohol they are not comfortable. They say: it agrees very well with such an one to abstain from alcohol, but *my* constitution is different from *his*,—it does not suit *me* to go without alcohol. This is true; they have made for themselves such a modified constitution that without alcohol they suffer. This fact, which alone ought to make them drop alcohol as they would a venomous serpent, makes them continue to use it. Then after still another period of a few years, more or less, when all doubt is gone, and they see that alcohol does not after all suit their constitution, but that it is killing them—at this stage (the most lamentable condition to which human nature is liable) alcohol has ceased to give any pleasure, but it must be taken to ward off for a few hours, or a few minutes, the intolerable misery of a completely shattered nervous system.

This is, in a few words, about how the case stands with alcohol and with those who use it. The full realization of the plain facts that I have stated decided me to give up the use of this drug once and forever,—and so convinced am I of the advantages of having done so, that no earthly inducement could persuade me to return to the use of beer, wine or whisky even in the smallest quantities. And I believe that whoever shall realize the facts that I have stated in this Essay, as clearly as I have realized them, will also not only give up the use of alcohol himself, but will do his best to get others to give it up too. Many good and wise men who urgently press upon others the disuse of alcohol, take a different ground from that which I take. They say : although it is a pleasure to you to take wine, you should forego that pleasure out of consideration for those of your fellow creatures who cannot use this agent wisely : for their sakes you should drink no wine, because if *you* drink it in moderation others following your example and beginning to drink it in moderation, will perhaps end by drinking it to excess. I have no objection to this argument, except that it does not go far enough. I say—and I know—that *no one* derives benefit from the habitual use of alcohol. I do not care how little or how large may be the quantity in which it is taken, or how wisely the taking of it may be regulated—but that on the contrary either the habitual or occasional use of this agent is always a losing game, and that the loss is just in proportion to the extent to which the game is played. I say that philanthropic considerations are not required in this argument, but that the more selfish a man is the more will he, if he is wise, shun all kinds of intoxicating liquor ; that the more earnestly a man desires, and the more intelligently he seeks his own welfare, the more certainly will he drink no alcohol.

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