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ACUTE AND CHRONIC ALCOHOLIC POISONING.*

By C. R. Drysdale, M.D., M.R.C.P., F.R.C.S., London; Senior Physician to the Metropolitan Free Hospital.

Alcoholism is a word used by many writers of the present day to designate a whole series of affections caused in the human race by the abuse of alcohol. The symptoms of this condition divide themselves naturally into two groups—Acute and Chronic Alcoholism. In the former group we find simply the effects of an immediate and transitory character—of an excess of intoxicating liquors, in which case we have acute alcoholism. In the latter we note the consequences of a long-continued use of such drinks—chronic alcoholism.

It is true that we are often unable to make any very clear distinction as to where one of these states ends and the other begins; still this division of the subject is denoted by the diversity and also by the chronicity of the diseases produced. Thus, whilst in acute alcoholism we see that the modifications are merely transitory and rapidly disappearing without leaving any trace behind them, in chronic alcoholism the diseases are lasting, and so much engrained into the constitution as occasionally to descend by inheritance to the offspring, thus becoming one of the causes of degeneration of certain races. In this respect, chronic alcoholism has a certain resemblance to such constitutional diseases as scrofula, syphilis, &c.

Thus we may look upon alcoholism, if we regard the ever-increasing habits of drinking of modern times, as one of the

* Read on July 27th, 1880, at the Quarterly Meeting of the British Medical Temperance Association, in the Rooms of the Medical Society of London, Chandos Street, W.
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Gravest of human ills, and worthy of being ranked among the most common diseases of our epoch.

Even as early as 1810, M. Muret, in examining the mortuary registers of a town in Switzerland, found the number of deaths attributable to alcohol so great that he estimated that it killed more people than fever or pleurisy, or any other of the most fatal diseases. Dr. Lancereaux, of Paris, writing in 1865 (Dict. Encyc. de M. et de Chir.), calculates the number of deaths caused by alcohol at one-twentieth of all the deaths occurring in the Parisian hospitals. In England and Wales, with a population of twenty-five millions, the annual number of deaths caused by alcohol has been estimated by Dr. Richardson and other authorities at about 40,000 to 50,000. This would give about 5,000 deaths in London due to alcohol.

Alcoholism is not a new disease. It appears, according to M. Huc, that the Chinese, who practised the art of distillation long before other nations, were well acquainted with the diseases caused by spirit drinking. In ancient Greece even—at Lacedaemon—slaves were made drunk, on certain occasions, in order to instil into the minds of the citizens a contempt for drunkenness. Rome at first was a sober state; but in the times of the emperors drunkenness was frequent enough. Seneca, the teacher of Nero, gives a pretty good account of some of the diseases caused by chronic alcoholism when he says (Epist. 95, § 16):—

"Inde pallor, et nervorum vino madentium tremor, et miserabilior ex cruditatibus quam ex fame macies; inde incerti labentium pedes, et semper qualis in ipsa ebrietate, titubatio; inde in totam cutem humor admissus, distantusque venter, dum male aesuescit plus capere, quam poterat; inde suffusio luridæ bilis, et decolor vultus, nervorumque sine sensu jacentium torpor, aut palpitatio sine intermissione vibrantium. Quid capitis dicam vertigines?"

The eleventh century is the date of the knowledge of distillation among the Arabs and the nations of Europe. Alcohol was at first called a poison, and then a remedy (aqua vitae). In 1678 the sale of alcohol was permitted in France to all, having been previous to that date reserved for druggists.

The north of Europe suffered most at first from the abuse of spirituous liquors; and to such an extent was this the case that, in 1764, it was found that in St. Petersburg 635 persons died annually of drunkenness. Beer seems to have been the habitual drink of the English before the reign of William and Mary; but after that time, up to 1744, all the shops in London gradually seem to have sold alcoholic drinks. The medical faculty of that year seem to have, as now, taken up the subject, and the consequence was that in 1751 certain Government enactments checked the sale of spirits to a great extent.
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Drinking customs do not seem to have made much way in the United States until the epoch of the War of Independence, when the habits of a celibate soldiery, as usual, caused gradually a general recourse to ardent spirits among the colonists.

