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Hillier, S. 1866-  
University College, London. Library Services

### **Publication/Creation**

London : T. Werner Laurie, 1910.

### **Persistent URL**

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**POPULAR DRUGS  
THEIR USE & ABUSE**

**SIDNEY HILLIER, M. D.**





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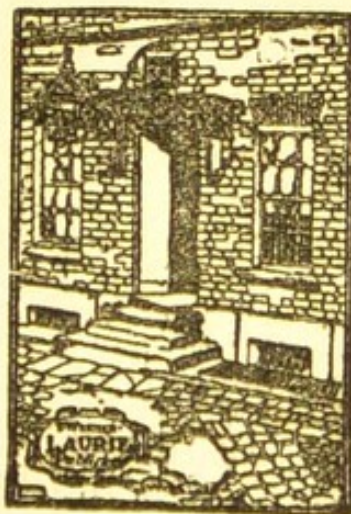
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# POPULAR DRUGS





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# POPULAR DRUGS

THEIR USE AND ABUSE

BY

SYDNEY HILLIER, M.D.



LONDON

T. WERNER LAURIE

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# POPULAR DRUGS.

## CHAPTER I.

IN these days of "strenuous life" and its consequent nerve strain and worry, most of us are interested in discussions upon the moderate and immoderate use of drugs. This interest is aroused, not only on account of very many people who now treat themselves for their various aches and pains, but also because there are so many instances of the drug habit that the baneful influence of excess is often apparent to us in a most realistic and painful manner.

In this book the term "drug" will be employed in its widest sense, and will include alcohol in its various forms, as well as other classes of drugs more especially used by the public, such as the sedatives, opium and tobacco, and the sleep-producers or hypnotics, such as chloral, sulphonal, and paraldehyd.

Whilst the consumption of alcohol, according to the latest statistics, shows some slight relative decrease per head of the population, the number of



persons sentenced to detention under the Inebriates' Acts in 1907 was considerably in excess of the number during any previous year.

No statistics are available relating to morphinism or other drug habits; but there is a very general consensus of opinion, amongst those who are best able to judge, that there is an increase in the number of persons addicted to one form or another of drugging. We must consider this serious question from various points of view, avoiding the alarmist attitude while we admit the grave peril.

Some of the causes of the growing custom of resorting to drugs that benumb or stimulate the brain are easily discovered. One important source of alcoholic intemperance and the use of drugs, such as morphia and chloral, is unquestionably the increasing prevalence of ailments affecting the nervous system. This is true especially in regard to the psychical side of the nervous organisation, and is exemplified by the increase of insanity, neurasthenia, and its allied conditions, hypochondria and hysteria.

Lecturing before the Royal College of Physicians Dr Savage, late lecturer on Mental Diseases at Guy's Hospital, states :—

“There is sufficient evidence to show that there is a steady increase in the numbers of the insane in England, Ireland, and Scotland. . .



"The increase is shown by my tables to be very large in 50 years . . . In 1906 there was one lunatic to 283 sane persons, the proportion being 35'31 per 1000 of population, whereas in 1859 it was 18'64 per 10,000. . .

"There is doubtless a growing nervousness, which means less ability to stand the strains of life; but it appears to me that the indication is rather to do all we can, not very much perhaps, to reduce these strains, and thus prevent mental breakdowns."!

In 1859 there were 36,762 certified insane persons in England and Wales. According to the last report of the Lunacy Commissioners for the year 1908, the total for England and Wales amounted to 128,787, an increase altogether out of proportion to the increase in population in these two countries in the same period. This is a matter of the utmost gravity.

But fortunately the increase in insanity is not as great as statistics appear to indicate. Many more people are diagnosed and treated for mental disease than was the case some years ago. The men and women who would fifty, twenty, or even ten years ago have been considered merely eccentric, feeble-minded, or prone to moods of melancholy, are now

<sup>1</sup> British Medical Journal, 30th March, 1907.



labelled as mentally unsound, and proper precautions are taken for their protection and the protection of Society.

Making due allowance, however, for this higher efficiency in dealing with these unfortunates, we cannot escape the fact that there is a very considerable increase in subjects suffering from mental diseases. Nor is there lacking ample confirmation that there is a very real and considerable increase in neurasthenia, hypochondria, and hysteria. Nerve specialists on the Continent and in this country are unanimous in echoing this view.

One authority lays special stress on one factor, while another emphasises other influences.

By many extremists, alcoholism is represented as accountable for a large share in the production of insanity and hypochondria; but it behoves us to receive with caution the dogmatic assertions of the enthusiastic propagandists of teetotalism.

No one doubts that alcohol in excess is productive of injury to nerve-tissue, but as a cause of insanity temperance advocates are liable to overstate the case.

The eminent alienist, Dr Savage says :—

“Alcoholic excess has long been considered to be one of the most powerful causes of insanity; any increase among the insane was looked upon as



depending upon such self-indulgence. England is now much more temperate than it was ; this is shewn by the greatly diminished consumption of all forms of alcohol, and by a general consensus of opinion that it is good to be temperate or teetotal. Notwithstanding all this, there has been no decrease among the insane, but a fairly steady increase. As a consulting physician I am much struck by the large number of teetotallers by whom I am consulted. This does not prove that such persons are unstable in consequence of their temperance, but it shows that teetotalism alone does not decrease insanity. Dr Mott has expressed the same opinion."<sup>1</sup>

During the last eighteen years, the ravages of influenza, a comparatively new scourge for the Western nations, have played considerable part in causing nervous breakdown—the influenza poison seems to have a special, selective effect on the nutrition of the nervous system. It is also a potent cause of insomnia, and it is noteworthy that the number of suicides rises rapidly in and after an influenza epidemic.

An inquiry into some of the more general causes of this weakening of the nervous system of modern society leads to the opinion that the evil is to some

<sup>1</sup> British Medical Journal, 1907.



extent the inevitable accompaniment of our civilisation. No one questions the benefits accruing to the human race through civilisation. But who can deny the existence of vices inseparable from the conditions of civilised life?

It is an incontrovertible fact that the nearer we live to Nature the healthier are our constitutions, and this applies specially to the nerves. Nor can it be questioned that the higher the state of civilisation, the more complex is the nervous organisation. The nerves are compelled to respond to a much more complicated and exacting environment. The resulting complexity of the nervous system renders it more susceptible to any abnormal strain, and more liable to break down under stress. Primitive races are scarcely conscious of "nerves," whereas civilised men and women are more or less "bundles of nerves."

Who can associate neurasthenia and allied conditions with the savage? Indeed, these conditions are exceedingly rare in our own country amongst the labouring classes, especially in agricultural districts. "Hodge" is very seldom a victim of "nerves."

A natural existence is impossible without ample fresh air, early rising, plenty of sleep, regular habits, plain wholesome food, and a plentiful supply of pure water.



How entirely opposed to this are the conditions of life of the majority in this strenuous age! The increasing struggle for existence amongst all classes, and the exacting calls of modern society render such an ideal mode of life almost an impossibility. The life of the humble peasant, "far from the madding crowd," with his regular hours, abundance of fresh air and plain diet, is incompatible with an unhealthy, nervous system. With few exceptions, our country cousins suffer far less from nervous troubles than the dwellers in the "hurly-burly" of our overcrowded cities.

With the advance of education in all classes, the professions, especially the scientific, have become more arduous. The curriculum of the medical profession, at one time only involving two years' study, now exacts at least five. Engineering, since the extension of the use of electricity and the great increase in the mining industry of the world, has become much more comprehensive and intricate.

The standard for the Law becomes higher every year, and the competition for the Army and Navy and Civil Services is growing keener. Not only is it more difficult to enter any profession, but when once admitted within its ranks, our troubles only begin, for we are faced with fierce competition.

It is estimated that the average income of the



medical practitioner in this country is about £200 per annum. In Germany and France the figures are said to be still lower.

One shudders on reflection upon the attenuated income of the average barrister. Amongst the engineering profession, we find that a considerable proportion of its members swell the ranks of the unemployed.

This doleful outlook meets us when we consider literature, art, and the stage. A large amount of unemployment and distress are to be found in these callings, while these precarious employments are underpaid. There is no brighter picture when we survey the world of business, for in comparison with 100 or even 50 years ago, the strain in commercial life is much greater to-day. We were in those days the manufacturing centre of the world. We are now fighting a hand-to-hand death-struggle with our two great commercial rivals, the United States and Germany. Our financiers, our merchants, and our retail traders, all feel the keenness of this great conflict.

In all human activities there is the same increase of stress. Political life has become much more exacting. All night sittings in the House of Commons are frequent; the sessions tending to become more and more prolonged. In addition,



there is the fevered restlessness of modern society, with its innumerable functions, entailing late hours, over-eating, and in many instances over-drinking; one perpetual series of engagements producing a chronic state of morbid excitement, nervous strain, and sleeplessness.

This unwholesome strain, if long-sustained, produces satiety and languor, and creates a dominant desire for more excitement as a relief from the inevitable reaction. The ordinary healthy channels of stimulation become exhausted. Hence the craving so prevalent at the present time for the bizarre, the sensual, and the titillating. This decadent tendency of modern society shows itself in various guises. In literature it is very conspicuous, and is instanced by the demand for a certain kind of fiction, in which the heroine is invariably of the neurotic-erotic type.

The same influence may be traced on the stage, in the recent rage for sensuous oriental dances, ostensibly highly classical, but often in reality vulgarly sensual. In art also, especially modern French art, examples of the sensational neurotic tendency are plentiful.

Another evil resulting from the distractions of modern society is the neglect of home life. A society dame has no time to waste on her children;



the maternal instinct is suppressed, and the children are in many instances brought up, during the most impressionable period of their lives, without the intimate relationship which should exist between mother and child. Left to the care of the governess or the servants, the children suffer for want of that affectionate parental control, which is so essential to them. The limiting of families, which is so common now, is, to a great extent, the outcome of the same causes, and is not without its evil results in the State and the individual.

This is an age of "make-belief." We are slaves to ostentation, the dupes of a system that impels everyone to appear flourishing and prosperous. We dare not show the white flag in this combat. "Nothing succeeds like success;" and an assumption of prosperity goes far towards assuring an income. This pose of success is the cause in many instances of that evil, but very easy, practice of living above one's income. All this fret and stress produce worry, and worry, if prolonged, means a shattered nervous system.

Certain sexual causes must not be overlooked.

"It would not be right if I did not express my opinion that the tendency of late marriages in men, the great limitation in the number of children, and the distaste of the mothers to nurse their children,



all have potent influence in producing mental instability."¹

Sexual repression, especially among women, is also one of the increasing ills of our present social system, and tends to produce a morbid nervous tone, while it is undoubtedly a fertile source of hysteria.

Sexual excess, although much less common than we are sometimes led to believe, must not, however, be ignored as a cause of neurosis.

The great importance of heredity as a source of weak neurotic stock, deficient in control, must not be neglected. Until the publication of Darwin's "Origin of Species," the study of heredity was not considered of the deepest importance. Since that time, in spite of desperate attempts on the part of the opponents of Evolution, the great truth which it conveys has become more and more apparent. At first the sphere of heredity was by its advocates limited more particularly to physical qualities; but recently its action, as affecting mental qualities, has been argued on all sides and established almost universally. If there is no soundness in the principles of heredity, then indeed, mentally and physically speaking, all men are born equal. But this is not the case, for all evidence goes to prove the contrary. We are all familiar with inherited taints, such as

¹ Dr. Savage B.M.J. 1907.



insanity, intemperance and other tendencies to disease. We have only to look around and we cannot fail to see evidences of the potency of heredity on every side ; not only amongst the lower animals, but amongst human beings as well.

The breeding of domestic animals is carried out on the basis of a firm belief in the power of heredity. Although obscure, the working of heredity is nevertheless unmistakably present for good or ill, in a greater or less degree, according to the strength of the family traits and characteristics. And in considering the health of the community, heredity unfortunately plays a very important part.

We say "unfortunately" advisedly, because at present the public at large are so opposed to any measures which savour of interference with the course of sentiment, that heredity has full sway to work its frightful havoc through the continuance of an unhealthy stock. As a doctor I often see consumptives paired with a healthy mate. Frequently men and women of very pronounced insane tendencies are allowed to marry ; while no restriction is placed on the union of alcoholics. At present, in these matters, we are ruled by sentiment rather than reason. We are as a nation slow to move, and in matters affecting the public health we remain behind our more pro-



gressive rivals, Germany, France, and the United States.

In the case of insanity, a false pride exists. Amongst many people mental unsoundness, instead of being regarded as a disease, is considered a disgrace, and this feeling leads to an injurious reticence resulting in harm to the community. This reticence undoubtedly leads, in many instances, to the glossing over of cases of insanity. The condition of the affected person is styled "mere eccentricity," "temper," or "excitability," no remedial steps are taken, very little control is exercised, and no restriction is placed on the marriage of the subject. The result is an unhealthy, neurotic stock, with little self-control, providing the sort of soil, in fact, in which alcoholism or the drug-habit are likely to flourish.

With a view to remedying these evils, a new theory of science has been advanced, styled "Eugenics." This term, signifying the science of good-begetting, was introduced by Dr Francis Galton, F.R.S., the great student of heredity. A vigorous campaign has been organised, and with the advance of education amongst the masses, these questions will be regarded in the near future from a different standpoint, and instead of concentrating our attention on the selfish interests of the living, more thought



will be given to the welfare of those who are yet unborn.

The hereditary effects on the offspring of intemperance in the parent are very marked. It is a matter of common knowledge that dipsomania is hereditary. But not only does Alcoholism beget Alcoholism, but it engenders in the children defects in the nervous system.

"Many children of Alcoholics show signs of stupidity, mental deficiency, moral instability, and lack of *normal control*, whilst others exhibit idiocy, epilepsy, and hysteria, together with various unbalanced cravings."<sup>1</sup>

Dr Norman Kerr reports the case of a family in which the first was a son and the second a daughter, who were both mentally and physically sound. After the birth of the daughter, the father became an habitual drunkard. He had four more children, of whom one was defective in mind, while the others were complete idiots. Examples such as this are numerous. The offspring of Alcoholics must therefore be regarded as likely to possess a weak mentality, with feeble control, and therefore a tendency to yield to pernicious habits.

Having considered some of the causes of nervous breakdown, a brief reference to the symptoms and

<sup>1</sup> Horsley & Sturge, "Alcohol and the Human Body."



results of the neurasthenic condition will not be out of place.

The symptoms of neurasthenia are very varied and very numerous, but it is not within the scope of this book to enter deeply into them. The distinguishing characteristics of this disorder are increased sensitiveness, with weakness, weariness, lack of power of endurance, defective recuperative power, and loss of control. Insomnia, too, is often a prominent symptom. These signs, in greater or less degree, are present in all conditions of lowered nerve power, and there is no sharp line of demarcation between so-called "nervousness," neurasthenia, hysteria, or hypochondria.

Over-work, excitement and worry, indicate that the organism is working at high pressure, especially on the mental side.

In a normal condition, the nerves respond in a normal manner to normal stimuli. High pressure, if maintained for any length of time, means excessive and abnormal stimulation, to which eventually the overtaxed nerves are unable to respond at all, or else respond abnormally. A condition of "brain-fag" is thus produced, and memory becomes defective. Instances of sudden loss of memory, resulting from brain fag, frequently



occur. Public speakers of great power and experience have been known to halt suddenly in the middle of a speech, quite unable to continue. This has occurred in the House of Commons and upon public platforms. Actors have been occasionally attacked by this malady.

As the result of this exhaustion of nerve power, the spur is applied to the "jaded horse" in the shape of a drug. The abnormal stimulation by means of drugging is very evanescent, and increasing quantities are required, as time goes on, to produce the desired effect; while sometimes a vicious circle is established, the evil becomes an increasing one, and unless strong measures are taken to arrest the craving in its early stages, the habit becomes established, and produces disaster. But it must not be assumed that this is invariably the case. Neurasthenia does not always result in intemperance or morphinism; it is only one of the causes. It does not necessarily follow that because a neurasthenic takes alcohol, or some other drug, in moderation, that he may not do so with advantage. Alcohol, in small doses, may be beneficial to the jaded, overworked, brain-weary, city man. In sleeplessness, hypnotics, used judiciously under medical supervision, are often invaluable.



All one can urge in these cases is that, given excessive wear and tear of nerve-tissue, followed by debility—in view of the *weakening of self-control* resulting—more care should be exercised in the use of alcohol and drugs, than would be necessary under ordinary, healthy conditions. For this reason it is laid down as one of the axioms of medical practice that the most careful consideration must be given to each case before morphia is exhibited. The use of this drug is contraindicated, especially in hysteria and allied conditions. Owing to carelessness in studying the personal equation, over and over again has the morphia habit been established by the reckless use of the drug among neurotic patients. That old-fashioned and popular remedy of dosing young girls suffering from painful menstruation with considerable quantities of some strong alcoholic drink, has also been the cause of much misery and many ruined lives.

Control is the power of limiting the sensual appetites by the dictates of the reason. This faculty of control is possessed in a high degree by some; in others it is feeble, and in others absent. We are all familiar with the type of man who has himself well in hand, the so-called strong character, who can if he so chooses become a non-smoker or



an abstainer at will. Not by any means conspicuous for his social qualities or his popularity, he enjoys the respect rather than the affection of his fellows. We all know the opposite kind of man—the cheerful, sociable, inoffensive character, popular because his will hardly ever clashes with that of his fellows; his power of saying “no” reduced to vanishing point through the constant subjugation of his will to that of others. He is easily led, easily acquires injurious habits, and his weak control is but a slight check to his downward course.

Of all temperaments probably the artistic succumbs more often than any other to excess. Essentially brilliant and highly-strung, the nervous system of the artist responds very acutely both to pleasure and pain. Hence any drug which relieves pain, either mental or physical, grips them with double force, and its effects are therefore more difficult to eradicate. Sometimes constitutionally below ordinary men in control, the artistic are thus, for more reasons than one, in danger of becoming slaves to drug habits. How many brilliant intellects have been ruined, and are in danger of being ruined to-day, by this inherent defect in will-power! Intellectually speaking, their very strength is their weakness.



In forming opinions on these social questions, the average man ignores the personal equation. The ignorant are too prone to consider all men constitutionally equal, and therefore condemn where they should only pity. In judging them, let us exercise tolerance ; in treating them as physicians exhibit patience and kindness. Harsh measures will only drive them to despair and add a heavier burden to their already unstable temperaments.

I may now sum up these introductory remarks by stating that in modern life there is an appreciable increase in that group of ailments associated with failure of nerve power ; and that, owing to the effect of heredity, not only does drugging beget drugging, but the tendency to neurotic complaints is accentuated in successive generations. This increased nervousness tends to augment the number of those who fall victims to the drug habit.

In the following chapters I shall deal with the various drugs which are most commonly used, both in moderation and excess ; and especially with those which engender the drug habit. I shall endeavour to show that, used in moderation and with discrimination, stimulants, sedatives, and hypnotics are of undoubted value. But the other side of the picture must not be lost sight of, and



the ravages resulting from excess cannot be lightly treated.

In any classification of drugs, there must be overlapping. Alcohol—primarily a stimulant, if taken in considerable quantity—becomes narcotic in effect. Opium, at first a stimulant, becomes after a time, sedative. Choral, sulphonal, and bromide are sedatives as well as sleep-producers.

This classification is made chiefly in reference to the pharmacological action for which the drug is most frequently used. Thus alcohol is used essentially for its stimulant action; opium for its pain-killing or sedative qualities; chloral and bromides for their sleep-giving qualities. Hence the three groups dealt with in the following chapters are:— Stimulants, Sedatives, and Hypnotics.



## CHAPTER II.

USES OF DRUGS — STIMULANTS — DEFINITION OF STIMULANTS — ALCOHOL — HISTORY OF ALCOHOL—ITS NATURE AND MODE OF PREPARATION — VARIETIES OF ALCOHOLIC BEVERAGES.

DRUGS are used to relieve symptoms and cure disease. In studying their action we are confronted with an extremely difficult problem. As the medical student is painfully aware, the human body with its elaborate structure and its numerous functions, presents most complex problems for solution. So complex that in many instances they have to be left unsolved. Physiology abounds in theories, the ingenious speculations of scientific authorities. If there were one normal type of healthy individual, if all were constitutionally alike, if all the functions were equally well performed in every individual, therapeutical difficulties would still be enormous ; but when we consider that no



two persons are exactly alike in their internal economy, our task appears still more intricate. This difference in the human organism shows itself in many strange ways. We prescribe in the ordinary routine way, and expect the usual results ; but sometimes, owing to the influence of that strange individual peculiarity, usually termed idiosyncrasy—of which no reasonable explanation has ever been given—we find very abnormal reactions occurring. Sometimes this peculiarity manifests itself in undue susceptibility to a particular drug. One patient may be salivated by a grain of calomel ; another dare not touch quinine ; a third is furiously excited by opium ; a fourth may show poisonous symptoms from half a grain of morphia. The bromides may produce a rash, and potassium iodide symptoms of a severe head-cold. On the other hand, we find instances where only very large doses succeed.