We may thus observe that the history of the extension of the use of ardent spirits has been progressive ever since the discovery of the art of distillation, and that at this moment it is everywhere, more or less, threatening the physical and moral well-being of the various nations throughout the world.

Acute Alcoholism, when it proves fatal, has a certain number of post-mortem appearances. The stomach is red, injected, and may be covered with ecchymoses, or even exhibit sub-mucous abscesses, and acute hepatitis has been seen in rare cases. Nothing precise is known about what is seen in the spleen or kidneys; but there are some appearances in the brain and thoracic viscera which are found very habitually. These organs exhibit a fulness of the vascular system in the vessels of the membranes of the brain, and in the principal veins which empty themselves into the heart, conjoined with a brick-red coloration of the pulmonary tissue. Pulmonary apoplexy, and meningeal haemorrhage, are often noticed in persons who are poisoned acutely by alcohol; but they are, of course, often wanting. There is usually also a certain effusion of serum into the ventricles of the brain. The lungs are congested, the bronchi red and injected. These lesions may be thus summed up: Congestion, accompanied or not by hemorrhage, as well at the surfaces of the membranes as in the parenchyme of the organs, with occasionally, although more rarely, inflammations of the various organs, rapidly running on to suppuration of the lungs, liver, or even the brain.

The symptoms of acute alcoholic poisoning are too well remembered by all to need any enumeration. Cases have been cited where transient albuminuria has been caused by a fit of drunkenness. The convulsive form of acute alcoholism described by Percy may be produced by any excess of spirituous liquors in an irritable constitution. New wine, or wine to which alcohol has been added, or gin, or absinthe, are the principal causes of this form. The immediate effect of these drinks is not always followed by convulsions; but, gradually, a severe pain is complained of in the epigastrium; the head, already embarrassed, wanders; acute headache ensues; the eyes are brilliant and then haggard, denoting an imminent attack of phrensy. Nausea then ensues, followed by convulsions; and such patients are liable to do themselves great damage by throwing themselves against a wall, or leaping from a window. I have known some difficulty in differentiating such attacks from those of epilepsy.
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We are familiar with the apoplectiform fit, which is so liable to be mistaken for true apoplexy, and for the diagnosis of which Dr. Richardson has suggested the use of the clinical thermometer.

According to Sussmilch the number of persons who died in London in a fit of drunkenness was 27 from 1686 to 1710, 499 from 1711 to 1735, and 631 from 1736 to 1758. The Registrar-General's reports afford very little information on this point of a definite character at this day.

The very much more important disease of Chronic Alcoholism may be defined as a disease of evolution, generally slow, but progressive, which is caused by the prolonged abuse of spirituous liquors, characterised anatomically by inflammations, special but not suppurative, or by fatty degeneration of the organs. Its symptoms are different functional derangements, especially affecting the nervous and digestive systems.

The digestive organs, which receive and absorb the spirituous drinks, are, from this very fact, exposed beyond all the other organs to the action of the alcoholic agents. The effects of the alcohol which penetrates all the tissues by the way of the circulation is here heightened by the topical action of an irritating substance on the digestive mucous membrane, especially of the stomach.

The tongue in many drinkers is abnormally reddened, denuded of its epithelium, and with the papillae hypertrophied. The same redness is noticeable on the mucous membrane of the fauces. The modifications impressed by alcohol on the mucous membrane of the stomach are, as a rule, dependent on the degree of concentration of the alcoholic fluids injected, and cause simple or ulcerative gastritis.

The stomach is occasionally greatly dilated in beer drinkers; but in gin drinkers I have noticed that it is frequently much diminished in capacity. The mucous membrane is changed in colour, and there is seen a reddish injection in the neighbourhood of the cardiac orifice and lesser curvature.

Dr. Leudet, of Rouen, in a work on ulcers of the stomach caused by the abuse of alcohol, written in 1863, describes the ulcerations of the stomach occasionally seen in drunkards. These are far rarer than chronic simple gastritis, but one or two superficial ulcers are described as having been found on the surface of the mucous membrane. These ulcers very rarely produce perforation, but consist in erosions of a few millimeters in diameter. Cicatrices, too, of old ulcers are seen. Not unfrequently there is seen in the centre of such ulcers a clot of blood, reddish or yellowish in colour.