Why do certain articles of diet disagree with some persons and not with others ? Why does one man in exposure take a simple cold, whilst another contracts rheumatic fever ? Until we can explain these curious phenomena, the healing art must remain, to a considerable extent, an experimental science. It is only by considerable experience and careful study that the evil resulting from idiosyncrasy can be warded off, and this is a



strong argument against indiscriminate and inexperienced drugging on the part of the unqualified practitioner.

The use of drugs may be symptomatic or specific. When we use a sedative, such as morphia, for the excruciating pain accompanying the passage of a gall-stone, we are treating the symptom pain and are not administering a drug which we know will cause the gall-stones to dissolve. On the other hand, when we use mercury in siphylis or antitoxin in diphtheria, we are introducing something into the system which we believe will be curative in effect, and in such cases we speak of the drug as having a specific effect on the particular disease for which it is used. It goes to the root of the matter, and, by curing the disease, it relieves symptoms as well. Hitherto diseases have, to a great extent, been treated symptomatically ; but thanks to the more recent advances in medicine and the introduction of the principle of serum-therapy, or treatment of disease by means of antitoxins, the remedial measures have acquired greatly extended scope, and a new field of specific treatment has been opened up.

Stimulants come essentially under the category of symptomatic drugs. A stimulant is a drug which increases the natural function of a part. Thus alcohol in small quantities acts on the nervous structures of the heart, improving the tone and



vigour of the circulation. Hence the rationale of its use in an attack of faintness. If the faintness is caused by weakness or degeneration of the heart muscle, the alcohol will not have any remedial effect on this condition, but will only help to alleviate the faintness which is a frequent symptom of disease of the organ. Of popular stimulants, alcohol undoubtedly ranks first in importance.

So much prejudice surrounds this question that in dealing with it, one feels a certain amount of trepidation. On the one hand, one is confronted by the total abstainer, the personification of bias and rigid, uncompromising doctrine. "Not a drop" seems to be written in indelible ink over his whole visible personality. He seems to say, "alcohol is a poison, always a poison, nothing but a poison." It assumes in his mind the guise of the mythical fiery dragon, exhaling poisonous fumes for the destruction of mankind. It is never beneficial under any conceivable circumstances, worse than useless as a drug, a danger and a menace as an article of diet. It obscures the intellect, excites the passions, and is a frightful social evil when taken in excess. According to this authority, nearly all crime, nearly all nervous diseases, mental and others, are attributable to its agency.

As an opposite example we have the manu-



facturer and retailer of alcoholic drinks, a very different type of individual, with his cheerful, breezy personality and suave manner. It is his business to sell as much as possible to all and sundry. The general public are inundated with alluring and ingenious advertisements of very old brandy, ten-year-old whisky, fruity ports and cheap champagnes. Whilst ostensibly deprecating excess, every effort is made to prevail on thirsty humanity to consume as much alcohol as possible. The moderate drinker has to steer his way as best he may between the two extremes. On one side he has to submit to the taunts, the scorn, the implacable hostility of the total abstainer; on the other he has to resist the blandishments and persuasive eloquence of the licensed victualler. Owing to this constant and bitter warfare between the abstainers and consumers, the consideration of the alcohol question has become a theme of great importance.

It may be regarded from various standpoints political, social, hygienic, and therapeutic. Politically the question lives with us. When are we without our Licensing Bill? The trade, or shall we style it the "trade militant," is in a state of perpetual warfare. Whether we are total abstainers, moderate drinkers or chronic alcoholics, the trade still arouses a certain amount of our sympathy;



for it is fighting a defensive campaign, fighting for its very existence, against tremendous odds. Each political party hits it, but one hits it harder than the other, it is only a question of degree. Considered socially and hygienically, it is an interesting speculation what would be the effect supposing alcohol in all its forms were abolished. Inevitably something would be required to take its place. We are not mere machines ; we are complicated organisms. Owing to this psychological factor, we are subject to a feeling of exhaustion after prolonged strain, either physical or mental, and a craving is excited, a perfectly physiological and normal craving, for some form of stimulation. This stimulation takes various forms. Alcohol, tea, coffee, cocoa, or failing any of these legitimate forms of stimulation some drug such as opium and its allies, is taken.

Take away alcohol and you inevitably invite excess in some other direction. Deprive the working-man of his beer, and he will probably become addicted to chewing strong tobacco in large quantities. The hard-working professional or business man debarred from his whisky and soda or wine would probably smoke more and smoke stronger. Possibly he would consume large quantities of strong tea or coffee. The unfortunate



class of individuals who, lacking self-control, must get drunk on something, would get drunk on opium or some other drug.

The principle of making people good by Act of Parliament is a mistaken one. Educate, point out the evils of excess, encourage moderation and self-control, and more lasting good will be effected than by the arbitrary elimination of an article of diet, which has in some form or other been almost universally consumed from the commencement of history. Admitting that there is temptation in moderate use of alcohol, then the moderate drinker is a stronger unit of society than a total abstainer. He is in daily contact with the "devil" of excess and resists it; by so doing he increases his self-control. A compulsory system of total abstinence from alcoholic drinks would not tend to a strengthening of the moral fibre of the community, but rather to the weakening of it. The evolutionary process is at work in this direction as in every other. Alcoholic excess tends to produce an unhealthy stock, and an unhealthy stock tends to die out. The only way in which legislation could assist this process would be by placing the incurable alcoholic under restraint and preventing his propagating unhealthy offspring. But this savours of an attack on that "Holy of Holies," so sacred to the total



abstainer, the "liberty of the subject," and although he would without a moment's hesitation willingly deprive millions of his fellow beings of the right of personal freedom in consuming a moderate amount of alcohol, he would hold up his hands in pious horror at the thought of in any way infringing the personal freedom of the very much more limited number of chronic drunkards, who are a menace to society in more ways than one.

*Ethyl alcohol* is the active principle in all alcoholic beverages. The proportion ranges from about 50 per cent or even more in so called "ardent spirits" and spirituous liquors, to 10 per cent in the case of lighter wines and 5 per cent in the case of the weaker kinds of beer.

Ethyl alcohol was first produced as a by-product in the distillation of wine. Marcus Græcus, who is supposed to have lived in the eighth century, first described the process. An Arabian alchemist named Geber, living in Spain about the same time, uses the term *Aqua Vitæ* for alcohol. In 1400 the German Benedictine monk, Basil Valentine, by redistillation obtained it almost free from water, shewing that at even this early period the members of this Order devoted their spare time to the production and investigation of strong drinks, the modern representative of which we have in the famous Benedic-



tine liqueur. Various other names are associated with its more recent evolution. Two chemists, Lowitsch and Richter, both succeeded in obtaining alcohol quite free from water in 1796. De Saussure in 1814 discovered its composition, and Cagniard-Latour in France and Schwann in Berlin in 1836 discovered the yeast fungus, and decided it was the cause of alcoholic fermentation.

When first produced *Aqua Vitæ*, as it was called, was not used as a beverage, but was sold by the "quacks" of those days as a secret remedy to prolong life, restore youth—in fact a panacea for all the ills that flesh is heir to.

"Mankind has grown old and has become feeble; therefore God has given him this water of life, that he may grow young again. It will be the source of a new life for mankind." So spoke Arnold of Villanova in 1504. This quotation is interesting as shewing the popular estimation of the drug in those days; and it also shews that human nature in its desire to prolong life was the same in olden days as it is now. The ancients hoped to accomplish it by means of alcohol; modern science hopes to accomplish it by means of sour milk!

Since the drug was thought to possess such valuable properties, it is no wonder it was used



in the Middle Ages and has continued to be used therapeutically to the present time.

The various "ardent spirits" are obtained by distillation from fermented liquids, and their odour and flavour depend on the nature and source of the fluid from which they are distilled ; this difference in their taste and smell is due to the various volatile oils or ether which they contain, either purposely added or resulting during their manufacture.

*Brandy*, when of the best quality, is distilled from wine or fermented grapes. In France *eau-de-vie* is the name applied to brandy of an inferior quality, and it is made from wine, cider, perry, grape-skins left after wine-making, cherries, plums, or other fruit. The best brandy, wine spirit proper, *eau-de-vie de vin*, is made in every part of France in which wine is made ; but there is no doubt the best brandy comes from the Cognac region from wine grown therein.<sup>1</sup> The toxic qualities of a spirit depend to a great extent on the amount of fusel oil it contains. Brandy distilled from wine contains only a very small quantity, but *eau-de-vie* contains a much larger quantity. Algerian brandies are said to be of high quality. Spanish brandies are stated to be similar

<sup>1</sup> Cognac, as the description of a spirit, is not expressly defined in the French law, but the name "*eau de vie de Cognac*" can only be applied legally to spirits made in the Cognac region from wine grown therein.



in flavour to the French liquor and to command a high price.

Egyptian brandies possess a full flavour and are very cheap. Some so-called Egyptian brandies are not distilled in Egypt, and are probably made from currants grown in Greece.

Hamburg brandy is the name commonly given to a spirit stated to be manufactured in Germany from potato or beet-spirit, and flavoured so as to imitate grape-brandy; and similar imitations are made in the north of France, in Belgium and other foreign countries. British brandy is made by redistilling duty-paid spirits with flavouring ingredients, or by adding flavouring materials to such spirits. It is often mixed with foreign brandy, generally Cognac, and is largely sold for cooking purposes.

The conclusion come to by the Royal Commission which sat in February, 1908, was "that the term brandy is applicable to a potable spirit manufactured from fermented grape juice and from no other materials." On an average brandy contains about 42 per cent of alcohol. With so many adulterated and spurious imitations in the market, it is necessary to pay a high price in order to obtain a really good, sound brandy.

*Whisky* is probably the most popular spirituous alcoholic drink amongst the English-speaking com-



munity. In the manufacture of *pot still* whisky in Scotland, barley malt is generally the only material used ; but in Ireland it is usual to employ a mixture of barley malt and unmalted barley, oats, wheat, and rye, maize being generally excluded ; but four-fifths of the whole usually consists of barley malted and unmalted. In the *patent still* process the materials used in the manufacture of whisky are much the same both in Scotland and Ireland, being malt, maize, barley, rye (malted and unmalted), and oats used in varying proportions.

In consequence of a decision in two prosecutions brought by the Islington Corporation to the effect that patent still spirit could not be styled whisky, a Royal Commission was appointed in February, 1908, to consider the manufacture and properties of whisky. It appears the name whisky did not come into use until the end of the eighteenth century ; before that date the spirit which had been manufactured in Scotland for two centuries was termed *Aqua Vitæ*.

All whisky is made by mashing grain, which is crushed and extracted with hot water ; the starch of the grain being more or less converted into sugar by the diastase of the malt. The liquor resulting from this mashing process is termed "wort." The wort, cooled to a suitable tempera-



ture, is treated with yeast. The yeast converts the sugar existing in the wort into ethylic alcohol. At the same time certain other constituents of the wort undergo chemical change, giving rise to substances which influence the flavour of the finished whisky. The liquor resulting from this fermentation is termed "wash." The "wash" is heated in a vessel known as a still, and the alcohol and secondary constituents pass over from the "wash" to a cooling apparatus, and are there condensed and finally received into another vessel. The object of the distillation is to separate the more volatile products of the "wash," and at the same time to effect their concentration and purification. The simplest varieties of pot still are used in Scotland; they are usually treated by direct fire. Two distillations are employed.

The pot stills employed in Ireland are generally much larger than in Scotland. In Ireland three distillations appear to be practised.

The object of the patent still, invented in 1831, was primarily economy, the loss of heat being diminished, and the clean spirit being obtained by a single process. Owing to the nature of the process in the patent still, the secondary constituents in the whisky so made, are fewer in number and generally less in total amount, and the bulk of patent still



whisky is used for blending with pot still whiskies. The product of the patent still is more nearly pure ethylic alcohol than the product of the pot still, the latter containing a larger proportion of savourous, secondary products which appear to give the flavour the connoisseur finds palatable. The pot still whisky is used for the most part to give the desired flavour to the patent still whisky, which is a more featureless beverage.

As a result of the inquiry, the Commissioners do not recommend any additional provisions for the protection of the consumer. Nor after hearing medical evidence are they able to attribute any difference in results in the treatment of disease attributable to the mode of preparation of the whisky. In conclusion, they define whisky as "a spirit obtained by distillation from a mash of cereal grains saccharified by the diastase of malt. 'Scotch whisky' is whisky, as above defined, distilled in Scotland ; and 'Irish whisky' is whisky, as above defined, distilled in Ireland."

Whisky contains from 44 to 50 per cent of alcohol.

*Rum* is distilled in the West Indies especially from the fermented products of the sugar cane. For some years a cheaper imitation of rum has been made on the Continent, principally in Germany,



and according to the recommendations of the Select Committee of 1891 rum is now entered under two heads :—

Rum (imported from ports in sugar cane producing countries).

Imitation rum (imported from ports in countries in which the sugar cane is not produced).

Imitation rum may not be blended or mixed in bond with "rum" for home consumption<sup>1</sup>.

*Gin* should be made from maize, malt, and rye. Juniper berries are regarded as essential for the subsequent flavouring, but various herbs are also used by different makers. All the witnesses examined by the Royal Commission of 1908 objected to the use of molasses on the grounds, first, that gin is essentially a British spirit, which the consumer expects to be made from grain ; and, secondly, that molasses yields a coarse spirit unsuitable for its production.

"Hollands Gin" is imported into this country from Holland, and is similar in many respects to English gin, inasmuch as the genuine article is made from grain only, and flavoured with juniper.

It appears that a practice has grown up of selling

<sup>1</sup> The Commissioners in 1908 define rum as "a spirit distilled direct from sugar cane products in sugar cane growing countries." Rum contains 40 to 50 per cent. of alcohol.



under the name of Geneva, a spurious spirit produced by a mixture of molasses spirit with a little of the genuine article. Gin contains about 31 per cent. of alcohol.

*Kirsch* or kirsch-wasser is a raw spirit distilled from cherries, and is largely drunk in Germany.

*Arrack*, principally consumed in the East (India, Siam, and Malay Peninsula) is a spirit distilled from a fermented infusion of rice.

*Vodka*.—A harsh, noxious, strong, fiery spirit, prepared mainly from the fermented wash of rye, but also obtained from barley, oats, and rye mixed. It is principally consumed by the peasants of the Russian Empire.

*Liqueurs* and *Bitters* have no definite alcoholic strength. Liqueurs owe their sweetness to added sugar, and their characteristic flavours to various aromatic substances. Curaçao is flavoured with orange peel; Noyeau with the kernels of the peach and apricot; Maraschino with a flavour derived from cherries; Kümmel with cummin and carraway seeds; Anisette with aniseed and coriander. The exact composition of Chartreuse and Benedictine is a trade secret, but they are distilled from a mixture of various aromatic substances. Absinthe is bitter, being flavoured with wormwood. Some foreign countries have placed restrictions on the sale of



certain liqueurs owing to the toxic character of the materials used in their manufacture. The sale of absinthe has been entirely prohibited in Switzerland, and in France it can only be sold at a high alcoholic strength, with a correspondingly small proportion of wormwood extract.

*Wines.*—The most ancient and popular drink, obtained by fermentation from the juice of the grape. The term wine is, however, also applied to the fermented juice of the saccharine fruits, such as the orange, elder, gooseberry, and currant. Wines differ not only on account of the kind of grape from which they are produced, but also vary very considerably in character as the result of different conditions of soil and climate under which the grapes are grown. Differences also arise from the degree of ripeness when the grapes are gathered, and also from the mode of manufacture.

In a cold, wet season the grapes do not ripen thoroughly, and the wine in consequence is more acid and contains less sugar. Warm, dry summers mean a ripe grape and a good quality wine. Light grapes are used in the manufacture of white wines; black grapes are used for making red wines. In the case of the red wines the juice is fermented together with the skins and stones (and sometimes the stalks) and the colouring matters as well as the tannin



they contain are dissolved out into the wine. For this reason red wines alone contain any considerable amount of tannin.

Certain wines are "fortified" by the addition of spirit, especially those of Spain, Portugal, and Madeira. This addition is to check fermentation before all the sugar is exhausted. These wines in consequences are heavier, have more "body."

Where the fermentation proceeds more slowly, as in France and Germany, it is allowed to terminate spontaneously, and the sugar is almost entirely used up. This results in a drier wine, which matures more rapidly and acquires a fine aroma. In the manufacture of sparkling wines the effervescing character is produced by a second fermentation set up by the addition of syrup. Liqueur is added to give the wine a special flavour.

The amount of alcohol in wines varies from 6 to 25 per cent. A wine produced by normal fermentation of the grape cannot yield more than 17 per cent. of alcohol; anything beyond this must be added.

Sherry	contains	23	per cent.	of alcohol.
Port	"	22	"	"
Champagnes, hocks, and burgundies,	"	11	"	"



Clarets,	contains	9	per cent.	of alcohol.
Chablis,	„	8	„	„
Orange wine, rasp- berry wine, and other British wines,	„	10 to 12	„	„

The red wines, owing to the tannin they contain, are astringent and tonic. There is much adulteration of the cheap, red wines imported into this country from France.

White wines contain little or no tannin and more free acid than the red wines.

*Cider and Perry*—Obtained respectively by fermentation from the juices of the apple and pear. They contain from 5·9 per cent. of alcohol.

*Beer* is a fermented infusion of malt, flavoured with the bitter extractive of hop. The amount of alcohol in German beers varies from 3 to 5 per cent. English beer contains rather more. Strong Scotch ale contains 8·5 per cent.; English beer for exportation, 7 per cent.; London porter, 5 per cent. It has been calculated that on an average a pint of beer contains an ounce of alcohol.

No beverage has been more subjected to the searching light of criticism in its manufacture than beer. The brewers have been attacked in the



bitterest manner for using undesirable substances and manufacturing impure beer.

No doubt malt substitutes, hop substitutes, and various chemicals for preserving beer are used. In fact the trade make no secret of this, but maintain they are only used to a very trifling extent, and that great care and attention is bestowed in selecting wholesome material. I quote from a letter appearing in the "British Medical Journal," March, 1909, signed by Mr Chapman, the Hon. Secretary of the Society of Public Analysts, Mr Moritz, Ph. D., Scientific Adviser to the Brewers' Society, Mr Salamon, Past President of the Institute of Brewing, and Mr Baker, Secretary, Institute of Brewing:—

"On reference to the brewing returns for the year ended September 30th, 1908, it will be seen that 34,953,274 bulk barrels of beer were produced during the year in question, in the brewing of which were used 50,960,923 bushels of malt and 4,196,406 cwt. of grain materials (chiefly unmalted barley, maize and rice) and sugar. Calculating from these numbers it will be found that 82 per cent by weight of the total brewing materials used during the year in question consisted of barley malt. In regard to hops, it may be pointed out that the substitutes employed amounted to only 0·007 per cent, which is obviously an utterly insignificant and negligible quantity.



The grain materials, other than barley, consisted almost entirely of maize and rice prepared with the utmost skill, and generally of a much higher degree of purity than the same cereals in the condition in which they are used in the kitchen for the preparation of puddings and other dishes. The sugar consisted chiefly of cane sugar, invert sugar (the main constituent of honey) and starch sugar, with a small quantity of caramelized or burnt sugars, for their special flavouring and colouring properties. These are all absolutely unexceptional in respect of purity and wholesomeness, and, it may be added, are largely used in the manufacture of confectionery and other food products. With reference to preservatives we may point out that these are not, and cannot be, used in substitution of any proportion of the hops, but are employed in minute proportions in certain beers for well-defined technical reasons, which it is difficult to deal with in a letter such as this, but which we should be pleased to place before your readers in another communication."

"We venture to assert there is no brewing material used in this country at the present moment which has not been carefully examined by some skilled expert. In addition to this we may point out that the materials used in brewing



are subjected to continual supervision by the officers of the Inland Revenue Department and their expert scientific advisers."

Without question, much of the criticism levelled at the brewer by the temperance advocates has been very prejudiced, and he has had to contend against misrepresentation of the grossest nature. It must be admitted, however, that in the past there has been a certain amount of injurious adulteration in the manufacture of beer; but at the present time it is questionable, in view of the inspection and analysis of materials used in brewing by the Inland Revenue officials and the keen competition in the trade itself, whether deleterious substitutes are now used to any appreciable extent in the manufacture of our national beverage.