Leudet describes also ulceration in the lower part of the òeso-
phagus, and injection of the duodenal mucous membrane. This I have seen. The small intestines do not appear to be often affected by alcohol; but the cecum occasionally exhibits alterations very analogous to those seen in the stomach—thickness, with induration, slate-like colour of the mucous membrane, and, occasionally, ulcerations.

In consequence of such lesions, dyspepsia is one of the principal symptoms of alcoholism. The appetite is impaired, gases are generated in the stomach, which distend it and produce different sensations, such as dragging pains in the region of the epigastrium. Soon there comes on that phenomena of digestion which is the most characteristic of the dyspepsia of drunkards—namely, gastric catarrh. The morning is the epoch at which this is noticed, and Hufeland has well called it vomitus matutinus.

On awakening, the drunkard experiences on getting up a painful sensation of nausea. This is the precursor of vomiting, which shortly ensues, either without effort, or accompanied by a fatiguing cough. The amount vomited is not great. The matter ejected has been compared to the spawn of frogs. The tongue is flabby, the mouth bitter, and thirst well marked.

Colic, flatulence, eructations, diarrhoea, or constipation, vex the drunkard continually. These various disagreeable symptoms last a long time when simple gastritis occurs. When there are ulcers, the vomiting may occur not only in the morning but at all times of the day, and occasionally the vomited matter may contain a little blood or colouring matter of the blood or bile. Alcohol is one of the causes of hæmatemesis, and death may be caused rapidly by it. According to Leudet, gastrorrhagia is noticed in the greater number of the cases of ulcer of the stomach. Dysenteriform evacuations, or even melena, may occasionally be observed, and such complaints, conjoined with the disease of the stomach, are not long in leading to emaciation and cachexia.

Certain glands connected with digestion are greatly affected by alcohol. The parotid and submaxillary glands, the pancreas, and the liver, have all been described as participating in the influence of chronic alcoholism. The pancreas appears to be subject either to fatty degeneration or cirrhosis, similar to the liver. The liver affections, however, are typical. They are of two kinds, viz., steatosis and cirrhosis. Fatty degeneration of the liver is an almost constant phenomenon in chronic alcoholism. Next to tuberculisation, alcohol is, indeed, the commonest cause of steatosis of the liver. When this lesion is well marked, the liver is augmented in volume, which is principally due to the increase of thickness of its antero-posterior diameter.
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The liver then presents a somewhat cubical form, which is often diagnostic. The accumulation of fat in the liver finally compresses the capillary vessels, and this explains the bloodlessness of the hepatic parenchyma. The bile is apt to be thickened by chronic alcoholism, and it is alleged that biliary calculi are not unfrequently due to this influence.

The symptoms of steatosis of the liver are augmentation of the volume of the organ, felt by palpitation, dyspepsia, with distension of the stomach, exaggerated sensibility in the epigastric region, stools infrequent, pale, and clay-like, with diarrhoea occasionally. Dr. Addison’s description of the satir-like skin—pale, bloodless, and of the appearance of wax—has now become classic.

The hepatitis which is caused by chronic alcoholic poisoning is of the interstitial form. Writers on tropical climates allege, indeed, that alcohol may produce acute diffused hepatitis, and even suppuration of the organ. The first of these maladies is noticed rarely among the inhabitants of temperate zones, and comes on shortly after a fit of drinking. Jaundice is one of the symptoms. In such cases the liver is sometimes enlarged.

The relation of cause and effect between chronic alcoholic poisoning and cirrhosis of the liver has been established in so certain a manner that no doubts are now entertainable, in my opinion, upon the matter. Magnus Huss, in Sweden, Lebert, Budd, Bamberger, and many other well-known authorities, place alcohol among the most frequent causes of this disease of the liver. Alcoholic cirrhosis constitutes one species distinct from all the others. Alcoholic cirrhosis has to be distinguished from syphilitic hepatitis, from hepatitis caused by heart affections, and from one or two other forms.

The principal signs of alcoholic cirrhosis are, first of all, augmentation of the volume of the liver, followed by atrophic induration of the organ, with abundant ascitic effusion. The latter is almost constant, whilst jaundice is exceptional. Emaciation is as great as in phthisis.

Chronic alcoholic poisoning appears occasionally to produce peritonitis of a chronic and insidious kind. In such cases the patient complains of a dull pain disseminated over different parts of the abdomen, which is augmented in volume. A sense of irregularity in the abdomen, with, occasionally, cachexia, have been observed in such cases. No febrile symptoms are seen.

The lungs are the principal organs which have to eliminate alcohol from the body, and they are frequently damaged by chronic alcoholism. Laryngitis and bronchitis, acute congestion, chronic induration and granular tuberculosis, pleurisy,
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and pneumonia, have all been traced to alcohol in many cases by authors of repute.

Dr. Magnus Huss, in his well-known work on chronic alcoholism, speaks of the alteration of the respiratory mucous membranes in drunkards, especially in the larynx. The mucous membranes of the larynx is violet-coloured, injected, or even covered with small points of ecchymosis, sometimes thickened, and with granular epithelium, and covered with thick mucous. If this alteration extend to the bronchi, the mucous membrane becomes greyish or slate-coloured, the small bronchi dilated, and emphysema occasionally ensues. The hoarse voice of drunkards is proverbial.

Whether acute pneumonia is or is not caused by alcoholic poisoning, there can be no doubt that alcohol exercises a considerable influence on the production, on the progress, and the termination of pneumonia. Abundant suppuration may be the consequence of pneumonia occurring in alcoholic poisoning. Ataxic or adynamic symptoms are frequently seen in the pneumonia of drunkards, and delirium may be superadded. The apex of the lungs is not infrequently attacked in the pneumonia of drinkers. This is probably the reason why delirium is frequently said to co-exist with this variety of pneumonia. The pneumonia caused by alcohol has this further peculiarity, that it is apt to come on in the hot season, just when ordinary pneumonia is rare.

Dr. Magnus Huss (Alcoholismus chronicus) speaks of chronic induration of the lungs in drunkards; but this, I think, is problematical. That phthisis pulmonalis is frequently caused by chronic alcoholic poisoning is now well known, especially since the monograph of Dr. Benjamin Richardson appeared. It has been noticed by other observers that granular phthisis is especially likely to be caused by habits of drunkenness.

The phthisical who become so from alcohol are ordinarily robust men, who have inherited excellent constitutions, and who are employed in healthy occupations, but who have become addicted to heavy drinking. In such persons, phthisis sometimes, in my experience, takes on a very rapid course, and may prove fatal in less than six months. In such cases, granular phthisis has been more than once observed by me at the North London Consumption Hospital, to which I was attached for many years. It is probable that the irritation caused by the alcohol circulating in the capillaries of the lungs is the cause of the abundance of the miliary granulations seen in such cases.

My own experience would lead me to say that drunkards are especially liable to contract pleurisy of an insidious form, with slight effusion and slow progress. The circulatory system is
often greatly damaged by chronic alcoholic poisoning. The vena portæ and the pulmonary artery are especially liable to be affected. Budd, in his treatise on diseases of the liver, mentions cases of pylephlebitis of adhesive type due to alcohol. The symptoms were similar to those seen in cirrhosis of the liver. There seems also to be arteritis of the pulmonary artery in some cases, which may cause coagulation of the blood and thus prove fatal. The patients complain first of dyspnœa, and there is sometimes cyanosis, at other times pallor of the face.

The arteries are not so much under the influence of alcoholic poison as the veins; but Huss first pointed out that atheroma was far from rarely found in the arteries of drunkards, in the aorta and cerebral arteries especially. Pericarditis, like peritonitis and pleurisy, is not unfrequently caused by alcohol. The heart also is not unfrequently attacked by chronic alcoholism, in which case the organ becomes larger, its colour is yellowish, and it is softer than in health. The increase in volume generally depends on dilatation of the cavities, and notably of those of the left heart. The muscles are rarely healthy. They appear imperfectly striated: they are granular and clearly degenerated.

The symptoms caused by those alterations of the structure of the heart are palpitations, dyspnœa, slight acceleration and then feebleness and slowness of the pulse, edema of the lower extremities, without any abnormal valvular bruit.