### CHAPTER III.

ALCOHOL IN MODERATION—ITS ACTION ON THE BODY—ITS USE IN MEDICINE—ITS USE IN DIET.

PROBABLY no question has been more strenuously debated, than the action of alcohol on the body—and its use as a drug. The unprejudiced student has to exercise very nice judgment, in weighing the balance, between the total abstainers who repudiate alcohol absolutely and entirely, and those who affirm its value when used with discrimination, both as a food and a medicine. I hold no brief for either side, and the views expressed represent, as far as I can judge, the views of the great majority of the medical profession.

On the brain and nervous system alcohol acts primarily as a stimulant, but this is followed very shortly by a depressant effect. If more alcohol is taken, a period of mental excitement supervenes, with impaired muscular co-ordination. If a still



larger quantity is taken, coma ensues which may prove fatal. Thus at first stimulant alcohol becomes narcotic.

It appears to have a stimulating effect on the heart, causing a more rapid and stronger contraction of the left ventricle. This effect may be attributed to the dilatation of the superficial vessels which alcohol causes; for we know that the heart beats more quickly as soon as the arteries are dilated. Binz, Loeb and Bachem in Germany, and Dr R. E. Dixon and others in this country, however, maintain, that in small doses alcohol directly stimulates the nervo-muscular structures of the heart.

Is alcohol a food? The extreme school of medical reformers maintain it is not. The majority of scientific experts maintain that it is. Careful experiments have been made on human beings, and the general conclusion arrived at is: that moderate doses of alcohol diminish the quantity of the final products of the waste of albumen. The oxidation of the alcohol takes the place of the oxidation of the tissues, and in this way plays the same rôle as a carbo-hydrate. Farquharson, in his therapeutics, sums up as follows:—

“(1) That alcohol is oxidised, and when given in



small quantities is entirely consumed within the system, and that by this decomposition it develops vital force and heat.

(2) That it interferes with the oxidation of other substances, and therefore lessens tissue waste.

(3) That it is entitled therefore to be called both a food and a food-saving substance."

This is confirmed by Binz, Fraser and other observers.

Alcohol reduces the temperature. Its action in dilating the surface vessels, removes blood from the interior of the body; and it is spread out over the exterior and cooled. According to Dujardin Beaumetz, a portion of the alcohol ingested undergoes combustion at the expense of the oxygen of the hæmo-globin of the blood globules. He states :—"Alcohol, then, is a food, *un aliment d'épargne*, which instead of promoting combustion (of the tissues) on the contrary retards it by withdrawing a certain quantity of oxygen from the blood corpuscles. It is to this action on the blood globules that it owes its power of lowering the temperature of the body, especially notable when toxic doses are administered."

It produces a feeling of warmth but in reality tends to lower the temperature. The popular view that alcohol is beneficial in cold weather is thus



proved to be fallacious. Alcohol has a stimulating action on the kidneys.

It seems, therefore, that the indication for the medicinal use of alcohol is as a stimulant, as a food, and when given in fever in considerable quantities as a reducer of temperature.

During the last thirty or forty years a remarkable change has come over the medical profession, with regard to the use of alcohol in the treatment of disease. The tendency has been to use it in diminishing quantities. In hospital practice statistics show that to a great extent milk has taken its place. Taking seven of the leading London hospitals, we find that in 1862 the expenditure on alcohol amounted to £7712, and expenditure on milk to £3026. In 1902 in the same hospitals the alcohol bill amounted to £2925, the milk bill to £9035. The intervening years showing a gradual proportionate change in their respective consumption.

Forty years ago it was the fashion amongst physicians to prescribe large doses of alcohol. No doubt this indiscriminate and excessive use of the drug, was the outcome of the dominant idea, that alcohol was a food, and also a temperature reducer. Its secondary depressing effect was overlooked, and also the fact, that by its stimulating influence, it was a force spender, using up the



reserve forces of the body. In the case of a year-old child with pneumonia, Anstie gave six ounces of wine daily for twelve days, and nothing else. Twenty-four ounces of brandy every day for periods of ten days, was a usual prescription in the case of adults. Further study of the secondary effects of alcohol, and also clinical experience of the effect of such large doses, has produced considerable limitation in its use; also there are fashions in therapeutics as in other things, and the change in medical practice may be partly accounted for in this way.

But another important factor which has helped to bring about this reform is the vigorous campaign against alcohol which has been waged by a certain group of medical specialists. They maintain in the press, on the platform and in books that as a food it is useless, and as medicine it is harmful rather than beneficial. Invariably it is stigmatised as a poison. This is, we think, overstating the case. Taken in excess, alcohol undoubtedly produces poisonous effects, but the same might be said of most drugs in the Pharmacopœia. In spite of this crusade against it by a certain section, it may be said without fear of contradiction, that although the tendency is to use alcohol more sparingly and with greater discrimination, the



bulk of the profession, both amongst clinical teachers, and amongst general practitioners, is convinced of its value in certain cases. In the *Lancet* of March 30, 1907, there appeared a document signed by sixteen eminent medical men, Professors and others, strongly criticising the views of the reformers as follows :—

“In view of the statements frequently made as to present medical opinion regarding alcohol and alcoholic beverages, we, the undersigned, think it desirable to issue the following short statement which we believe represents the opinions of the leading clinical teachers as well as of the great majority of medical practitioners.

“Recognising, that in prescribing alcohol, the requirements of the individual must be the governing rule, we are convinced of the correctness of the opinion so long and generally held, that in disease alcohol is a rapid and trustworthy restorative. In many cases it may be truly described as life-preserving, owing to its power to sustain cardiac and nervous energy, while protecting the wasting nitrogenous tissues.

“As an article of diet we hold the universal belief of civilised mankind that the moderate use of alcoholic beverages is, for adults, usually beneficial, is amply justified.



"We deplore the evils arising from the abuse of alcoholic beverages. But it is obvious that there is nothing, however beneficial, which does not, by excess, become injurious."

Among the signatories were T. M'Call Anderson, M.D., Regius Professor of Medicine, University of Glasgow; Sir James Crichton-Brown, Sir Dyce Duckworth, Sir Thos. R. Fraser, Sir W. Gowers, Mr Jonathan Hutchinson, Sir F. T. Roberts, Sir W. Bennett.

Alcohol when used medicinally is essentially a drug for acute diseases; it calls into action the reserve forces of the body which, but for its effect, would lie dormant, and in this way time is gained for the recuperative powers of the organism to assert themselves in their struggle with the poisonous microbes of the disease. Fevers such as pneumonia and typhoid, where there is often a critical period to be tided over, represent essentially the type of disease in which alcohol is most advantageous.

Formerly the routine practice in pneumonia and typhoid was to give alcohol throughout the entire course of the disease. Now, the orthodox plan is to withhold it until the pulse shows signs of failing, then to give it in considerable quantities.

In the grave attacks of syncope, sometimes



occurring in children, in diphtheria, it is very useful; and in certain other cases where there is repeated vomiting of all ordinary food, iced brandy alone has been retained.

A nightcap in the shape of a glass of hot toddy is often beneficial in old age in cases of insomnia; whilst a glass of wine, ale, or stout at meal-times during convalescence after a serious illness often aids digestion, and helps to build up the debilitated system.

Perhaps in the diseases of infancy and old age alcohol gives the best results. But there are no hard and fast rules for treatment. Bedside observation of the effect of the drug is the only way to decide on the dose, and to insure the best results on the patient. The occasions thus briefly indicated where alcohol may be administered are only a few out of very many conditions which arise from time to time in medical practice when the drug may be used with advantage to the patient. In the opinion of the writer, were alcohol removed from his annamentarium, the practitioner would be deprived of one of his most useful weapons.

Alcohol in some shape or form has been consumed as an article of diet from the earliest historic times. Its history is as old as the history of mankind. As far back as B.C. 2348



we are told in Genesis ix. 24, that "Noah awoke from his wine." Again, in Num. xxv. 7, "Strong wine was ordained to be poured unto the Lord for a drink offering." The Greeks and Romans poured out libations to their gods on the conclusion of a treaty of peace, and this strange custom also found a place in their convivial ceremonies and banquets. The savage hordes of Northern Europe at their feasts and orgies consumed large quantities of mead, a beverage which was the prototype of modern beer.

The Persian poet Omar Khayyam, who lived in the eleventh century, sings :—

"While the rose blows along the river brink  
With old Khayyam the ruby vintage drink."

A little later in our own country Chaucer, in his *Canterbury Tales*, refers to our national beverage in appreciative terms :—

"And brought of *mighty* ale a large quart."

Milton, too, pays a tribute to the social qualities of alcohol, for in *L' Allegro* we find :—

'And the young and old came forth to play  
On a sunshine holiday,  
Till the live long daylight fail,  
Then to the *spicy nut-brown ale*."

Also Tennyson :—

"In after dinner talk  
Across the walnuts and the wine."



makes an appreciative allusion to the mellowing influence of alcohol.

These references show that alcohol has played an important part in the social life and customs of mankind. It is also of interest to find that most of the literature bearing on this subject is of an appreciative nature. The Ancients evidently considered alcohol a blessing rather than a curse. This is due, no doubt, to its property of inspiring conviviality and good fellowship. How dull would become our banquets and our dinner parties without its cheering effect! How many brilliant after-dinner speeches should we lack, how many witty sayings would go unuttered! Were alcohol abolished, what a blank would be left in the social life of the community! After a hard day's mental work, when the brain feels tired, dull depression hangs like a millstone round the neck, and the effort of conversation seems almost too great to be borne, the influence of alcohol will completely change the mental tone. At a dinner party it cheers, it excites the ideational centres, provokes the flow of conversation, and contributes largely to the success of the evening. We cannot help feeling a considerable amount of sympathy with the ancient Psalmist when he sings of "Wine that maketh glad the heart of man." It is true that the total



abstainer warns us of the danger of excess. Excess in every direction is an evil—excess in eating, excess in smoking, excess in tea or coffee drinking; in short, excess in any form is to be deprecated. I would ask the temperance reformer this question: Why should the twenty moderate drinkers suffer for the one intemperate person? I would remind him, to parody an old saying, that “the treatment of excess begins at home.” Let him treat his backslider and leave the twenty moderate drinkers to shape their own destiny.

Various considerations suggest themselves in connection with the dietetic use of alcohol. No hard and fast rules can be laid down. The personal equation is much too variable and uncertain. Individual habits and idiosyncrasies have to be taken into consideration, and although I shall endeavour to arrive at some definite conclusions, it may be said, with certain limitations, that every man must be a law unto himself.

I think that I am not overstating the case in saying that an ordinary, healthy adult may take without injury, one and a half to two ounces of whisky (or other spirits), or two pints of light ale, or the equivalent in some other form of alcoholic drink, in the day.

Possibly I might go further and state that in the



case of a young, vigorous man, taking much violent physical exercise, producing excessive tissue waste, even more might be consumed without injury. The same applies to the hard-working labourer, the performance of whose daily work entails great output of muscular energy.

On the other hand, one may say with equal confidence that the business or professional man, the bank clerk, or others following sedentary occupations, ought not to exceed the quantity stated above.

Earn your liquor, is a dictum which applies equally in a physical as in an economic sense. Unfortunately, it is too true ; the general tendency is to eat too much, especially too much meaty food. Alcohol at meal times increases the appetite, it also tends to limit tissue waste. In health, tissue waste rarely proceeds too fast. Thus alcohol, unless great moderation is exercised, is doubly injurious to the sedentary individual.

Violent exercise not only entails increased tissue waste, but also excites the excretory glands to more vigorous action. In this way, although more effete products result from the exertion, they are by the same agency more readily eliminated.

Some such explanation as this is needed to account for the enormous quantities of port wine,



and equally enormous quantities of meat, which used to be consumed by the typical sporting English squire ; quantities, which, in the case of a sedentary individual, would very soon prove fatal, in his case—thanks to his galloping twenty or thirty miles across country several days a week—enabled him, except for an occasional attack of gout, to live in good health in many instances for the allotted span of three score years and ten.

To the working-classes whose food is very much restricted in variety, quantity and quality, to whom meat is a luxury and whose usual diet is bread and cheese, or some equally undelightful substitute, life without beer or some other alcoholic drink, would be even more dull than it is now. The need for alcohol in this case is much greater than in the case of those more fortunate individuals who have abundance and variety of other food.

Take again the case of the over-worked seamstress, the victim of sweated industry, the martyr immortalised by Hood in his " Song of the Shirt," whose solid food is of the simplest and most unappetising character and whose drink consists entirely of tea—a sufferer probably from anæmia and dyspepsia. In her case an occasional glass of beer, instead of the injurious infusion of tannin, would be an undoubted change for the



better ; acting as a tonic, an aid to digestion, and increasing her general sense of well-being.

In old age some form of alcoholic drink at meal times is often very beneficial. The general vitality of the aged is deficient, the feeble digestion needs stimulating. Large quantities of solid food are contra-indicated. Alcohol is easily assimilated, aids digestion, produces its effect quickly, and takes the place of some of the more indigestible articles of diet. Over-eating is specially injurious in those of advanced years, and the substitution of a moderate amount of alcohol for some of the meat and other solids is advantageous. Its use is thus to be commended in the dietary of the aged.

One aspect of this question which should not be lost sight of, is, that the moderate drinker, who is also a moderate eater, is in a far better position than the total abstainer who often consumes excess of solid food.

The evils of over-eating are, to a great extent, ignored, and yet they are almost as much to be feared as those of intemperance, resulting as they do in many instances in obesity, loss of activity, and disease of the excretory organs and blood vessels. The temperance advocate with the short sightedness inherent in those of extreme views, concentrates his whole attention on one aspect of



the problem of dietetics and altogether overlooks the other, the dangers of which are only slightly less in degree.

Individual constitution has a most important bearing on the question. The greatest moderation should be exercised where there is a tendency to obesity. The greatest moderation and discrimination must be exercised by those of gouty habit. Beer, porter and stout, all strong, sweet or spirituous wines should be carefully avoided. Still Moselle, light hock, some of the best Hungarian wines, light, well-kept, fine quality Bordeaux, freely diluted with Vichy or other alkaline mineral water are permissible. Weak whisky and soda is probably the best drink in these cases ; but in all cases where disease exists, alcohol must not be taken at all, unless prescribed by the physician.

Reference has already been made to the antipyretic action of alcohol. This precludes its inclusion in the dietary of Arctic explorers. Experience has driven this truth home. There are cases on record where men have slept side by side in extreme cold, and those who had taken alcohol perished, whilst the abstainers survived. The hardy explorer cannot afford to leave anything to chance, and, except in very limited quantities for medicinal purposes, alcohol is ex-



cluded from the equipment of the traveller in cold regions.

The consideration of the dietetics of alcohol would be incomplete without some reference to it as a force producer. Some experiments were made by the late Dr Parkes of Netley Hospital. A number of soldiers of the same age and same type of constitution, living under like conditions, were collected and divided into two gangs *i.e.*, alcoholic and non-alcoholic. The men in the alcoholic gang were allowed beer unlimited in quantity. For the first hour or two the alcoholic gang went ahead at their labour, but after a time their energy began to flag, and before the end of the day the non-alcoholic gang had accomplished far more work. The gangs were then changed about, the alcoholics becoming the non-alcoholics, and again the result was the same. In considering these experiments which are always quoted by the temperance advocates, it should be pointed out that the amount of beer consumed was very considerable, and this affords no criterion of the output of work which could be performed by men only consuming say two pints of beer during the day. But even assuming, for the sake of argument, that non-alcoholic labour is more productive than labour accompanied by the use of alcohol, the fact remains



that in spite of his beer the British workman is able to do his duty; and assuming that he might do a little more work without it, it is unreasonable to expect him to forego one of the few luxuries he is able to enjoy, in order to put a little more money in the pocket of his employer. Many of the leading generals of the day report adversely of the effect of alcohol in the diet of the soldier. This is especially the case in campaigns conducted in hot climates. In the British Navy an extra ration of rum was always served to the men before a ship went into action, and judging by results, in the hand-to-hand fighting of those days in which our sailors excelled, this custom did not appear to have an enervating or weakening effect on them. No doubt in the army and navy among the rank and file self control is not very conspicuous. The very nature of their calling fosters recklessness in their habits. Under these circumstances the canteen is liable to become a source of great temptation, and excess a frequent occurrence.

When should alcohol be taken? Little hesitation need be shewn in answering this question. Alcoholic drinks, except very occasionally, should only be taken at meal times. The habit of drinking between meals must be strongly condemned. The only exception permitted is



possibly after some form of violent physical exercise, which has produced a feeling of exhaustion. Anyone leading a sedentary life should most strictly avoid taking any stimulant except at meal times, and he should not exceed the quantity stated as permissible.

It is the fatal custom, so prevalent to-day, of drinking between meals, which is productive of so much social misery and ruin. It is this custom which leads to the establishment of the alcoholic habit.

The absurd idea, which seems to be part and parcel of our modern social code, that when you meet a friend you must drink with him, is responsible for an immense amount of harm to the health and the pocket of the community. Judging from the amount of money spent in a market town, on market day, on drink, agriculture should be a flourishing pursuit. It is to be feared that in many instances this unfortunate propensity for promiscuous nipping spells financial ruin.

Sir William Roberts, with a view to ascertain the effect of different alcoholic drinks on digestion, made an exhaustive series of experiments. With regard to ardent spirits, such as whisky, brandy, and gin, he found that moderate doses, well diluted, promoted rather than retarded digestion.



A table-spoonful of brandy to a basin of arrow-root promotes its digestion.

It is surprising to observe how slight the effect of alcohol is on the chemical acts of digestion. Under 10 per cent of proof spirit there was no appreciable retardation. With 10 per cent retardation was only barely traceable. With 20 per cent there was quite a distinct retardation. Over this amount, however, the inhibitory effect was markedly increased.

These experiments therefore indicate that ardent spirits as consumed by a temperate person, in small quantities, well diluted, act as stimulant to gastric digestion, causing an increased flow of gastric juice, increase muscular movements of the stomach, and thereby increase the rate of the digestive process.

With regard to the less concentrated drinks, such as wines and beers, Roberts detected a marked difference in their effect on digestion as compared to that of spirits. They retarded digestion altogether out of proportion to the amount of alcohol they contained. He found this was the case in port and sherry, and in the lighter wines, such as hock, claret, and champagne; but ascertained the retarding effect of the latter to be much less than that of the others. This further retarding influence is probably due to the ethereal compounds and



saline extractive matters contained in these wines.

He states with regard to sherry that whilst half a pint would be highly inhibitory—and even three glasses slightly retarding to digestion—one glass would have a stimulating and beneficial effect. A pint of claret or hock would considerably interfere with digestion, whilst a glass or two would be beneficial.

Burney Yeo is of opinion that those wines agree best which are absorbed and eliminated most rapidly from the system. Champagne can be taken by some gouty persons with impunity, while claret will at once provoke an attack of gout; in others the contrary effect is produced, the champagne proving injurious and the claret wholesome; but in all, the test of the suitability of any wine to the individual, is the rapidity with which it is eliminated by that individual.

Roberts came to the same general conclusions with regard to malt liquors, but condemned beer when "flat" unreservedly. Beer is tonic as well as a stimulating drink; it also possesses some nutritive properties. When taken habitually, it tends to produce a plethoric state, and induces obesity. Excessive beer drinking interferes with oxidation and elimination to such an extent as to



lead to the accumulation in the system of imperfectly oxidised products, such as oxalic and uric acids, and so produces biliousness and goutiness. To avoid this the daily allowance should not exceed one pint of the stronger beers or two of the lighter.

Cider has diuretic properties owing to the alkaline salts it contains, and for this reason it has often been stated to be beneficial to the gouty. It is very apt to undergo acetous fermentation, and is then very injurious. It has been remarked that in cider-drinking districts rheumatism and stone are uncommon.

The general conclusions to be arrived at in connection with alcohol in diet are :—

That, in moderation, at meal times, alcoholic beverages, provided they are of good quality, and in the case of spirits well diluted, are beneficial. Owing to the quantity of cheap, adulterated wine on the market, and the high price of good brandy, probably the safest and most reliable drink is whisky, diluted with some alkaline mineral water.



## CHAPTER IV.

ALCOHOL IN EXCESS—ACUTE ALCOHOLISM—  
CHRONIC ALCOHOLISM — DIPSOMANIA —  
PSEUDO-DIPSOMANIA — DELIRIUM TREMENS  
— PATHOLOGICAL EFFECTS OF EXCESS —  
ALCOHOL AND CRIME—TREATMENT OF IN-  
EBRIETY—SECRET REMEDIES FOR ALCOHOL-  
ISM.

Differences of opinion may exist as to the use of alcohol in diet and medicinally, but all are agreed as to the evils of excess.