The spleen is often enlarged in cases of chronic alcoholism, accompanied by cirrhosis. The alterations of the blood are, it seems, an increase of fat globules in that fluid, and occasionally an increase in the number of the white corpuscles. Anemia, pallor of the skin, palpitation, and oppression after the least exercise, are signs of the imperfect condition of the blood late on in the disease. Purpura is not infrequent in old drinkers. Certain subjects of Addison’s disease have been known to be great drinkers.

The Nervous System. — False membranes are occasionally found covering the dura mater, especially in the parietal regions of the brain, and these, by pressure on the brain, may produce well-marked symptoms. The alterations of the arachnoid and pia mater are common enough in old drinkers, and are usually seen on the superior aspect of the hemispheres, near the longitudinal sinus. They consist in thickening of the membranes, which are opalescent, and often adhere to each other strongly. Sometimes I have seen the pacchionian glands made yellowish and more voluminous than in health.

The grey matter of the encephalon is most often attacked by chronic alcoholism. The capillaries are rarely quite healthy in old drunkards. They are dilated and sinuous, and greyish
granules are seen in the thickness of their walls. Hence the
want of contractility of the vessels is lessened and stasis of the
blood occurs. Such affections are apt to be accompanied by a
slight degree of agitation, a weakness of the memory, and halluci-
cinations more or less marked, with trembling of the hands and
disturbed sensation.
Later on, atrophy and induration of the mass of the encephalon
occur. The ventricles become dilated and filled with serum.
The capillaries, the neuroglia, the cells, and the nerve tubes
may all be attacked. There is connective hyperplasia of the
tunics of the capillaries. Thus chronic alcoholism produces in
the brain the same disturbances that it does in the tissue of
the liver.
These diseases of the brain produce effects on sensation, in-
telligence, and movement. Formication, hyperæsthesia and
anaesthesia are occasionally seen in drunkards. On the organs
of special sensation alcohol causes certain disturbances. One of
the causes of weak sight is now recognised to be alcoholic
poisoning. It was long ago remarked (Boerhaave) that water
drinkers preserve their sight much longer and have a better
appetite than beer drinkers. Insomnia and dyspnoea are often
bitterly complained of by drinkers. Dr. Marcet speaks of the
dyspnoea of drunkards, and considers that it is caused by laryn-
gismus.

The Intellect.—Insanity is, without doubt, very frequently due
to alcoholic poisoning. Various authors have, naturally enough,
given different reports on this point. Bayle attributes one-third
of the cases of insanity to chronic alcoholism. Of 1,079 insane
admitted into Bicêtre from 1808 to 1813, 126 were put down as
caused by drinking. Of 264 cases of insanity observed in women
in Salpetrière Hospital, 26, according to Esquirol, were entirely
due to the abuse of wine.
The great statistician, Casper, of Berlin, says that, as far as
that city was concerned, nearly one-third of the insane coming
from the poorer classes were made so by spirit drinking. In a
calculation made by Carpenter, of 12,007 cases of insanity, 1,797
were caused by intemperance. Drs. Deboutteville and Par-
chappe, in a statistical notice about the lunatic asylum of Seine
Inferieure, found in twenty-eight years that the lunatics caused
by alcohol were 28 per cent. of all the patients. Another author,
M. Morel, places the figure at 200 in 1,000. In another piece of
statistics, due to Archambault, 115 out of 1,595 cases were said
to be due to alcohol.
In France the progression of cases of insanity due to alcohol
has been an increasing one. Between 1826 to 1835 the propor-
tion of insane persons at Charenton who owed their insanity to
alcohol was put down by Esquirol at 8 per 100. From 1857 to 1864, the proportion was actually three times as high—24 per 100. At Bicêtre M. Contesse found a proportion of 1,000 cases of alcoholism in 5,238 cases of insanity—a proportion of 19.09 per 100. The same author found, from 1855 to 1862, a great increase in the number of cases of alcoholic insanity: it had risen to 25.24 per 100. The forms of insanity observed were under the headings mania, lypemania, imbecility, and dementia.