Alcoholic excess spells misery and ruin, not only to the drunkard and sot, but also to those dependent on him. To the toper it means disease, with its attendant suffering, a long downward course, of moral and physical deterioration, leading eventually to premature death. To the race, also, the injury can hardly be depicted too luridly.

The diseases which may arise from it in the individual are well recognised. Bright's disease, apoplexy, cirrhosis of the liver, neuritis, delirium



tremens, alcoholic epilepsy, to mention some of the most important, constitute a formidable list, one which may well arouse a sense of danger in the most reckless. In the case of the offspring, we find the ill effects shew themselves especially, on the brain and nervous system. Idiocy, epilepsy, feeble-mindedness afflict the children of the alcoholic with much greater frequency than the children of non-alcoholic parents.

The symptoms of acute alcoholism are more or less familiar to everyone. The tottering, rolling gait, the stuttering inconsequent speech, the glassy eye, the negligent, dishevelled, dissipated *tout ensemble*, once seen can never be forgotten.

Alcohol, like any other drug, shews variability in its effects. Usually, after taking a considerable quantity at one sitting, the person becomes talkative and reckless in his speech; this is the stage in which the incautious babbler may blurt out some secret, which in his more sober moments he would give anything not to divulge. From mere incautious verbosity, he passes to the stage of noisiness and emotional excitement, as his control becomes paralysed. When in this condition he may exhibit maudlin, exaggerated sentimentality, or he may become extremely ferocious. Next as the drug grips him with firmer hold, narcosis



begins, and dulness and heaviness succeed, followed, if more alcohol be taken, by a state of coma, when the unfortunate victim sinks into a deep sleep of oblivion, quite unconscious of his surroundings. Sometimes, however, vomiting sets in before the stage of coma is reached, and acting as a safety-valve rescues the drunkard from the last and often fatal stage of coma. There are many cases on record, wherein a man has swallowed a bottle of whisky for a wager, and sunk quietly into unconsciousness and death. Active measures such as the stomach pump are often employed to save the victims of this insane folly.

As a medical man many curious cases have come under my observation, resulting from a partial loss of consciousness and confusion of ideas. One instance I can recall, of a man in a drunken condition, going home late at night, carefully putting his shoes on the lasts, keeping his muddy boots on and getting into bed, clothes, muddy boots and all. Another, returning home in a drunken condition, was found by his wife sitting in a warm bath, with all his clothes on. A third, who had been drinking heavily in London, on coming round after his excessive indulgence, found himself in Glasgow. He had no reason for going there, and not the faintest recollection of how he



got there. A fourth, who had indulged too freely, was able to converse brilliantly with a friend of mine, whilst travelling home. The next day he did not remember who he was talking to, the subject of conversation, or the train by which he travelled.

A literary man informs me that in his own case alcohol sheds a glamour over everything ; people appear more interesting, more attractive, and he feels more benevolent. He seems to have a greater flow of ideas, more fluency of speech, more assurance. He never found it made him quarrelsome although, if attacked, he felt more ferocious. Later, there comes a reflective stage, in which he reviews all his past troubles, and they assume an exaggerated importance. There is a tendency to magnify any injuries that have been done to him. The same writer, however, assured me, that if he wished to do any literary work, alcohol was distinctly deterrent in its effects.

Many shy people drink to give themselves confidence, when about to face some ordeal, of which they are nervous, and undoubtedly the habit has often been established in this way. Possibly this may account for the liberal allowance of alcohol indulged in by many men in prominent public positions.



A well-known Alpine climber says he never feels so well as the day after imbibing a magnum of champagne.

Some habitual consumers of absinthe maintain that it differs in its effects from alcohol. Mr—— a musical composer, says when he was first in Paris, not previously having tasted absinthe, that he experimented as to its effects. On his first experiment, in which he drank five glasses during an afternoon, he found it quickened the flow of thought, and gave unusual brilliancy to his conversation. It did not make him feel drunk. Absinthe is said to be the drink of the artistic, as it seems to stimulate the creative faculty, and Paul Verlaine and other decadent poets made it their favourite form of stimulation.

In dealing with the large class of chronic inebriates some form of classification is desirable, and I have adopted that of Dr. Hare of the Norwood Sanatorium. Such classification must necessarily be somewhat arbitrary, as the one class is apt to show variations from time to time and to simulate another; but broadly speaking we may discriminate between three classes:—

(1) *Chronic Inebriates*. That large class who seldom go for more than a few hours without some form of alcoholic stimulation. The constant



“soaking” in their case has produced a remarkable degree of tolerance and these individuals seldom appear “drunk.”

(2) *Dipsomaniacs*. By no means so numerous, in whom the recurrent, invincible craving for alcohol precedes its consumption.

(3) *Pseudo-dipsomaniacs*. Considerably more numerous than the last class, but not so numerous as the first ; in which there is a recurrent, invincible craving for alcohol, but in which such craving did not precede, but invariably followed and depended on the consumption of alcohol.

As the type of acute drunkard is familiar to all, so also is the familiar figure of the chronic alcoholic :—

“The typical chronic inebriate presents many distinguishing characteristics. Almost always he has been for a more or less prolonged period a moderate drinker, and has passed imperceptibly into excess ; rarely can he state even approximately when he began to exceed. For the most part he does not become intoxicated, at any rate, overtly so. He has, in fact, through frequent small, but ever-increasing doses of alcohol eventually succeeded in establishing a high grade of tolerance. To this he is apt to refer with pride, regarding it in the light of a valuable acquirement,



and as an evidence of his powers of resistance. But herein he ignores the fact, though he is fully cognisant of it, that his acquired capacity carries with it a more than compensating incapacity, the total incapacity to remain even temporarily on his ordinary mental and physical level in the absence of his daily or hourly allowance of alcohol. His tolerance of alcohol is indeed an accurate measure of his intolerance of its absence. In severe cases the chronic inebriate lives in a constant terror of finding himself so placed as to be unable to procure alcohol in adequate amount, feeling assured that in these circumstances he would be more than threatened with some grave nervous complication."<sup>1</sup>

In my own experience as a medical practitioner two or three types seem to stand out conspicuously. One of the most usual is a stout, flabby, plethoric individual, expression rather of the furtive, hangdog, deceitful kind, dress and personal habits slovenly, movements rather slow, hand shaky, tongue large, flabby and furred and tremulous. Such a person will come to the surgery for advice, well knowing in his own mind what ails him, and yet will endeavour to the best of his ability to attribute his symptoms to any but the right cause. "Doctor, I feel a bit liverish. Have no appetite. Have a cough

<sup>1</sup> Dr, Francis Hare, 3rd Annual Report, Norwood Sanatorium,



first thing in the morning," or he may complain of nausea and indigestion. Perhaps he may complain of swelling of the legs, which become acutely inflamed from time to time. Brutal frankness, warnings, exhortations, threats, produce no effect. There are none so unsatisfactory to handle. The cause of the trouble is unmistakable, the indication of treatment evident, and yet the difficulties are insurmountable. A temporary improvement may be obtained, but relapse almost invariably occurs.

Another type, often seen, especially among business men in big cities—*habitués* of clubs and similar haunts—men who drink as much as one bottle of whisky a day, and yet from superficial observation show no ill effects. Leading active, busy lives, smart in appearance—outwardly appearing normal, and even healthy—yet their resistive and recuperative powers are sapped, and except in rare instances nature asserts herself, and their career is suddenly cut short in early middle life. Their friends are grieved and shocked at their sudden and unexpected demise. "Always so healthy, you know, never had any illness." So speaks ignorance.

The large class of drunken vagrants, sots, outcasts of society, who fill our gaols and workhouses, unfortunate pariahs who slouch along our highways,



covered with filth, hair matted, and dirty and verminous, clad in rags and tatters, with bloated and distorted faces, some with the fierce and savage expression of the wild beast, others showing the low cunning of the thief and swindler. These social derelicts are, too, the victims of Chronic Alcoholism, and form a section of the community which shames modern civilisation. Some drastic remedy is called for to rid society of this curse. Some form of compulsory detention, some restriction of their liberty is urgently required.

Dipsomania proper, according to modern views, is undoubtedly a form of insanity. Very frequently its occurrence may be traced to hereditary influence; but any direct injury to the brain, such as a blow, may cause it, or even sunstroke has been known to do so. It occurs in cases of epilepsy and in structural diseases of the brain. It frequently appears during puberty, and also at the climacteric. The premonitory symptoms of an attack which may last from a few days to a week show themselves by an alteration of character and temper, and indications of peculiar nervous irritability may warn the friends of an impending outbreak. The duration of the attack is variable, lasting one or two weeks, whilst the quiescent intervals last from two to twelve months. During the attacks the patient consumes enormous



quantities of alcohol, the moral sense being completely enthralled by the morbid craving, all regard for truth, decency or duty is lost. During the interval between the outbreaks, the patient is as a rule an abstainer, and has no desire for alcohol, and in those cases where he takes alcohol in moderation between the paroxysms he is not an inebriate. Unlike the chronic alcoholic, he has no tolerance of alcohol; in fact, on the contrary, he is often abnormally susceptible to its influence. Except when the brain has been weakened by frequent attacks, the patient seems to recover completely. Repeated attacks, however, always produce permanent intellectual and moral degradation.

It is important to recognise that in true dipsomania the alcoholism is a *symptom, not a cause of the disease*. In support of this contention Dr Hare quotes an instance of "non-alcoholic dipsomania:—"

"A gentleman of 50 had suffered for years from dipsomaniac outbreaks, recurring at intervals of three months. He now has mitral insufficiency and extreme breathlessness on exertion. There is no alcohol in his immediate environment, nor is he physically able to procure any. Yet his periodic dipsomania continues at its long accustomed intervals. He loses his appetite and becomes



sleepless, his "brain" working continuously in spite of all efforts to prevent it; he has intense irritability of temper and a continual desire for alcohol in quantity. These symptoms persist for just one week, as they did when he indulged in alcohol; then they subside somewhat suddenly."

The typical pseudo-dipsomaniac differs considerably from the true dipsomaniac. There are no danger signals, no warnings of the impending attack. Temptation in the shape of some form of alcohol invariably precedes the attack. There is no regular periodicity, but only an irregular one, dependent upon chance circumstances.

There is no definite duration of the drinking fit. When it is on, it only terminates from some complication, such as acute indigestion or physical exhaustion. Another difference between the two types is that pseudo-dipsomaniacs can at no time drink in moderation; a very small amount always leads to a drunken outburst. The true dipsomaniac may often be mistaken for the pseudo-dipsomaniac and vice-versâ. The dipsomaniac may overlook his premonitory symptoms, and may be convinced in his own mind that the first drink of a period of inebriety was the result of some accidental circumstance, and does not realise it would have had no effect had a paroxysm not been due.



On the other hand, the pseudo-dipsomaniac may exhibit some periodic regularity. Any regularly recurring source of worry or stress may impel an attack. The payment of the quarterly rent, or the half-yearly balance, may be sufficient to upset the individual control.

The consideration of the effects of alcoholic excess would be incomplete without some reference to its chief complication, Delirium Tremens. This terrible disorder generally appears during a drinking bout, or shortly after it. In other instances it is produced by want of food, mental distress, or the onset of an acute disease along with the ingestion of alcohol. Sudden deprivation of alcohol in the case of an inebriate will often precipitate an attack. Early symptoms are loss of appetite, marked anxiety and restlessness, and tremor of the voluntary muscles. There is much insomnia, or short periods of sleep are interrupted by dreadful dreams; the patient sees horrible insects or reptiles crawling on the bed, which elude his attempt to catch them. If there is no improvement, these symptoms persist in an aggravated form; the patient's general condition becomes worse; he sinks into a state of coma and dies. Popularly this condition is well known.

The effects of the excessive use of alcohol on the tissues of the body are far reaching and distinctive.



The nervous system seems to suffer more than any other. Alcohol especially effects the functioning cells of the brain and spinal cord, causing them to shrivel up and eventually disappear, their place being taken by an increase of the tiny, supporting cells, which are of no value in mental processes. The other organs suffer in the same way ; the liver, and especially the kidneys, show corresponding degeneration. The results are destruction of the functioning cells and the increase of fibrous tissue which takes their place. These changes resemble those that accompany advancing years. Alcohol thus tends to shorten life by bringing on prematurely the special changes peculiar to old age.

Dr Hare lays great stress on the evil effects of alcohol on the kidneys. He says :—

“If we consider alone the class of chronic inebriety, and take note only of such patients as are still drinking on admission, the percentage of cases shewing albuminuria is at least 80 per cent.”

This general tendency of alcohol to reduce the functioning power of the organs must of course show itself in inefficient action and deterioration in the various functions of the body.

Elaborate experiments have been made by Kræpelin and other observers to show the effect



of alcohol in retarding mental processes. Kræpelin came to the conclusion that memory, ideation, and reasoning powers were impaired by alcohol:—

“Herbert Spencer remarks: ‘Incipient intoxication, the feeling of being jolly, shows itself in a failure to form involved and abstract relation of ideas.’ Schiller was wont to say: ‘Wine never invents anything’; and Helmholtz, one of the greatest observers and thinkers of the nineteenth century, noted in himself the effect of alcohol in interfering with the highest powers of thought and conception.”<sup>1</sup>

Many surgical accidents are caused by the effect of alcohol on the brain. Dr Miller, surgeon to Edinburgh Royal Infirmary, found that whereas the average number of accidents admitted on ordinary days was 5·65, on Saturdays, when wages were paid, the average amounted to 10·36; and he found that injuries to the head were especially prevalent on Saturdays.

Many accidents to children are due to mental inertia in alcoholic parents, who through neglect allow their children to burn and scald themselves. In Belgium 43 per cent of the accidents in mines and factories are due to alcohol.

<sup>1</sup> Horsley and Sturge: Alcohol and the Human Body.



The effect of chronic alcoholism on the emotions is easily recognised. In the case of a woman, her temper becomes irritable and fractious, and hysteria is common in drinking women. She is apt to romance, and "draw the long bow," and never admits that she drinks. She is easily reduced to a state of nervous prostration. She requires constant stimulation to keep her going. She becomes callous to ordinary social duties, and is careless of her personal appearance. Her husband, her children, and her home suffer neglect.

The effect of tippling to excess is rather different in a man. The emotional manifestations of hatred, fear, and jealousy are aroused, leading in many instances to the commission of crimes.

In Sweden, where the connection between alcohol and crime has been the subject of thorough investigation, during the decade of 1887-97 it was found that 71 per cent of criminals owed their imprisonment to the effect of alcohol.

An investigation made by Dr Sullivan discloses the fact that out of 200 male offenders, convicted of murder or grave homicidal attempts, the number of cases in which criminals were of alcoholic habits amounted to 158; and in 120 of these, or 60 per cent of the whole series, the criminal act was



directly due to alcoholism. In a larger group of 500 cases of less serious character, chiefly aggravated assaults, he found that 82 per cent were attributable to alcohol.

Much more evidence of a similar nature might be cited, but enough has been said to establish the causal connection between the two social evils, inebriety and crime.

We must now turn our attention to the treatment of alcoholic excess.

In dealing with the all-important question of the treatment of inebriety, as is usual where curative results are none too satisfactory, we are confronted with considerable difference of opinion amongst those who make a special study of this particular branch of medical practice.

Before referring to treatment proper, I propose to mention some of the legal stumbling-blocks with which the medical man has to contend.

In the first place, the doctor and the patient's friends labour under a great disadvantage, inasmuch as no inebriate can be placed in an institution of any sort against his will, unless he is convicted on indictment for offences punishable by imprisonment or penal servitude. If these offences were brought about by drink, or unless he has been convicted



summarily at least three times during the preceding twelve months of other minor offences, such as drunk and disorderly, drunk in charge of a child, and so on, he cannot be sent to an inebriate reformatory. In no other instance is it legally permissible to restrain a chronic inebriate against his will. It is however allowable under the Act of 1898 to receive and detain, for purposes of care and treatment, habitual inebriates, both dipsomaniacs and narcomaniacs, whose application is attested by a Justice of the Peace, and supported by a statement signed by two friends in proof of the existence of a habit of inebriety. Patients entering licensed retreats on such an application give up their personal liberty for a specified time, limited to two years, and during that period may be subjected to compulsory detention.

As at present constituted, the law is defective and inadequate. A Royal Commission is now sitting to consider this question, and it is to be hoped early legislation may be forthcoming, to increase the powers of the medical practitioner, and those of the patient's friends in these cases.

Chronic inebriates, or dipsomaniacs who drink constantly or intermittently, who are unable to discharge adequately their obligations; who spend their money recklessly, who lie in bed instead of



attending to their affairs ; who readily give promise of reformation which they as readily break, and yet who from want of evidence cannot be certified as insane ; and who, although constantly on dangerous ground, just steer clear of legal penalties, ought to be liable to some form of restraint. The doctor in consultation with another medical practitioner or a magistrate, ought with the consent of the patient's friends, to be empowered to send him to a reformatory for treatment, as in the case of lunacy. So strong is the craving for drink in these cases that, as we might naturally expect, the offending party seldom gives his consent to the only measure which offers any hope of a cure, as by so doing he well knows he will be depriving himself of the only means of satisfying his craving. This is one point in favour of those institutions where alcohol is not suddenly and entirely removed from the patient's diet, and where reliance is placed on re-education of control by gradually reducing the amount of alcohol.

Those institutions which practise immediate total abstinence by the very rigour of their system scare the hesitating, wavering convert from screwing up his courage and taking the much-to-be-desired step. On this point Dr Hare says :—



“Many such patients have to my knowledge been prevented for years from entering a sanatorium, and even from seeking medical advice, because they understood that the invariable practice of the profession is to insist upon sudden abstinence from alcohol in all cases of inebriety.”<sup>1</sup>

One of the most important and essential curative measures is that the treatment should take place in an institution. The shortest period should be three months; if possible, a longer stay of six months or a year is desirable. An exception may be made in the case of true dipsomaniacs, who should remain for a shorter period, and return whenever the premonitory symptoms of an attack show themselves.

It is to be regretted that the number of “secret remedies” on the market, have done great harm in establishing in the minds of the general public a conviction, that there are certain specific drugs, which, if taken for a time by the patient in his own home, will effect a cure.

It is not to be denied that there are a certain, and apparently increasing number, of medical specialists, who believe that certain drugs help in removing the craving; but to rely on drug treatment alone, is to neglect one of the most important ele-

<sup>1</sup> Dr. Hare, 3rd Annual Report of the Norwood Sanatorium,



ments in the treatment. Assuming that certain drugs do create a temporary distaste for alcohol, this is not in itself sufficient to ensure a cure. Any system which omits the re-education of control, by strengthening the moral side of the patient, must be defective. From a long course of alcoholic poisoning the victim's moral and physical nature has become debilitated.

Prolonged careful supervision by medical experts is required, regular hours, total abstinence from alcohol, the amount of freedom regulated according to the condition of the patient, all of which the strict *régime* of an institution alone can give. These measures, by encouragement of self-reliance, self-respect, and a keener sense of honour and responsibility, are of great value in rehabilitating the control and general *morale* of the patient.

The cases of so-called cures from drugs alone, are probably only of a temporary nature. No drug is known to the profession at the present time which can effect a permanent cure unaided by compulsory abstinence and moral influence. In these cases probably "suggestion" comes into play, and possibly to the temporary distaste for alcohol caused by certain drugs, a measure of "faith healing" is also added.



The majority of experts treating inebriates in institutions, insist on immediate total abstinence from all alcoholic drinks. Some, however, practise a gradual reduction in the amount of alcohol, believing that by so doing complications, such as delirium tremens and alcoholic epilepsy, are less likely to arise. Dr. Hare, of the Norwood Sanatorium, is a strong advocate of this plan. On the other hand, Dr. Hogg, Dalrymple House, Rickmansworth, in his annual report, states :—

“Alcoholic liquor in practically every case is stopped at once, and yet during eighteen years, in which seven hundred patients have passed through my hands, only one case of delirium tremens has arisen after admission, and one case of alcoholic epilepsy, which was caused by a patient indulging in beer on an occasion when he was given liberty.” He also states that, in his opinion, those recover most rapidly whose alcohol is cut off suddenly.

With regard to the use of drugs to create a distaste for alcohol, we again have two schools—the greater number of experts discrediting their use, while a few strongly believe in their beneficial effect, combined with the gradual reduction of the dose of alcohol. The drugs principally used for this purpose are atropine, strychnine, used both by mouth and hypodermically, and the double chloride



of gold and sodium, used in the much advertised "gold cure." Full details of the atropine treatment are given by Dr. Hare in his annual report, and also by Dr. M'Bride in the *British Medical Journal*, April 30, 1904, and full particulars of the Gold Cure are given by Dr. Backwell Fenn in the same number of the same journal. It is significant to note, however, that, as well as the double chloride of gold, atropine is used in this treatment.

The atropine school maintain that the drug produces a distaste for alcohol; and whilst they do not uphold the drug as an infallible remedy for one moment, they consider, that used in conjunction with the usual sanatorium *régime*, it is distinctly beneficial, and greatly accelerates the rapidity of recovery.

In his Sixth Report, the Inspector for Scotland under the Inebriates' Acts, says:—

"No reliance whatever is put on any of the so-called drug cures of inebriety in these reformatories. Such a treatment a few years ago was given a fair trial in one of the reformatories and found to be useless."

All are, of course, agreed as to the use of sedatives in the various complications, such as mania and insomnia, and tonics in improving the appetite and in building up the system.



Dr. Hare strongly advocates the use of apomorphia in the paroxysms of dipsomania.

Hypnotic suggestion is now being used in some institutions with success. Dr. Astley Cooper, Cockermouth, informs me he has used hypnotic suggestion during the past twelve months, and is of opinion that in a number of cases it has proved of distinct value.

Complete statistics as to the results of treatment are impossible to get, as so many patients are lost sight of, but it is interesting to find that the percentage of cures in all private Homes and Sanatoria appears to be about thirty per cent. The best results are obtained, as is only to be expected, amongst those who remain longest under treatment. The results in cases of true dipsomania are not so good.

In State Reformatories, where the class of chronic inebriate is of a very low criminal type, results are less satisfactory.

It is interesting to note that the percentage of cures in Homes and Sanatoria where no reliance is placed on drugs is much the same as in those favouring the atropine treatment, and at present, until further and more elaborate statistics are forthcoming, all that can be claimed for the use of this drug is that it appears to hasten the cure; its



use does not appear to lessen the number of relapses.

There are a large number of much advertised secret remedies for alcoholism, all of them, according to their proprietors, infallible in their results. A careful investigation has been made into the claims of these quack nostrums by the *British Medical Journal* from time to time, and the conclusions arrived at were not favourable to them. The majority are of American origin. They are all based on treatment by drugs; three—the Hutton-Dixin, Tacquaru, and Tyson cures—can practically be purchased and taken at home. The Leyfield, Keeley, and Hagey only undertake patients in special homes, under special conditions. The Hutton-Dixin, Tacquaru, and Tyson are said to be vegetable in composition. The Leyfield and Keeley are called “gold cures.” Four—the Keeley, Hagey, Leyfield, and Tacquaru—permit alcoholic liquors to be taken during the treatment. One, the Hutton-Dixin, makes total abstinence a *sine quâ non*. All claim a large percentage of cures. The Hutton-Dixin claims to cure all cases; the Hagey ninety per cent.; the Keeley over seventy per cent.; and Leyfield eighty per cent. It is noteworthy there is rather a free criticism of each other's methods. For instance,



the Keeley advertisement warns its readers against the various pretenders to the gold cure, and mentions "bogus institutes" and "unfortunate accidents to the lives and health of their patients." The Tyson advertisement, on the other hand, warns the public against the dangers of the Keeley cure. Mr Hutton-Dixin announces that "he has cured thousands of the most hopeless cases in all parts of the world, many of whom were relapses from gold cure institutes." The Tacquaru pamphlet points out that strychnine is the principal ingredient in many of the cures, and adds, "but the danger of such a treatment is too obvious to necessitate any remark here."

The Leyfield describes the production of nausea as an early feature of the treatment; while the Hagey pamphlet comments on the uselessness of mere "pick-me-ups and emetics unless the will co-operates in the effort of cure and is toned up."

The advertising ingenuity of the proprietors of these secret cures, revealing as they do so much ignorance and assurance, would be amusing if we did not remember the tragic circumstances of those who are buoyed up to false hopes by them. The ruined husband, the heart-broken wife, exhibit the utmost self-denial, in efforts to scrape together the wherewithal to make up the large fee demanded for



the magic bottles, or the marvellous hypodermia injection which will reform the victim of intemperance. It is clear from the statements put forward by the proprietors themselves that the claims of infallibility are not supported by proper statistics or trustworthy testimony, and, judging from the fees charged, the stuff sold might indeed be worth its weight in gold.

The *British Medical Journal* in summing up the claims made by the various cures, decided they were unworthy of the support of the medical profession for the following reasons :—

“(1) The treatment is secret, so that no opinion can be founded on general scientific grounds as to the reasonableness of the claims made for the drugs in the treatment of the diseased condition—alcoholism—asserted to be benefited.

“(2) No proper statistics of results are published.

“(3) Testimony of cure is offered which is obviously insufficient.

“(4) Definite claims to infallibility are made which cannot be made in any department of medical treatment.

“(5) Cure is generally promised in a definite time, that is after a definite number of doses have been administered, which is absurd.”



## CHAPTER V

### TEA—COFFEE—COCOA

IT is a change to pass from a subject of heated controversy like that of alcohol, to the more peaceful, less debated topic, of tea, coffee, and cocoa, drinking. Let us first discuss the subject of that common stimulant, tea.

If it may be truly said of wine that "it maketh glad the heart of man," it may certainly, with equal truth, be said that tea maketh glad the heart of woman. To most civilised women, tea is *the* meal of the day. Deprive her of it and she is restless, irritable and querulous ; both mentally and physically she feels the need of it. There is no entertainment so universally popular among women as the afternoon tea party. There is something essentially feminine about it, something refined, delicate and cosy ; the warm, comfortably furnished drawing-room, the dainty tea cups, the silver tea service, the delicate aroma of the tea itself form a



*tout ensemble* which appeals to the æsthetic instincts of the gentler sex.

Place the average male in such an environment and he is quite out of place. He cannot smoke ; as a rule he cannot sit down, he feels awkward, out of his element. A woman adorns the picture ; he only mars it. And yet although the afternoon tea party does not appeal to men, the beverage is immensely popular with both sexes and at all ages, and enormous quantities of the beverage are consumed in England.

Chinese legend states that the virtues of tea were first discovered by the mythical emperor Chinung, 2737 B.C. It is quite certain from the historical narrative of Lo Yu that tea was used as a beverage in the 6th century, and that during the 8th century its use had become so common that a tax was levied on its consumption. From China a knowledge of tea was carried into Japan about the beginning of the 13th century. Till well on into the 19th century China and Japan were the only two tea-producing countries, and the product reached the western markets only through the narrowest channels and under most oppressive restrictions. In 1840 the Assam Co. was formed and thenceforward the cultivation of tea in India was carried on as a private commercial undertaking.



Tea - planting has also been successfully established in Natal. It has been tried in other regions without success. Cheap labour is a *sine quâ non*. So long as the western world depended on China for its supply, adulteration was rampant. The Chinese were expert in fabricating an artificial gunpowder tea appropriately known as "lie tea," consisting of the sweepings of warehouses. Other substances of an injurious nature also found their way abundantly into the tea.

On the introduction of tea into this country early in the 17th century, much criticism was aroused. Mr Henry Savile, writing to Mr Secretary Coventry in 1678, sharply taxes some of his friends, "who call for tea instead of pipes and bottles after dinner, a base unworthy Indian practice which I must ever admire your most Christian family for not admitting. The truth is all nations are growing so wicked as to have some of these filthy customs." A medical writer in 1722 says: "Among many other novelties there is one which seems particularly the cause of hypochondriac disorders and is generally known by the name of tea."

William Cobbett, M.P., a vigorous political writer, in his "Advice to a Young Man," early in the 19th century, says, "but I assert that to pour regularly every day a pint or two of warm liquid



matter down the throat, whether under the name of tea, coffee, soup, grog or whatever else, is greatly injurious to health." At first the price of tea in England ranged from £6 to £10 per lb.

A great many varieties of tea are now imported into Britain from India and Ceylon as well as China. The composition of dry tea is stated to be as follows :—

	Hyson. Green.	Congou. Black.
Volatile oil. . . . .	0·79	0·60
Chlorophyll. . . . .	2·22	1·84
Wax. . . . .	0·28	0·00
Resin . . . . .	2·22	3·64
Gum . . . . .	8·56	7·28
Tannin . . . . .	17·8	12·88
Theine. . . . .	0·43	0·46
Extractive matter . . .	22·80	21·36
Colouring do. . . . .	23·6	19·12
Albumen . . . . .	3·0	2·8
Woody fibre . . . . .	17·08	28·32

The difference between green and black tea is due to a difference in the time of gathering the leaves, and their mode of preparation. The green variety is made from younger leaves, and the leaves are roasted in pans soon after gathering. Dr. Hale White has made some important experiments to discover the amount of tannin in different



varieties of tea. A was finest Assam ; B, the finest China ; C, common Congou.

Mark of Sample.	Percentage of Tannin by weight extracted by infusing for three minutes.	Percentage of Tannin extracted by infusion for fifteen minutes.
A.	11'30	17'73
B.	7'77	7'97
C.	9'37	11'15

These results shew that the finest Indian tea infused for fifteen minutes yielded nearly two and a half times as much tannin as the best China tea. Also that in the case of the best China tea, there is practically no difference between an infusion of three minutes, and one of fifteen minutes. These experiments confirm the opinion formed by experienced tea-drinkers, that Indian teas are more liable to produce dyspepsia and nervous trouble, than the best China teas.

Hard water does not make good tea ; such water should be boiled for fifteen to twenty minutes, and a pinch of bi-carbonate of soda added before the tea is introduced. Soft water extracts more of the soluble principles of the leaves. The



infusion should not be more than three or four minutes.

Sir William Roberts made exhaustive experiments on the effect of tea, coffee, and cocoa on salivary and peptic digestion. The salivary digestion is principally concerned in the assimilation of starchy and farinaceous foods, the peptic digestion in that of proteids or meaty substances. He found that tea exhibited an intense inhibitory effect on salivary digestion, much more so than coffee or cocoa.

On peptic digestion he found that, with infusions of tea and coffee of equal strength, the effect was the same, but as coffee is usually made of greater strength than tea, when used as a beverage its effect would be more marked.

The inhibitory effect of cocoa hardly comes into play as it is made so much weaker than tea or coffee. Strong coffee, the *café noir* of France, has a powerful inhibitory effect. Owing to the double action of tea, however, on salivary and peptic digestion, it must rank as a higher retarding agent than coffee or cocoa, since it affects the digestion of bread and farinaceous foods as well as meat. The retarding effect is due to the tannin. To minimise the injurious effect of tea on digestion, it should be made weak, and used sparingly, and



drunk after the meal, instead of with it. Sir William Roberts recommends the introduction of a pinch of bicarbonate of soda into the teapot, to remove the deterrent effect of tea on the digestion of starchy foods. In his opinion the theine or caffeine and the volatile oil, which gives the aroma, have no inhibitory effect on digestion.

China tea may be said to be more wholesome than the Indian variety. It contains less tannin and is therefore less likely to interfere with digestion. Moreover, prolonged infusion does not seem to appreciably increase the amount of tannin.

Good Indian tea, however, if not infused too long, and if made with boiling water to which a pinch of bi-carbonate of soda has been added, is for all practical purposes as wholesome as China tea, and in the opinion of many the aroma and flavour is superior to that of the latter. Just now China tea is being extensively boomed, and for those who like it, and can afford it, there is nothing to be said against its use. For dyspeptics it is undoubtedly the best variety.

Among the Chinese, boiling water is poured on the tea leaves and only allowed to stand for a few seconds before being poured off. In this way the aromatic and stimulant properties are obtained without extracting so much of the tannin. Ex-



perience, no doubt, has taught the Chinese the advantage of this method. Some natives in the Himalayas prepare the tea in the ordinary way, and, after drinking it, eat the tea leaves. This may be a satisfactory form of food for these hardy highlanders, but cannot be recommended for the weaker digestive powers of the inhabitants of more civilised regions.

The effect of tea is well known to all. Its virtues have never been better summarised than by the ancient Chinese writer Lo Yu, who says:—

“It tempers the spirits and harmonizes the mind, dispels lassitude and relieves fatigue, awakens thought and prevents drowsiness, lightens or refreshes the body, and clears the perceptive faculties.”

It stimulates the nervous system, and the effect of taking it hot increases this stimulation. It removes the sensation of hunger and increases the power of fasting. A cup of strong tea will often relieve headache, especially when neuralgic in character, and for this the green variety is the best.

When made in the proper manner, and drunk at the proper time and not to excess, for the great majority of people tea makes a refreshing, agree-



able and wholesome beverage, and when sugar and milk are added as a food, forms a useful addition to their diet. It differs markedly from alcohol and opium inasmuch as the stimulating effect is not followed by depression. This, as Sir Lauder Brunton points out, may be due to the fact that the primary effects are not carried as far as in the case of these drugs.

Tea, if taken in excess, proves injurious, not only on account of the effect of the tannin retarding digestion, but also owing to the fact that it contains the alkaloid theine or caffeine. This alkaloid is a powerful drug. When given to frogs it produces tetanus. Moderate doses increase the strength and rapidity of the heart's action, and increase the blood pressure. It possesses marked diuretic properties, and is therefore of value in dropsy associated with heart-disease.

Chronic catarrh of the stomach often results from tea, due to the tannin, and is only relieved by total abstinence from it for a considerable time.

Troublesome cardiac palpitations may be produced, also muscular tremors and general nervousness. Insomnia, too, often occurs from too free indulgence. All these symptoms more often result from green tea than from black. In some



cases of extreme susceptibility a few cups of green tea will bring on marked muscular tremors, and in some instances one cup taken after 2 P.M. prevents sleep at night.

Occasionally a contrary effect is produced. This is observed when after many hours of hard work a man, wishing to do more work, takes a cup of tea to stimulate him. Instead of feeling refreshed he is overpowered with sleep, probably because the warm fluid draws the blood from the already tired brain to the stomach. After a time the drowsiness passes off and the stimulating effect of the tea asserts itself.

Cases of ill-health from over-indulgence in tea have come under my notice from time to time. Mr —, a farmer, leading a healthy, open air life, at one time drank nothing but tea. His allowance was one cup before breakfast, three at breakfast, two at lunch, three or four in the afternoon, and one or two again in the evening. After three months, he began to feel tremulous and breathless on going upstairs, and suffered from palpitations after taking the tea. He also had symptoms of dyspepsia, and was troubled with insomnia. On reducing the quantity, the symptoms disappeared entirely.

Mrs —, who at one time took large quantities



of tea, suffered in much the same way. She felt giddy and "shaky," and suffered from indigestion. She had no insomnia. She states that she felt perfectly well every morning, but after her first cup the symptoms returned. She recovered entirely on reducing the amount. Tea tasters are said to frequently show poisonous symptoms, such as headache, giddiness, tremors, sleeplessness, and insomnia.

In Wales and Ireland tea drinking is very pronounced. It is consumed at every meal, and the tea-pot is kept on the hob all day long. This concentrated infusion of tannin produces dire results, and chronic catarrh of the stomach and indigestion are very prevalent. Tea is principally drunk in the British Isles, Russia, and Holland. In Russia a little lemon juice is added instead of milk and sugar.

*Coffee.*—Coffee appears to have been consumed as a beverage by the Abyssinians from the most remote period. From Abyssinia it was readily introduced into Arabia. Like all innovations, it met with strenuous opposition, and strangely enough the opposition was mainly of a religious character. The Mahommedans found it most useful in preventing sleep and drowsiness during their prolonged religious services; and this habit



stirred up a fierce opposition on the part of the strictly orthodox priests, who considered it an intoxicating beverage, and therefore prohibited by the Koran. In spite of this ecclesiastical condemnation and threats of Divine retribution, the habit spread rapidly through Arabia, and coffee became the national beverage.

It was not until the middle of the 16th century that coffee-houses were established in Constantinople. Here, too, its introduction excited just as much opposition by the priests, who thought it had a prejudicial effect on attendance at religious services.

In 1652 the first coffee-house was opened in London. The original establishment was in Michael's Alley, Cornhill. Opposition was encountered in this country. Charles II., by a royal proclamation, tried to abolish coffee-houses, stating that they became the favourite resorts of disaffected people "who devised and spread abroad divers false, malicious, and scandalous reports, to the defamation of His Majesty's Government and to the disturbance of the peace and quiet of the nation."

The choicest coffee is *Mocha*, or Arabian coffee. The chief constituents of coffee are a volatile oil, developed by roasting, to which it owes its



aroma; tannin (less than in tea) in a modified form, and caffeine, the same alkaloid as is found in tea.

The effect of coffee on the system depends a great deal on the volatile oil it contains. Sir Lauder Brunton states<sup>1</sup>—"The activity of the volatile oil is shown by the fact that a certain quantity of coffee produces as great an effect upon a man as nearly four times the amount of caffeine which it contains; and coffee injected into the veins of an animal produces general convulsions, and also a tetanic contraction of the intestine; while caffeine produces neither of these effects. The residue of coffee from which the caffeine has been removed also causes convulsions and stoppage of the heart, but no tetanus." This is of interest, and some vendors of coffee advertise an absolutely non-poisonous coffee, and then go on to say it is quite harmless because all the caffeine has been removed. It is the aromatic oil which gives it its flavour and aroma, and it is this oil which, rather than the caffeine, produces the toxic symptoms resulting from excess.

Coffee should be made perfectly fresh from freshly ground and freshly roasted seeds.

"After first preparing an infusion by passing

<sup>1</sup> See L. Brunton "On Disorders of Assimilation."



boiling water over the coffee, the grounds left should be boiled in more water, and the boiling decoction thus obtained should be poured over another portion of freshly ground coffee; this in its turn is also boiled with more water, to be used another time with fresh coffee, and so on.”<sup>1</sup> By this method all the soluble matters are extracted, and none of the aroma dissipated.

Coffee is a valuable stimulant to the nervous system and to the heart. It produces a feeling of well-being, diminishes the sense of fatigue, and seems to have some power of augmenting the muscular power. It has been termed in France *une boisson intellectuelle*, on account of its stimulating action on the brain, and some authorities claim for it that it gives more sharpness to the critical faculties than tea. In small quantities coffee quickens the pulse, but in a large amount it has a depressing effect on the heart, and will often cause palpitation. It increases the action of the kidneys and skin.

In his experiments, as stated above, Sir W. Roberts found that coffee exerted very little retarding effect on salivary digestion, as compared with tea, but exerts a considerable retarding effect on stomach digestion, especially as it is taken

<sup>1</sup> Burney Yeo : “Food in Health and Disease.”



in such strength. Hence coffee should not be taken by dyspeptics after a meal.

Coffee in itself is not a food, but when taken with sugar and milk it contains considerable nutritive properties.

It is a useful antidote in cases of opium poisoning and alcoholic intoxication.

Germani Sée draws an interesting comparison between the action of alcohol and coffee :—

“Alcohol,” he says, “is a real *moyen d'épargne* as it diminishes the organic waste. Coffee does nothing of the kind, it maintains the *statu-quo*. Alcohol excites the peripheral circulation ; coffee imparts new energy to the heart and blood vessels. Coffee increases the temperature, alcohol diminishes it. The muscular system and muscular energy are marvellously roused by coffee.”

He concludes by pointing out that as far as the nervous system is concerned coffee is the antidote of alcohol. This is probably why it has become the custom to take coffee after dinner—to counteract the effect of the wine.<sup>1</sup>

Parkes bears strong testimony to its great value in the diet of the soldier. It is a very valuable beverage in Arctic expeditions.

1 G. Sée “*Du Régime Alimentaire des Boissons.*”



With many people coffee is more apt to upset the digestion than tea, causing biliousness.

When taken in excess coffee not only produces dyspepsia, but nervous symptoms, palpitation, restlessness, insomnia, and general nervous depression.

It is stated that Donizetti used to drink excessive quantities of coffee, taking ten or fifteen pints of strong coffee during the night when he was composing, "Don Pasquale" might be described as a work of genius extracted from coffee. Unhappily, as is the case with all over stimulation, his brain gave way under this poisonous treatment, and he died in a mad-house.

Owing to its exciting effect on the nervous system, it should be avoided by highly-strung individuals who have a tendency to attacks of neuralgia, hysteria, or epilepsy.

Coffee is very much adulterated by chicory, which gives that slight bitterness that is preferred by some palates. Beyond this and lessening the strength of the coffee the chicory does no harm.

*Cocoa*.—A knowledge of this valuable article of diet was brought to Europe by Columbus. It became a favourite drink with the Spaniards, and to this day is more extensively consumed in Spain than in any other country. The first



announcement of its use in England appeared in the *Public Advertiser* of 16th June, 1657:—  
“In Bishopsgate Street, in Queen’s Head Alley, at a Frenchman’s house, is an excellent West Indian drink called chocolate to be sold; where you may have it ready at any time, and also unmade at reasonable rates.”

At the beginning of the eighteenth century it had become very fashionable. Cocoa contains a valuable alkaloid, *i.e.*, theobromine, closely allied to caffeine. It differs from tea and coffee as an article of diet, as the infusion of the latter, leaves a large proportion of their total weight unconsumed; whereas the entire substance of the cocoa seeds is prepared as an emulsion for drinking, and the whole is thus utilised in the system. It thus forms a nourishing food, as in addition to the alkaloid it contains a considerable proportion of valuable nitrogenous and fattening substances. It also contains an aromatic volatile oil similar in its action to that of tea or coffee. Another characteristic is that cocoa contains a large proportion of a peculiar fat, generally known as cocoa butter. The kernels of the roasted seeds, when coarsely crushed, form cocoa nibs. A decoction is made by boiling gently in water for two hours, and then pouring this decoction off the



undissolved residue. The ordinary cocoa consists usually of the kernels ground to a paste, and mixed with other saccharine and starchy substances.

As a beverage cocoa resembles milk somewhat, as it approaches in composition a complete food. Its defect is the large amount of fat it contains, which renders it very rich and prone to disagree with those of weak digestive powers. It is only the decoction of the nibs that can really be likened to tea or coffee as a beverage; its other forms containing a large proportion of nutritious solids.

Cocoa resembles coffee in its effect on starch digestion, having no retarding effect. With regard to its effect on stomach digestion, it was found, with infusions of equal strength, to possess nearly as much retarding effect as tea or coffee; but as it is usually made with a strength of only about 2 per cent, its inhibitory effect scarcely comes into play.



## CHAPTER VI.

### OPIUM.

HITHERTO we have confined our attention to that class of drugs, whose function is essentially of a stimulating character, and the use of which is desired for the feeling of exhilaration produced.

In dealing with the subject of opium and the drugs allied to it, we enter upon the consideration of another class of drugs used principally for their sedative action. Their essential service is in the relief of pain. The effect of opium is one of transient stimulation, followed in most normal instances by a cessation of suffering, accompanied by drowsiness or sleep. From racking pain and torture to a condition of peaceful slumber, is, indeed, a transformation for which we cannot be too thankful, nor value too highly. In this group, opium stands out pre-eminently. No one who has experienced the beneficial properties of this wonderful drug, no one who has witnessed



its soothing action on the sufferer, can fail to endorse the panegyric which De Quincy pronounced upon it, after first taking it for the relief of pain.

“But I took it, and in an hour, oh heavens! what a revulsion! what an up-heaving, from its lowest depths, of the inner spirit! What an apocalypse of the world within me! That my pains had vanished was now a trifle in my eyes. This negative effect was swallowed up in the immensity of those positive effects which had opened before me—in the abyss of Divine enjoyment thus suddenly revealed. Here was a panacea—a *φάρμακον νηπενθες*—for all human woes. Here was the secret of happiness about which philosophers had disputed for so many ages at once discovered. Happiness might now be bought for a penny, and carried in the waistcoat pocket; portable ecstasies might be had corked up in a pint bottle; and peace of mind could be sent down in gallons by the mail coach.”

These views of De Quincy's, expressed after the first dose, became much modified with extended knowledge. Opium may be likened to a lure of the evil one, the temporary feeling of well-being experienced being replaced in the later stages, when the habit is established, by



great mental and physical suffering, and total deprivation of the drug, resulting in absolute torture and even madness.

As in the case of all illicit pleasures, nature exacts full pains and penalties, from those who seek by self-indulgence in this habit, to shirk the inevitable responsibilities, the cares, and worries of mundane existence.

The drug is prepared from the wall of the seed capsules of *papaver somniferum*, immediately after the flowers have fallen. Incisions are made in the capsules, and the white milky juice which exudes, is scraped off and dried in the sun. Whilst still moist, it is collected into fairly large masses, wrapped in poppy leaves, and sold as opium cakes. For medicinal purposes, the plant grown in Asia Minor, alone contains, a sufficiently constant proportion of active properties, to allow of an accurate dosage. The opium used in England is called Smyrna opium, whilst there are two kinds consumed in India, viz., Patna and Malwa—

Patna containing 4 per cent of morphia.

Malwa „ 4½ „ „

Smyrna „ 8 „ „

Knowledge of the drug seems to have been introduced after the Crusades.



Opium is a composite substance containing eighteen alkaloids. The essential active principle is morphia, which should be present in the proportion of 8 per cent. The effect of opium is almost entirely due to this alkaloid, so that in considering the one we include the other. The opium habit amongst oriental races has received considerable attention from those in responsible positions in this country, India, and China.

Various commissions have been appointed from time to time to consider the question, and the general conclusion arrived at, is, that the habit amongst some races, in certain districts, is not utterly to be condemned. Indeed, some level-headed scientific authorities, have, after careful study on the spot, decided, that the mischievous effects of opium-eating are not so grave in many cases, as is commonly believed, and that on the contrary, under some conditions of native life, are probably even beneficial rather than harmful. One reason for this is that the natives of India have a higher tolerance for the drug than Europeans, and can bear larger doses without experiencing ill effects. This difference probably depends on a combination of circumstances, "on race and climate, on hereditary acquisition by centuries of use, on the general



prevalence of the malarial constitution, and the vegetable character of the diet." <sup>1</sup>

At one time the drug was largely used in the fen districts in this country, and was regarded as a prophylactic against ague and its effects. The practice still prevails to some extent. So serious is the evil in China, that in 1908 an Imperial decree was issued, pointing out the dangers of the habit, and stating that the British Government had agreed to decrease its importation for a trial period of three years, in order to ascertain whether the cultivation of the poppy, and the number of opium smokers, would be lessened. Should such be the case, importation would be further decreased gradually. The decree advises the people to abandon the habit—and it has been decided to put an end to the opium trade in Hong-Kong, Ceylon, and the Straits Settlements. These active measures by so conservative a race as the Chinese, afford strong evidence of the evil effects of the opium habit when it becomes a prevailing national vice. The victims of this indulgence are sorry specimens indeed; it is impossible to conceive of greater degradation than that resulting from this habit when carried to great excess.

<sup>1</sup> Sir W. Roberts : Annexure to Report of Commission, 1895.



In the opium dens, in the Chinese quarter in East London, the evil is practised daily, and the London County Council has taken power under the new regulations for lodging houses, to deal with these dens. Opium smoking is amongst the offences for which the Council may suspend or revoke a licence. These houses, situated principally in and around Limehouse Causeway, number about 15 to 20, and are frequented only by Chinese, who live in them as boarders. There are generally three rooms downstairs. One, the living room, round which are placed mattresses for the opium smokers, another the gambling room, and the third the kitchen, where the food and opium are prepared. Each smoker has a small lamp on his mattress. With a needle he places the opium, a black, sticky paste, over the lamp top. The heat causes the opium to bubble and swell, and when in proper condition, it is allowed to dry up into a small pilule.

The bowl of an opium pipe is usually made of terra-cotta, and is entirely unlike a tobacco pipe. The upper surface is flatly convex and at its centre is a minute shallow cup, lined with metal, and perforated at the bottom with a small orifice, which communicates by a very narrow channel, with the pipe stem. The small pilule prepared as



described above, is placed in the shallow cup on the surface of the bowl, and the smoker assuming a reclining position, carefully applies the pilule to the lamp flame; when the opium bubbles and smokes, he fills his lungs with the vapour, and then slowly discharges it. One or two such inspirations exhausts the charge; a fresh pilule is then made and the process repeated.

A practised smoker will absorb 15 or 20 pilules at a sitting. In India the habit of smoking opium is regarded as low and vicious and is indulged in by comparatively few, the great majority taking it by the mouth in the solid form. The consumers carry, concealed about their persons, small pieces of opium or little boxes containing opium pills.

Taking India all through, it is evident that only a minority of the inhabitants are addicted to the habit of opium-eating. Whilst admitting a possible advantage owing to greater tolerance, conditions of climate and diet, to its moderate habitual consumption amongst the natives of India, nothing can be said to justify the habit amongst Europeans under normal civilised conditions.

The third method by which this drug may be taken into the system is by hypodermic injections.



This method is familiar to all and it is its frequent adoption in medical practice of late years which has probably led to considerable increase in the habit. It is stated that in Paris clubs exist for the sole purpose of indulging in this vice, especially among women. A number of ladies meet about four o'clock; tea is served, servants are sent out of the room, the door is locked; the guests bare their arms, and the hostess administers a morphia injection to each one in turn. If one injection is not sufficient to satisfy any particular guest, a second or even a third is given. If this account is true, this custom is indeed deplorable, as there is no ruin so utter as that of a woman in the grip of the drug habit.

That the dangers of contracting this habit by injudicious use of these injections is a serious one, members of the medical profession fully recognise, and scrupulous care and discrimination in this form of medication is one of the canons of orthodox practice. Therapeutically there is probably no drug so satisfactory in its action, as owing to its soothing properties it stands unrivalled in the treatment of all painful conditions.

Opium acts primarily as a stimulant of the nervous system if taken in small doses, and affects



to some extent every organ of the body. For this reason the action of the heart becomes stronger, the feet become warmer, and the resistance to cold increased. It is owing to this action of the drug that: "In moderation opium smoking, like opium eating and alcohol, does not seem to interfere with, but rather to assist labour, mental and bodily. In the evidence given by Mr Cooper before the Committee on Indian Finance in 1871 he states that his chair-coolies carried him twenty miles a day, and were strong and enduring as long as they got their daily supply of opium; but they became wretchedly weak and miserable after a single day's abstinence, when they would lie down with water streaming from their eyes, listless, disinclined to eat, and unable to sleep."<sup>1</sup>

The same applies to the Lascar sailors on the P. & O. steamers, who, if deprived of their opium, become listless, languid, and unable to work. When used in considerable doses by those who are not addicted to the habit, the sedative effect soon follows the primary stimulation, and it is for this action of banishing acute pain that the drug is principally used. As a typical example of its use, an attack of gall stones—the excruciating

<sup>1</sup> Lauder Brunton. "Disorders of Assimilation, etc."



pains of which are perhaps hardly equalled in any other morbid condition—may be instanced. After an injection the following symptoms usually present themselves in the human subject :—

“After a few minutes there is an undefined feeling of general comfort. The mental faculties are agreeably stimulated, the brain seems more active and without any sense of oppression. Fantastic lights and glimmerings appear before the eyes. There is a desire to remain undisturbed, the slightest attempt at movement is a trouble. Questions are only answered indefinitely, glimpses of indistinct, agreeable visions appear. All these pleasant feelings, however, are of short duration. The eyelids begin to droop, the individual who, in the previous enjoyment of comfortable repose, was disinclined to move his limbs is now unable to do so. Every impulse which emanates from the brain for that purpose, passes off without effect. The whole body feels heavy like lead. This is the last thing noticed and soon afterwards the individual sinks into a profound sleep.”<sup>1</sup>

A well-known writer thus describes his sensations after a morphia injection. He had beautiful dreams, visions of a lovely, calm sea, with coral reefs ; the sun was setting and casting a beautiful

<sup>1</sup> Brinz. “Lectures on Pharmacology.”



reflection on the water. He felt very peaceful and very happy.

Another patient of mine, suffering from gall stones, says the effect was delightful. He passed from a state of racking pain to one of painless ease. Although not unconscious, he experienced no pain, he only felt as though he had a lump in his body. He could hear what was said, but could not reason on it. He tells me that the first time he had morphia he was sitting in a chair. The doctor asked him to stand up. He obeyed, but turned his back on him. He knew he was doing this, and yet his volition was so weak he could not help acting in this manner.

It is not within the scope of this book to enumerate all the indications for the use of the drug in medicine, suffice it to say that great care must be exercised in its exhibition, as of all drugs morphia is most prone to induce a habit. It should be a golden rule that a patient should never be allowed to use the hypodermic syringe on himself or herself, and much discrimination and judgment must be exercised, in deciding whether the constitution and moral temperament in each particular case, justifies its use. Dr. Oscar Jennings, one of the most recent writers on the subject of morphinism, hazards the opinion that



one medical man out of four is a drug *habitué*, usually a morphinist. Whatever may be the case in France, a country with which Dr. Jennings is better acquainted, certainly in this country, no such sweeping indictment against the medical or any other profession is justified. The effects of the habit depend very much on the quantity taken and on individual idiosyncrasy. Sir Lauder Brunton states : "So long as opium is taken in moderation, it seems, like alcohol, to be perfectly well borne, and to produce no injurious effects, even when continued for years together ; but when taken in excess it destroys the digestion, greatly impairs the nutrition, and ruins the nervous system. Like alcohol, it lessens or destroys the power of volition, so that the unhappy victim becomes a complete slave to the habit, and he has no power to throw off its yoke." <sup>1</sup>

This statement must not be taken as in any sense justifying the moderate use of opium in this country. To compare the moderate use of the drug with the moderate use of alcohol is, in my opinion, to take an entirely disproportionate view of the dangers attending the moderate use of these two drugs ; the temptations to excess in the case of opium being far greater than in the case of

<sup>1</sup> Brunton. "Disorders of Assimilation."



alcohol, and the opium habit when once established is harder to eradicate. No language used can be too strong in condemning the moderate employment of opium as a form of self-indulgence. The habit when once established produces tolerance in a much more marked degree than in the case of alcohol, and this tolerance necessitates a correspondingly larger dose ; so that the results tend to be progressively manifest and ultimately deplorable.

The health is undermined, the victim is pale, sallow, and thin, untidy in his personal appearance, and has an anxious, shifty expression. He becomes peevish and irritable, and very restless in manner ; power of concentration is enfeebled, memory and general mental power impaired. The appetite is poor and digestion frequently defective. Morally, the subject deteriorates. He exhibits much degradation, deceit, untruthfulness, and general lack of control.

The quantity which opium-eaters will sometimes take is enormous. De Quincy, in the last stage, took nine ounces of laudanum daily, equal to 333 grains of solid opium.

Other opium slaves have been known to take even more. Mr W. E. Image, of Bury St. Edmunds, mentions two cases, in which no less



than sixteen ounces of laudanum per diem were taken.

One case in my own experience is instructive as giving some idea of the disastrous effects sometimes produced by the habit. A medical man of conspicuous ability—the best man of his year at a large University—when in the last year of his studies as a medical student contracted rheumatic fever. To ease the pain, and at the same time to experience in himself the effect of the drug, he injected morphia. That initial dose was the first step towards a terrible downfall. The habit once established grew rapidly, and gradually attained complete mastery. He became in consequence irregular in his habits, and unreliable in his work. He drifted from one post to another, until professional work entirely forsook him. Every remedial measure was tried; confinement in institutions proved unavailing; temporary improvement only being followed by relapse. Sinking lower and lower in the social scale, he drifted into the Salvation Army. Afterwards he became a hawker, tramping the country, spending all his earnings on drink and the fatal drug, until an attack of pneumonia cut short his miserable existence at an early age. In his case, when the craving was at its height, the amount taken was



very great, as much as 80 grains of morphia being consumed in the 24 hours, i.e., 160 times the maximum dose administered medicinally.

I have known other cases where the quantity taken was comparatively small. In these a general instability of character is produced. Business is neglected; there is a want of tone, moral, intellectual, and physical. The victim, without going altogether to the bad, drifts on at a level below the average, and much below that which his natural abilities ought to procure for him, under normal conditions. With the morphia habit excessive indulgence in alcohol frequently goes hand-in-hand. The two habits together are necessarily more serious in their effects than one only. Cocaine is also frequently taken, especially by medical men, to supplement the dose of morphia.

Treatment consists essentially in the re-education of control by gradual reduction of the dose or by immediate total abstinence. From time to time certain drugs have been extolled as marvellous cures, only to be cast aside as worthless after extended trial. Experts often use drugs in the treatment of alcoholism, but no reliance can be placed on them in morphinism.

Dr Hare of the Norwood Sanatorium in his



third annual report says :—"The routine treatment of cases of drug inebriety by strychnine and atropine injections has been abandoned. In morphine cases the treatment consists in the carefully graduated reduction of the daily doses. In some cases the taking of massive doses of bromide of soda towards the end of the reduction period, has been of considerable assistance in shortening and rendering more easy the process of withdrawal."

Dr Hogg, Superintendent, Dalrymple House, Rickmansworth, confirms the above ; he says, "I have as yet discovered no drug which can be substituted suddenly with safety for morphia. In my report last year I referred to the treatment of the morphia habit by combretum, and at one time I thought that at last a morphia succedaneum had been discovered, for in the first four cases in which I tried the remedy the results were all that could be desired. Subsequent experience has, however, proved that it is only in some cases the drug is of service."

In cases where the habit is complicated by the use of cocaine, the latter is withdrawn at once and after a few days the gradual reduction of the morphia is commenced.

Some authorities advocate the sudden complete



withdrawal of the drug. The effect of this drastic mode of treatment is in some instances terrible, and has now generally been abandoned for the place of gradual reduction of the dose. The results of treatment are not so good as in the case of alcoholic excess, and it may be said unreservedly that there is scope for much improvement in the treatment of chronic morphinism. In spite, however, of this somewhat pessimistic view, it must not be forgotten that many cases recover even after years of indulgence in the habit. De Quincy himself is one notable instance, Coleridge is another, and Dr Oscar Jennings vouches for another recovery after addiction to the habit for twenty-five years. So that in the treatment of this failing, we need not utterly despair of ultimate cure.



## CHAPTER VII.

### TOBACCO.

IT may be unhesitatingly affirmed, that of all forms of self-indulgence to which frail humanity is addicted, that of tobacco smoking is most general and least harmful. Often described as a luxury, to the great majority of men and to a considerable and increasing number of women, tobacco assumes the proportions of a necessity, to be deprived of which is a dire misfortune and hardship, not lightly to be endured.

The honour of having discovered the valuable properties of the plant undoubtedly belongs to the Indians of America. No doubt substitutes for tobacco smoke were used by others, wishing to produce intellectual stimulation, or a new sensation. We have it recorded that the ancient Scythians cast various herbs into the fire, and then inhaled the fragrant smoke. The Thracians did the same with the aromatic seeds of certain plants, and



Herodotus states that the Babylonians, employed similar means, to procure and enjoy a transient intoxication, Columbus found the natives of America smoking long tubes of tobacco, the prototype of our modern cigar. They styled the herb "tobacco," the name now universally applied to the world-renowned weed.

The introduction of tobacco into Europe in the middle of the 16th century was brought about by a Frenchman, Jean Nicot, and an Englishman Sir Walter Raleigh. Both these courtiers brought the plant to the notice of their respective Queens, Catherine de Medicis and Queen Elizabeth, and we have it on unimpeachable authority that smoking was frequently indulged in at the court of Elizabeth.

"Some of the great ladies as well as the noblemen therein would not scruple to take a pipe, sometimes very sociably ; however, it was such an abomination to the refined palate of her Scotch successor, James, that he not only refused the use of it himself, but endeavoured to rob his Crown of what has since proved one of its greatest revenues, by restraining his subjects also from it." <sup>1</sup>

So strongly was King James opposed to the habit that he issued his famous counterblast in

<sup>1</sup> Life of Sir W. Raleigh, published 1740.



which he said : " Smoking is a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the black stinking fume thereof, nearest resembling the horrible Stygian smoke of the pit that is bottomless."

In 1624 Pope Urban issued a decree of excommunication against those who used such an unseemly practice, and Innocent XII. in 1690 solemnly excommunicated, all those who should take snuff, or tobacco, in St. Peter's Church, Rome. In spite of regal counterblasts and papal interdicts, however, the habit steadily grew in popular favour, and has continued spreading, until to-day, as we know, it is almost universal.

The finest tobacco is produced at Havanah in Cuba, and in confirmation of this statement it is only necessary to refer to the famous Havanah cigars, which for flavour, aroma, and general excellence, are unrivalled. Manilla tobacco is produced in the island of Luzon, one of the Philippines. Cheroots and cigars made of this tobacco are a very popular and less expensive smokes than cigars from Havanah.

Latakia principally consumed in mixtures is grown in Western Asia. Various other varieties exist. The Virginian brand so popular in pipes



and cigarettes, as its name denotes, is grown in Virginia, North America. Boer tobacco, grown in the Transvaal, is unlike any other. It is very dark in colour and very powdery and dry. This tobacco has, however, an excellent flavour and in South Africa scarcely any other kind is consumed.

The cultivation of the tobacco plant (*Nicotiana Tabacum*) is not successful without great care and skilful supervision from beginning to end. The seed is first sown early in March in a hot-bed. After a week the plant appears, about the size of a pin's head, and continues to grow rapidly. Transplantation takes place in May. An acre of land will receive 1613 plants, if broad and vigorous leaves are required, such as will yield half-a-pound of tobacco from each plant, or 800 lbs. per acre. The leaves are gathered and hung up in covered sheds, admitting light and heat freely on all sides. This drying process lasts six weeks, until the leaves are withered.

After the drying, a damp day is chosen; the leaves are thrown in heaps on the floor, covered with blankets, and left, for the purpose of setting up fermentation, which produces the aroma so desirable in good tobacco.

In the past some doubt has been expressed as to whether the characteristic effects of smoking



resulted from the nicotine of the tobacco ; but it seems now to be well established that the nicotine is by far the most important constituent of the smoke from the medical point of view. It has been stated by various authorities that the nicotine is decomposed at the spot where the tobacco is alight. This may be so, but it must not be forgotten that nicotine is very soluble in water, that water is one of the products of the ignition of the tobacco, and that the warm, moist smoke, drawn through a cigar, or through the tobacco in a pipe or cigarette, must absorb some of the nicotine contained in the tobacco through which it passes, before reaching the mouth.

In this way some of the nicotine is absorbed into the system, although in minute quantities. In confirmation of this, speaking broadly, it will be found that the judgment of a smoker as to whether any form of tobacco is mild or strong, agrees very closely with the percentage of nicotine shown by analysis to be contained in the tobacco. Nicotine is a very deadly poison. One or two drops will cause death to a man in a few minutes ; a single drop will kill a cat or rabbit in two or three minutes. Cases of nicotine poisoning are rare.

Tobacco itself when swallowed will cause death,



as is proved by the following case from "The Naval Medical Reports":—

"A sailor boy had been frequently punished for chewing tobacco, and had often complained of debility, giddiness, and faintness, which were traced to the poisonous effects of this substance. On two occasions he had swallowed a piece to avoid detection. On the night of his death he went to his hammock, telling his messmates that he felt sick. About ten minutes afterwards the occupant of the next hammock heard him breathe stertorously, and immediately tried to awaken him. He could not succeed, and when the surgeon came he was found to be moribund. The pupils were insensible to the influence of light, and the pulse, which was scarcely perceptible, in three minutes ceased to beat. On a postmortem examination two small pieces of tobacco were found in the stomach."

Dr Namias relates an instance of a smuggler being poisoned, by reason of his having covered his skin with tobacco leaves in order to defraud the revenue. The leaves, moistened by perspiration, produced poisonous effects—a small and feeble pulse, faintness, and cold sweats.

In my own practice one case of nicotine poisoning has occurred. I was sent for at 7.30



a.m. to see a young man, a gardener, who was found lying apparently dead by the door of the greenhouse. He had been seen earlier in the morning sweeping leaves, and heard whistling and singing, apparently in good spirits. His health had always been good. When I saw him he was quite dead. There were no signs of violence, and death from poisoning at once occurred to my mind, but there were no external signs to give a clue, nor could any bottle be found near him. I suspected death from prussic acid, and in opening the stomach, smelt the contents for the characteristic odour of that poison. It was absent, but a peculiar pungent smell was present, with which I was unfamiliar. I preserved the stomach and contents for analysis. In the evening the police brought a bottle found on the shelf of the greenhouse, and in smelling it I recognised the odour which had puzzled me on opening the stomach. The bottle was marked *Poison*, and the contents was used for fumigating plants, and contained considerable quantities of nicotine. On analysis a considerable quantity of this poison was found in the stomach.

The deceased suffered greatly from toothache, and it was surmised he might have been in the habit of applying some of the solution to his



tooth, and in this way might, through carelessness, have taken an overdose.

Although such a deadly poison, the amount absorbed in ordinary smoking is so minute, little or no effect is produced. Nearly every smoker at some time or another has experienced the nausea, faintness, cold sweats, and discomfort resulting from tobacco smoking. These symptoms, produced generally when a first essay is made to woo "my lady nicotine," frequently prove a wholesome deterrent to the juvenile offender; and the same symptoms sometimes obtrude themselves even on confirmed habitués if the usual allowance is exceeded either in strength or quantity. The percentage of nicotine varies in different tobaccos. Professor Dixon Mann, after careful analysis of the proportion of nicotine in various tobaccos, arrived at the following figures:—

<i>Pipe Tobaccos.</i>		<i>Nicotine per cent.</i>
A. Very mild honey dew . . . . .	.	1·65
B. Smoking mixture—medium strength . . . . .	.	2·04
C. Perique . . . . .	.	3·29
D. Cavendish . . . . .	.	3·83
<i>Cigars.</i>		
E. Havana mild . . . . .	.	1·09
F. „ (same maker), strongest . . . . .	.	1·58
G. „ (another maker), mild . . . . .	.	1·95
H. Indian strongest . . . . .	.	1·84
I. Patent non-nicotinic (German) . . . . .	.	0·58



<i>Cigarettes</i> (after removing paper)	<i>Nicotine per cent.</i>
K. Egyptian . . . . .	1'13
L. Turkish . . . . .	1'30
M. Virginian . . . . .	2'24
N. Common, five a penny . . . . .	2'02

These results are interesting as indicating which tobaccos are likely to produce ill effects. Whilst the difference in cigars is slight, cigarettes shew considerable variation, Virginian containing double the amount of nicotine shewn to exist in Egyptian. Of the tobaccos, Perique and Cavendish contain most, but as they are used only in small quantities to flavour mixtures, their effects are diluted by the milder tobacco with which they are blended.

Smoking in moderation may be said to be harmless ; and by moderation is meant from two to three ounces a week. As in the case of other drugs, idiosyncrasy comes into play, and some can smoke much more than others without any ill effects. In most instances we know by our sensations when we have overstepped the mark, a feeling of nausea being produced. The following beneficial effects of moderate smoking are mentioned by Binz :—<sup>1</sup>

“Stimulation of the brain and the heart, with increased activity of these organs, increased

<sup>1</sup> Binz : Lectures on Pharmacology.



peristalsis, and consequently more satisfactory evacuation of the bowels in cases where there is a tendency to constipation."

If the quantity of tobacco consumed is at all excessive, the primary stimulation is soon followed by the secondary depressing effect. Personally I have frequently experienced the poisonous symptoms of nicotine, when smoking some tobacco stronger than usual; nausea, faintness, the pulse being small, intermittent and feeble, and the skin covered with a cold, clammy sweat. These symptoms soon pass off if the smoking is discontinued. The excellencies of tobacco have often been sung in prose and verse. Byron, in "The Island," praises it in the following terms:—

"Sublime tobacco!—which from East to West  
Cheers the tar's labours or the Turkman's rest."

Kingsley writes of it in familiar terms:—

"When all things were made, none was made better than Tobacco: to be a lone man's Companion, a bachelor's Friend, a hungry man's Food, a sad man's Cordial, a wakeful man's Sleep, a chilly man's Fire. There's no Herb like it under the canopy of Heaven."—Kingsley's *Westward Ho!*

The effect of smoking on oneself is difficult to



define. If you are worried or bored, a pipe seems to soothe and induce a philosophic frame of mind. Also it undoubtedly appears to increase power the of withstanding fatigue, hunger and cold. After a meal a pipe, cigar, or cigarette seems to supply just the one thing needful to produce complete satisfaction of mind and body. As in the case of alcohol, more tobacco can be consumed without injurious effect by anyone leading an active outdoor existence. The Kaffirs, Dutch Boers, Gipsies, all essentially leading outdoor lives, are great smokers.

The Dutchman carries no pouch; he keeps his tobacco loose in his coat pocket, and smokes continuously all day long. Kaffir women are great smokers and may be seen any day in South Africa sitting outside their huts, smoking long pipes with the utmost contentment. Gipsy women likewise are great smokers, and amongst the Burmese the women smoke cheroots.

Sportsmen as a class are inveterate smokers. In their case the soothing influence of the weed counteracts the somewhat irritating or somewhat disappointing results so often experienced when shooting, fishing, or hunting; and in the evening after an arduous day, the smoke is by no means the least enjoyable part of the programme.

In this country there is a great deal of cigarette



smoking, not only amongst men but also amongst women and boys. The lady cigarette smoker no longer excites ridicule, contempt or even surprise. In so many directions are the fair sex becoming emancipated that to draw the line at cigarette smoking would indeed be superfluous. Moreover, it is difficult to advance any logical reason why a woman should not indulge. She has her cares and worries, her arduous and nerve-racking days, and if to smoke a quiet pipe benefits the male, why should we wish to deprive the opposite sex of their cigarette?

And yet we may in general terms uphold the pipe and condemn the cigarette. The cigarette habit is so insidious; it is so convenient, always ready, always good form, so quickly gone, that one leads on, almost unconsciously, to another, and some confirmed cigarette smokers become almost automatic in the regularity with which one cigarette follows another. In this form of smoking, too, inhalation of the smoke is often practised and this is undoubtedly injurious to the tissues of the bronchial tubes. For the above reasons especially, is cigarette smoking among the young to be condemned. The evil is a growing one, and much harm results from it. In boys and youths who are not physically strong



it interferes with the circulatory system, impairs memory, and diminishes will power. The juvenile offender is none too "flush," and his brand, "five a penny," only adds an additional danger to this objectionable practice.

Professor Dixon Mann in the *British Medical Journal* says :—

"Most men if they choose to smoke can do so within certain limits without injuring their health. The extent of the limitation must be determined by each man for himself, and if he is wise he will keep well within the border line. The habit of excessive smoking is more insidious in its development than that of excessive drinking for the results are much less obvious. An alcoholic may be appealed to by his friends or admonished by those in authority ; this rarely happens to the adult smoker unless he seeks medical advice about 'indigestion and palpitation,' and admits that he smokes to excess, then probably the necessary warning will be given."

Owing to the effect of tobacco on the respiratory system and heart it is customary to refrain from smoking when in training for any severe athletic contest.

Amongst illustrious men who were great smokers may be numbered, Carlyle, Tennyson,



Chas. Kingsley, Flaubert, Chas. Lamb, and Byron.

Mr——, a patient, tells me that when living in Germany he smoked cigarettes only. The habit so grew upon him that he consumed 40 or 50 a day. After about two months he developed serious symptoms, dyspepsia, palpitation, and sleeplessness, his legs became shaky and he had to give up work. On giving up his smoking, the symptoms soon disappeared.

A good cigar is probably the most wholesome form of smoke, but the expense puts this luxury out of court as far as the poor man is concerned. A fairly mild tobacco, smoked in a good pipe, is nearly if not quite as wholesome as the cigar, and is within the means of nearly everyone. A good quality pipe is desirable. It is composed of softer material, absorbs more of the nicotine and in consequence is sweeter. Frequent cleansing of the pipe is to be commended.

The victims of disease resulting from excessive smoking may be divided into two classes. Those in the first class showing no organic changes. In this group the patient usually attributes his symptoms to indigestion which gives rise to flatulence and palpitation of the heart. In the second group more serious symptoms occur.



Vision may be affected, sometimes to the extent of total blindness. Degeneration of the arteries and heart also occur in some cases.

"Prolonged excessive smoking may lead to sudden painless attacks of cardiac failure which in some cases are fatal."<sup>1</sup>

Prof. Dixon Mann mentions the case of a man who for many years made it his habit to smoke daily any number of cigars from ten upwards. His arteries were degenerated, his vision affected and he died suddenly from heart failure at the age of 45.

The general impression among the public seems to be that tobacco smoking, however excessive, is harmless. This is altogether erroneous. In moderation the habit may be said to be harmless and even beneficial, since its effects on the nervous system are soothing and conducive to health rather than disease ; but excess as in every other direction is to be avoided, and may and often does produce serious and even fatal disease.

Fortunately it is easier to reduce the quantity consumed than in the case of alcohol and opium. since the craving produced is not so strong. There are, therefore, no facts which can be cited by reformers to justify a crusade against the moderate use of tobacco amongst adults.

<sup>1</sup> Prof. Dixon Mann, B.M.J.



## CHAPTER VIII.

INDIAN HEMP—MESCAL—COCAINE—HYPNOTICS  
(SLEEP PRODUCERS) — ANALGESICS (PAIN-  
KILLERS.

Although very seldom indulged in in this country, Indian hemp is habitually taken by the people of a great part of Africa and Southern Asia, and especially in India and Persia. The drug is obtained from the flowering tops of the common hemp grown in India. This plant, when grown in hot climates, yields a resinous exudation from its leaves and flowers ; an exudation which is not produced if the plant is cultivated in colder regions. The plant is monœcious, and although both male and female inflorescences yield the active principle in India, it is found necessary to extirpate the males, in order to get a good crop of narcotic material, because the proportion of the active principle contained in the males is very small, and the resinous matter in the female



which yields it, is used up in the formation of seeds.

In India the drug is prepared in three forms.

*Bhang* consists of the dried leaves of either sex.

*Churrus* is a coarse and cheap preparation consumed by the poorer classes.

*Ganga*.—The dried flowering tops coated with resin.

Numerous adulterations of the drug exist, and are known under the generic title of haschisch. *Canabis Indica* is, however, the active principle in these various preparations, and the effects produced are due almost entirely to this drug and not to the additions, such as otto of roses, musk, or cantharides, which are introduced to increase the pleasant effect. The *churrus* is said to be collected in a curious manner. A man entirely clothed in leather walks backwards and forwards through the hemp fields, and the *churrus* or resinous exudation adheres to his clothing, and is afterwards scraped off.

The term haschisch is said to have given rise to the name assassin, "because the chief of the assassins was said to initiate each member into the mysteries of the society by intoxicating him with haschisch, and then conveying him into a garden where he enjoyed all the sensual delights of the Mohammedan paradise. After a while he was



again intoxicated and removed back to his ordinary conditions of life. Confident that his chief possessed the power of conveying him again to paradise at his death, he was willing to run any risk or endure any suffering in the execution of his orders.<sup>1</sup>”

The effects produced on Eastern races appears to be one of dreamy intoxication of an extremely agreeable kind. The impressionable and imaginative oriental enjoys the bliss of paradise. Like other narcotics, the primary effect is one of stimulation followed by secondary depression. A considerable dose produces slowing of the heart and respiration, muscular weakness and inco-ordination and dilated pupils.

According to Dr W. E. Dixon, the effect of inhalation of the fumes from powdered ganga “is an exhilaration and refreshed feeling which is particularly noticeable after fatigue, mental or physical; these effects are more pronounced than those produced by tea or alcohol, and give rise to no noticeable subsequent reaction.”<sup>2</sup>

Dr Dixon also states he is convinced that its results are marvellous in giving staying power, and changing the feelings of muscular fatigue which follow hard physical labour.

<sup>1</sup> Brunton, “Disorders of Assimilation.”

<sup>2</sup> Dr W. E. Dixon: “British Medical Journal.”



Amongst Europeans the effects have not been so uniformly of a pleasurable character, in some cases the results being rather disagreeable than pleasant. Schroff gives the following description of its effects :—

“At 10 p.m. I took 7 c.g. (one grain) of dried haschisch and got into bed. I read some indifferent literature, smoking a cigar according to my usual habit until 11 o'clock. I then composed myself for sleep with the impression that the dose had probably been too small, as it had produced no effect on me, and my pulse was unaltered. Immediately, however, I experienced a loud, rushing sound, not only in my ears, but all over the head. It was extremely like the noise of boiling water; simultaneously, I was surrounded with an agreeable brightness, which seemed to permeate my whole body and to render it transparent. With unusual facility a whole series of ideas, exalted and refined in character, passed through my mind. I regretted having no writing materials at hand, so as to note down these delightful experiences; nor could I bring myself to rise and fetch them, for I was afraid to drive away the very enjoyable sensations I was then experiencing; and, moreover, I was fully convinced that on the following morning I should, as



the ideas had been so clearly impressed upon me and the sensations were so mixed, be able easily to recall them. I recognised my condition to be that which had been described as that brought about by haschisch, but I noticed that there was an entire absence of erotic sensations. In the morning my first thought on waking was to bring back to my memory the visions of the past night, but I could recall nothing beyond what I have above stated.<sup>1</sup>"

Another patient when smoking the hemp experienced peculiar sensations. Orchestral music, which any casual noise developed, filled his ears, and theatrical performances and dancing figures appeared. On gazing into empty space, he beheld beautifully coloured landscapes, associated with the murmur of waterfalls, and trees. The music he heard was soft, every sound agreeable, without discord or harshness; the face of anyone who entered was often distorted, the expression generally comical, never repulsive. His impressions were characterised by freshness and vivacity, endless variety, and extraordinary combinations of various things he had seen and remembered. Long continued indulgence produces as in the case of opium general deterioration of mental and physical powers. The habit,

<sup>1</sup> Bing. "Lectures on Pharmacology."



however, does not grow as rapidly as the opium habit, nor is there the same tendency to increase the dose. Unlike opium haschisch leaves little after effect, the person awakening from a heavy sleep without any nausea or sickness as after opium.

When the French occupied Egypt in 1800, they prohibited the use of hemp on the ground that habitual drinkers and smokers of it lose their senses, become violently delirious, and are led into every kind of excess. On this account the preparation of liquors from haschisch is prohibited throughout Egypt. And yet even in the present day the indulgence of this habit results in many incurable mental disorders in Egypt, Turkey and Asia.<sup>1</sup>

Great difficulty is experienced in obtaining stable and uniformly active preparations of this drug, and this prevents its habitual use in medicine.

*Mescal.*—This plant has been considered as sacred by many tribes of Indians over a large region in Northern, Central, and Eastern Mexico, in New Mexico, in Texas and in Indian territory, and it fills an important part in certain religious ceremonies.

It belongs to the cactus tribe, and the mescal

<sup>1</sup> Under the influence of haschisch Malays become insane and "run amok," killing all whom they meet.



buttons, as they are called, are the dried tops of the plant, and are somewhat brittle discs from half to one inch in diameter, partially covered by a hairy cushion.

Mescal is regarded by the Indians as the food for the soul, the supreme food, and as such is offered to the Gods. For this reason it has come with them to have a religious significance. The visions and dreams resulting from its consumption, are considered supernatural, since they appear to bring man into relations with the Gods. It is said that in moderation it enables men to face the greatest fatigues, and to bear hunger and thirst for five days, that is during the fast prescribed by the laws of Majaknagy. The Indian legend has it that when this prophet was preaching his doctrines, he with his disciples had to flee from persecution, and in the course of his flight, he accidentally broke his food vessels, and the Gods in mercy changed the fragments into mescal. To Dr Havelock Ellis we are indebted for a very interesting account of the various religious customs connected with this mysterious and little known drug ; and also of the effects produced on himself and others on taking it. He tells us : "The Indians only gather it in October just after the dry season ; it is said that it is only at this time that it contains its active



properties. The third maize feast, which takes place at the beginning of October, is regarded as a prelude to the mescal festival and dances. An expedition is organised to the spot near San Luis Potosi, where the prophet's utensils were transformed into mescal, to gather the sacred plant. This expedition takes a month; those who lead it march in front reciting or chanting prayers, the others follow with the pack animals to carry the harvest. A few days before reaching the holy spot the members of the expedition practise a rigorous fast. They also perform a public penance with expiation. As they return there is great rejoicing in all the villages through which they pass, and mescal is offered on the altars and fragments given to every person met. Sufficient is reserved for the great festivals, and the rest is sold to those who took no part in the expedition." <sup>1</sup>

In order to ascertain the effects produced by the drug, Dr Havelock Ellis experimented on himself. He made a double infusion of three mescal buttons and drank this in three doses at intervals of an hour, beginning at 2.30 p.m., two hours after a light lunch. At 3 p.m. he began to feel drowsy and half an hour later he felt a "certain consciousness of energy and intellectual power." At 4.30 he took

<sup>1</sup> Dr H. Ellis. "Mescal, a Study of a Divine Plant."



the remaining portion of the infusion and at 5 felt slightly faint. About this time certain visual symptoms appeared, violet shadows and occasional green shadows were faintly seen. He says : " The chief characteristic of the visions is their indescribability, the main impression being that they are constantly approaching and constantly eluding the semblance of known things."

Later at 8.30 muscular inco-ordination became so marked he was unable to use a pen. Before going to bed at 9.40 there was marked exaggeration of the knee jerk and the pupils were dilated. The visions continued, and on the whole, if described in one word, they resembled living arabesques. He was struck not only by the brilliancy, delicacy and variety of the colours, but by the variety and loveliness of texture which they presented.

At 3.30 a.m. he slept for two hours ; sleep was peaceful and dreamless. On awaking there was a slight headache and the visions were still present with closed eyes. After a few more hours' sleep he awoke feeling by no means tired and with an excellent appetite.

Other experiments produced similar though various results, the visual phenomena remaining a prominent feature.



From the above description it will be seen that the effects of mescal resemble those of haschisch, alike in the variability of their effects on different individuals and in the difficulty of obtaining a reliable preparation. Both depress the heart and respiration, produce muscular weakness and inco-ordination. The knee jerk is exaggerated and the pupils dilated in both instances.

Differences, however, exist. Mescal has a more restricted action than haschisch. In the use of mescal there is usually no mental failure. It leaves the intellect almost unimpaired even in large doses. Attempts have been made to add mescal to the already overcrowded list of medicinal agents ; but no satisfactory results have been obtained and its interest remains essentially one for the psychologist and physiologist. Interesting from the psychological point of view is the apparent detachment of the reason produced in some instances ; for example one of Dr H. Ellis' subjects gives the following interesting account of his condition under the influence of mescal :—" The connection between the normal condition of my body and my intelligence had broken. My body had become in a measure a stranger to my reason, so that on reasserting itself it seemed, with reference to my reason which had remained



perfectly sane and alert, for a moment, sufficiently unfamiliar for me to become conscious of its individual and peculiar character. It was as if I had unexpectedly attained, an objective knowledge of my own personality."

Although no doubt an occasional dose might be taken with impunity by an ordinary, healthy individual, the mescal habit would, as in the case of opium and haschisch, prove most injurious.

*Cocaine*.—This alkaloid is the active principle of the coca plant (*Erythroxylon Coca*), found in Peru. The leaves of the plant are dried, mixed with a little powdered lime, and chewed by the natives. Taken in this way it is stated that the plant has great stimulating, and sustaining power, enabling men to make long-continued exertions without any ill effect. It may be that this local reputation is somewhat overrated, for experiments made with the plant in this country, have not entirely confirmed the very favourable reports given of it in South America, where it is indigenous, its stimulant action being found to be not much more than that of tea or coffee.

The drug cocaine, however, is very widely used in civilised countries as a local anæsthetic; and the effect which it has of benumbing the sensory nerves, when applied locally, renders



it of incalculable benefit in minor surgical operations.

When taken by the mouth in small or moderate doses a sense of exhilaration is produced, fatigue disappears, mental and bodily powers seem to be temporarily increased.

Larger doses produce excitement, and even muscular tremors, and convulsions, whilst the mental equilibrium may be upset, great volubility and incoherence occurring. Unlike opium, large doses of cocaine instead of inducing sleep, seem to have the opposite effect.

The craving for this drug results from the pleasurable effects produced by it in small and medium doses. Pain or some discomfort prompts its trial, and a habit is easily formed. When once formed a rapid tolerance results and the dose is quickly increased. Frequently the habit is combined with that of morphia or alcohol. Dr. Francis Hare, of the Norwood Sanatorium, states that in this country patients who indulge in cocaine only, are rare ; whilst it is very common for morphinists, especially amongst medical men, to supplement the dose of morphia with cocaine. The effects are very prejudicial to health. The digestion, the blood, the heart, the nervous system all suffer. If the habit is persisted in,



memory and volition are weakened and in due course the mind is affected, hallucinations, delusions, and insanity, occurring. With regard to treatment I cannot do better than quote Dr. Hare, who states :—

“In contradistinction to what obtains in the case of morphia, it would seem that cocaine may be withdrawn rapidly with little or no distress, mental or physical. In one case thirty grains daily was reduced to nil in three days. In another thirty grains daily was stopped at once ; and the patient, a medical man, although he admitted the existence of the craving for the drug, maintained that he did not really suffer at all ; certainly there were no objective symptoms.<sup>1</sup>”

*Hypnotics.*—Judging from the number of suicides attributed to want of sleep, and from the number of cases of milder forms of sleeplessness, this would appear to be an age of insomnia. Without question this is a logical result of the strenuous, nerve-racking age in which we live. Long hours, over-work, brain-fag, all tend to induce a hyper-æsthetic condition of the brain, a condition of irritability of the nerve-tissue, which is essentially opposed to normal healthy sleep.

The physiology of sleep is obscure ; there is one

<sup>1</sup> Dr Hare : Annual Report.



factor in its production, however, which all authorities recognise as essential, viz.—an anæmic condition of the brain.

If the brain is active from any cause, the flow of blood to it is increased. This is a physiological law which applies to nerve tissue as well as to muscle. As an example, we may recall the tendency to cold feet resulting from mental effort, as in playing whist or chess, and which is due to the increased flow of blood to the actively working brain.

It therefore stands to reason that an overwrought, excited, irritable condition of this organ, with its attendant vascular engorgement, is opposed to sleep; and this explains why some form of food taken in the middle of the night will often, by increasing the flow of blood to the stomach, reduce the cerebral congestion and induce somnolence.

Fresh air and exercise are undoubtedly the best sleep-producers; but unfortunately to the busy man or woman whose time is too fully occupied in attending to multifarious business calls, this, which may be styled Nature's method of hypnosis, is impossible. Hence recourse is had to one of the too numerous and too familiar drugs comprised in this group. The bromides, chloral, sulphonal, trional, tetronal, chloretone, paraldehyd, veronal,



to mention the most important, are familiar to nearly every one.

There is no class of drugs more used or more abused by the public than this. In insomnia, unorthodox medication reaches its acme. No restriction is placed on the sale of these poisons to the general public. They are with few exceptions made up in the convenient form of tabloids and sold over the counter by chemists' assistants. We have only to read the daily papers to grasp the logical sequence. There we see announced in all its ghastly familiarity—"Death from Sulphonal Poisoning!" "Death from Veronal Poisoning!" or for variety's sake occasionally paraldehyd, chloral, or tetronal, figures as the lethal agent.

Every few months a new hypnotic takes the field and becomes fashionable; the alluring advertisement assures us it is absolutely safe, procuring dreamless sleep, and having no depressing effect on the heart. One after the other the drugs appear, and the same tale is told of each. The latest is always the safest and best. A few months back a literary man assured me he had a perfectly safe new drug for sleeplessness, from which he suffered, viz., veronal. In less than a month afterwards I was able to draw his attention to more than one case of veronal poisoning reported in the news-



papers. He is now awaiting the next really safe, sleep-producing drug.

As a medical man I am often asked which hypnotic I recommend. I have no hesitation in saying I recommend none—unless prescribed by a qualified medical practitioner to meet a particular need in a particular case. If administered in this way hypnotics may be of undoubted value. If used indiscriminately at the discretion of the patient, they are without question an evil and a menace to society. Legal restriction would appear to be simple. No chemist should be allowed to dispense hypnotic drugs in any shape or form, except on receipt of a prescription by a qualified medical man ; and no doctor should omit to state on his prescription the period for which he intends it to hold good, say one, or two weeks, as the needs of the case may indicate. In this way the patient's acquaintance with the drug would be limited to a certain definite period and no longer.

All hypnotics tend to induce a habit, and as in the case of opium, cocaine, and other drugs, tolerance is soon established, the craving becomes exacting ; health, bodily and mental, suffers, and often an overdose results in death. All drugs of this class depress the heart and respiration, and all, if taken continuously for any length of time, have



a very deteriorating effect on the nervous system. None are safe ; all are to be avoided. It is true the problem presents difficulties, but if from overwork and stress, insomnia results—then without question something more than drugging is required. In such a case cessation from work for a time is essential. Rest and change of scene, if only for a week, may work wonders, and by this *régime* we attack the cause of the trouble, whereas by drugging we should only be treating a symptom. The mischief is done, in cases, where, from various reasons, a change and rest are impossible, and the struggle against overwork and sleeplessness, has to be continued at all costs. In these cases the drug is taken and produces some temporary relief, but only to the future detriment of the patient, since the inevitable breakdown, when it comes, is more severe.

In cases of this sort, to avoid drugging, some simple remedies may be suggested. Where possible an evening walk before going to bed should be tried. In other cases a warm bath at bed time, followed by friction of the skin, may greatly facilitate sleep. Sometimes a foot-bath with or without mustard will prove helpful.

A cup of warm beef tea, gruel, and some weak stimulant (such as weak whisky and water) may



be of advantage, and the former or some concentrated meat juice may be taken through the night.

Reading in bed sometimes induces sleep ; the strain on the eyes and also the discomfort of holding the book helping to produce a feeling of weariness.

One remedy which is easily obtainable is motoring. Rushing through the air at high speed for some considerable time has a decidedly soporific effect.

Another group of drugs much in vogue with the public is that known by the name of *Analgesic* (or pain killer). In this group we have the series of coal-tar products, anti-pyrin, exalgin, phenacetin, ammonol, anti-kamnia, daisy powders, etc., all of which are well-known as much advertised remedies for headache and neuralgia. Here again we have the drug, in the convenient tabloid form, sold in large quantities over the counter by the insinuating chemist to the gullible public. These drugs are by no means harmless. They are all depressants, and in cases where any heart weakness exists are highly dangerous. Of value when used with discretion, they are a source of harm when used indiscriminately.

Cases of neuralgia, generally due to decayed



teeth, furnish a wide field for the display of these widely advertised remedies; and this is only another instance of symptomatic treatment, harmful in as much as it postpones the much needed visit to the dentist, and only offers temporary alleviation, whilst the decayed tooth goes from bad to worse. These drugs are also frequently employed in cases of headaches due to anæmia or gastric derangement, and for the reason above stated do more harm than good.



## CHAPTER IX.

### POPULAR SUPERSTITION—PATENT MEDICINES— THE UNQUALIFIED PRACTITIONER — THE DANGERS OF SELF-MEDICATION.

SUPERSTITION, even in the enlightened twentieth century, still plays a far from insignificant part in the treatment of common ailments.

The general public is still very much in the dark with regard to the rudiments of anatomy, physiology, and pathology; and partly in consequence of this, and partly because of that peculiar trait in the character of so many, which prompts them to grasp at anything of a mysterious or secret nature, we still live in an age of quackery and patent medicines, and the unqualified practitioner often derives a lucrative subsistence by trading on the credulity and ignorance of his fellows. Electric belts, which develop no electricity, and copper rings for rheumatism, are common examples of this species of remedy so acceptable to individuals of this class.



Other cures almost incredible in their absurdity have come to my notice during the course of practice. A stone ring tied to the head of the bed as a preventive of disease, is sometimes seen, and the advocates of this harmless practice place considerable faith in its efficacy.

Cures for jaundice are numerous, and one or two examples collected by Dr. Low are quite mediæval in their character :—

1. Three or four pieces of blackberry wood, six to eight inches long and half-an-inch in diameter. Water, one pint. Boil after scraping wood into water. Dose, one wine-glass every morning.

2. Boil an egg in sufficient of patient's urine till hard. Take out and take off the shell. Place the egg in an ant hill, and as the ants eat the egg the patient will recover. The lady who recommended this remedy remarked that it had cured thousands, and that doctors cannot cure jaundice.

When we consider the very long list of secret remedies, and the enormous sale that some of them have, we are at a loss to account for their popularity, except on the ground of some such explanation as given above, viz., the love of mystery and secrecy inherent in the character of so many persons. These factors doubtless play an important part, but probably clever, attractive



advertisement does as much. The British Medical Association has published recently a book entitled "Secret Remedies: What they Cost and What they Contain." The information contained in the book is most instructive and valuable, since it tears down the veil of secrecy from these much belauded quack remedies, and exposes them in all their nakedness, to the view of all and sundry—an achievement which, it need hardly be said, does not meet with the approval of the proprietors of these nostrums. In the preface of this book it is stated :—

"One of the reasons for the popularity of secret remedies is their secrecy. It is a case in which the old saying 'Omne ignotum pro magnifico' applies. To begin with, there is for the average man or woman a certain fascination in secrecy. The quack takes advantage of this common foible of human nature to impress his customers. But secrecy has other uses in his trade; it enables him to make use of cheap new or old fashioned drugs, and to proclaim that his product possesses virtues beyond the ken of the mere doctor; his herbs have been culled in some remote prairie in America or among the mountains of Central Africa; the secret of their virtues having been confided to him by some venerable chief; or again



he would have us believe that his drug has been discovered by chemical research of alchemical profundity, and is produced by processes so costly and elaborate that it can only be sold at a very high price."

As the title expresses, this book contains an analysis of all secret remedies, and also gives an estimate of the actual cost of their preparation. On careful consideration of their composition, in some instances their fraudulent character will be apparent at once; for it will be seen that they contain some substance or mixture possessing no medicinal activity; or, if it has any active principle in its composition, it is one which cannot be considered as having any curative effect on the particular disease for which it is intended, and it is impossible to attribute any merit to it whatever, unless it be on the principle expounded by the great inventor of "Tono-Bungay" to his nephew, who had asked:

"You don't mean to say you think doing this stuff up in bottles and swearing it's the quintessence of strength, and making poor devils buy it at that, is straight?"

"Why not, George? How do you know it mayn't be the quintessence to them so far as they're concerned? There's Faith. You put



Faith in 'em. . . . I grant our labels are a bit emphatic. Christian Science, really. No good setting people against the medicine."

Any man suffering from an incurable disease will catch at a straw. He realises his case is considered hopeless, and his attention is drawn to the preposterous advertisement of some quack nostrum. In this way large sums of money are uselessly squandered, and this especially applies to these remedies which profess to cure irremediable complaints, such as phthisis and cancer.

For instance, one of the preparations sold as a cure for the former complaint consists of little more than coloured, flavoured water, and the price demanded is £2 10s. for a month's supply. Needless to say, every effort is made to induce the patient to continue the treatment for a length of time. This is only one out of many cures for this disease, which is admitted to be incurable by any known drug.

In the case of cancer, one remedy has been shewn by analysis to be composed of nothing but diluted, slightly impure alcohol. Other preparations were shewn to be equally fraudulent in their claims, containing no drug in which the most sanguine could possibly place the smallest confidence. Here again the fatal character of



the disease places the patient's mind in a receptive state for any possible relief. He is easily induced by crafty and specious advertisements to give a trial to one or more of the far-famed cures, and much money which can ill be spared is squandered in this pitiable manner.

In other instances the harm inflicted on the public is not the result of deliberate fraud, but rather a mixture of fraud and ignorance; for many quack nostrums contain some drug which is known to give relief in certain cases of the specific complaint. In these cases the injury to the public arises from the fact that too much is claimed for the particular drug, too much is charged for it, and the danger of its being taken in unsuitable cases.

Under this category may be mentioned certain much-advertised cures for epilepsy. All with one exception contain bromide salts, a drug which is discussed and recommended in every work on medicine in connection with this disease; and yet the proprietors of the patent medicine endeavour by their advertisements to make the unfortunate sufferer believe that their cure contains some drug, the valuable properties of which are unknown to the medical profession; for instance, one advertisement reads as follows:—



"The principal drug is to be found in nearly every surgery, and yet not one doctor in a hundred would think of using it in epilepsy, simply because he has no precedent to act upon. He is not directed by any of the great medical writers to prescribe or administer it in this disease. He knows not of its being so used and he has not tried it himself, and thus he remains unaware of the one grand means of curing epilepsy, even with the very drugs necessary at his elbow."

On analysis this preparation was found to contain bromides in considerable quantity, a trace of tincture of iodine and water. Another, the sole contents of which consist of bromide, sugar and peppermint water, is advertised as follows: "It scarcely ever fails to prevent the fits, loss of consciousness, convulsions, nervous twitchings, etc., of epilepsy, while at the same time it acts as a most valuable tonic; it allays irritation of the nervous system, purifies the blood, strengthens the frame, improves the general health, and helps to check the progress of disease on the intellectual faculties, and may be taken by the most delicate."

It is hardly necessary to point out the absurdity and extravagance of these claims. The prices for these wonderful remedies are very high. In one case four and sixpence is charged for a bottle,



the estimated cost of which is under fourpence and this is a fair sample of the rest.

In diabetes we have a disease which, as a rule, is uninfluenced by anything except diet ; and yet there are numerous quack remedies, all holding out very definite hopes of cure. One states that it "positively cures sugared diabetes, provided it is resorted to at an early stage and used during a sufficient length of time." Another says : "we have satisfied ourselves that the treatment is an absolute and permanent cure." The prices are on the usual high scale, in one instance a charge of eight and threepence being made for a bottle, the estimated cost of which is elevenpence.

Many remedies are advertised to cure a very wide range of diseases. The proprietors of one "cure all" state it is "a real Elixir of Life in solid form. The world's greatest remedy ; cures constipation, indigestion, headache, neuralgia, anæmia, nervous disorders, liver troubles, rheumatism, sciatica, gout, St Vitus' dance, hysteria, rickets, heart disease, kidney complaints. Cures melancholia, loss of appetite, sleeplessness, lassitude, mental depression, brain fag, palpitation, stomach disorders, women's special ailments and irregularity of health, etc., etc." Two and ninepence is charged for a bottle of this marvellous



panacea, the estimated cost of which is three-pence.

In another instance certain pills are advertised for numerous diseases, prominence being usually given to one disease in each advertisement. Two and ninepence is charged for a box of these pills, the estimated cost of which is one-tenth of a penny.

Many more instances might be presented, but enough has been said to show how great is the credulity of the public regarding these remedies. At present no attempt has been made to cope with this traffic. No other Government than ours neglects to intervene. France and Germany tolerate no quack remedies, while in the United States, although there exists a tax on proprietary articles, it is enacted that the composition of all drugs must be set forth on the label. Our Colonies are vigorously attacking the problem. Our Government alone remains apathetic. Deriving a revenue of something like £300,000 a year from this traffic, nothing is done to regulate the trade or to abate its evils. It is constantly found that hospital and dispensary patients have squandered more money on quack remedies than would have paid for medical advice and treatment. Short of prohibiting the sale of these preparations



altogether, it ought to be secured by Act of Parliament that the composition of all patent medicines should be set forth on the label. In this way the public would know what they were buying, and would be able to judge for themselves whether the extraordinary claims made for them had any basis in fact.

Another danger to which the public is exposed is the greatly increasing number of unqualified practitioners. This army of impostors by assuming bogus titles, or under the disguise of sham medical establishments, pose as fully qualified medical men. One frequently sees in the papers instances of suffering, misery and death resulting from the treatment of these charlatans.

It is to be regretted that dispensing chemists are sometimes offenders in this way. Their constant association with drugs, their sale of various proprietary remedies and food preparations give them a spurious reputation as practitioners upon which they trade. The prescriptions of qualified practitioners furnish them with an extensive armamentarium and they are therefore able to vary the medicines and by this means sometimes give relief to a customer. Without question in most instances their practice consists of treating minor ailments only; but in some flagrant cases



a more extensive knowledge is assumed, a mistake in diagnosing a serious ailment occurs and harm is caused. At the same time one cannot help feeling that the unqualified practitioner is not so much to blame as the system which renders such a state of things possible.

The law of the country offers no protection either to the public or to the medical profession. With a view to obtaining some redress, the General Medical Council during its recent session, passed the following resolution :—

“That the General Medical Council being of opinion that the present Medical Acts do not sufficiently enable persons requiring medical aid to distinguish qualified from unqualified practitioners, and that it is contrary to the interests of the public that medical and surgical practice should be carried on with impunity by persons holding no recognised qualifications, requests the Government to take steps for the appointment of a Royal Commission to inquire into the evil effects produced by the unrestricted practice of medicine and surgery by unqualified persons.” Whether action will be taken remains to be seen; but it is inconceivable that such an injustice to the qualified man who has spent large sums



of money and passed through years of study in obtaining his diploma, and such a danger to the public, should be allowed to continue indefinitely.

Thanks to the unqualified practitioner, the innumerable advertisements of patent medicines, the medical advice and prescriptions given in the columns of certain newspapers, and last, but not least, the introduction of the tabloid, many more people dose themselves now than formerly. The inevitable result follows, a smattering of medical knowledge is obtained; in some cases benefit results, confidence is gained, and from restricting themselves to the comparatively harmless field of aperients and tonics, they trespass on the more dangerous ground of sedatives and hypnotics. This is without question a source of much misery. Many lives are ruined, and great unhappiness and suffering result.

There is one drug in particular which gives rise to much danger to health and even life, and the use of which for the illegal purpose of producing abortion is very prevalent in this country. This drug is lead, taken in the form of diachylon pills. Many cases of death from this cause are reported in the medical papers from time to time. No difficulty presents itself



in obtaining this substance, as the purchaser asks for diachylon plaster "ready made," that is, diachylon spread on calico. In this way it is obtained for illegal purposes, and there is no law to prevent its purchase. Even apart from the moral aspect of the question, it is to be regretted that the class of people who resort to this practice are unaware of the poisonous nature of the agent used.

In considering this question of drugs, I have covered a somewhat wide field, and some readers may be inclined to ask the question, Are drugs to be condemned? The answer to this question entirely depends on whether their use is regulated and controlled by knowledge or by ignorance. In the hands of the skilled workman drugs are tools which may be used with the greatest advantage and benefit to mankind. The sedatives may relieve racking pain. Stimulants may revive the exhausted subject, mentally and physically. Hypnotics may give peaceful repose to the weary. If, however, these drugs are tampered with by the unskilled workman, as I have stated, great harm may result, evil habits may be established, and constitutions undermined and shattered.







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