As to mania, delirium tremens is only seen in individuals who, for a shorter or longer time, have made an excessive use of alcohol, and have thus been attacked with chronic alcoholism. Delirium tremens is quite different from the drunkenness which may attack a person unaccustomed to alcohol. There is, however, some confusion on the point in works on the subject. Delirium tremens is by no means a slight affair: it causes many deaths, partly from the accidents which may ensue.

The mania of persecution is a common form of chronic alcoholic nerve-poisoning. This form of insanity very frequently prompts to suicide. Casper mentions that one-fourth of the persons in Berlin who attempted to destroy themselves were drunkards. The brutishness of drunkards has been often well described; their stupidity and confusion of thought and imbecility are often notable.

Alcoholic epilepsy is almost always preceded or accompanied by some of the above-mentioned affections of the brain, and comes on especially after delirium tremens. Paralysis, too, is often clearly due to chronic alcoholic poisoning. First of all, we notice tremulousness of the fingers, which extends to the hands; the contraction of the muscles of the forearms is feeble, and the same phenomena are then observed in the lower limbs. The tendency of such paralysis is to become general.

The spinal cord is not so frequently attacked by chronic alcoholism as the brain; but there are doubtless numerous cases in which alcohol affects it. With regard to alcoholic affections of the eye, in one set of statistics, due to M. Galizousky, of Paris, 29 out of 704 patients with amblyopia owed their disease to alcohol or tobacco (Ann. Oculist, 1863, Brux.). Among the diseases ascribed to alcohol is glaucoma.

With regard to the genito-urinary system Dr. Bright used to say that no disease produced more deaths among drunkards than albuminuria. Drs. Gregory and Christison noticed that in Scotland whisky produced the great majority of cases of Bright's disease. Rayer, in Paris, did not find this to be so common; and Dr. Dickinson, in London, has recently made the same observation for the metropolis of England. Sir Henry Thompson
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has recently advanced the opinion that diseases of the bladder are often due to chronic alcoholism. It is certainly true that catarrh of the bladder is frequent among drunkards. Roesch, one of the writers on alcohol (Ann. d'hygiène et de Med. legale, t. xx. p. 84) speaks of atrophy of the testis as being not infrequently caused by chronic alcoholism. These organs and penis are also very frequently atonic in drunkards, and not only is there impotence, but also absence of desires. In Egypt, Larrey remarked many cases of this kind. Hence it seems proved that chronic alcoholism is apt to cause premature senility of the genital organs. Probably the ovaries are affected also by chronic alcoholism, since women who are addicted to spirits are apt to have disordered menstruation, abortion, &c.

Darwin (zoolomia) considers that all the diseases produced by the abuse of spirits are hereditary. Many other writers argue that drunkenness in parents has a terrible influence on the health of the children, who are, it is said, liable to hydrocephalus, idiocy, and even to dementia. In 1860, M. Demeaux, in a letter to the Academy of Sciences, maintained that epilepsy in children was caused often by the parent being drunk at the time of conception. This, of course, is an observation difficult to prove, and which I attach but little credence to.

Individuals who inherit the effects of chronic alcoholism are described as being often marked with the seal of degeneration, especially of the nervous system. When infants they are frequently liable to convulsions, or remain idiotic or imbecile. When grown up they are frequently remarkable for the smallness of their head, and the stupidity of their expression. They are supposed also to have a tendency to drunkenness, immorality, and cynicism. Whether this be true or not, it is not the less certain that a father or mother who drinks is almost certain to deprave and ruin the morals of some of their offspring.

The dilatation of the vessels of the face, caused so frequently by chronic alcoholism, gradually gives place to the satin-like yellowish coloration of the integument, and the unwieldy fat of beer drinkers is well known in London charities. It may be said, in a general way, that spirit drinking is apt to produce adhesive inflammations; beer drinking, fatty degeneration. Since alcohol circulates unchanged through the tissues, we can readily understand its irritative action, causing proliferation of the cellular tissue, just as alcohol injected into the t. vaginalis testis does. It is not so clear to me why alcohol causes fatty degeneration.

The Prognosis of chronic alcoholism is often very grave. The insanity caused by it is usually of a severe type, and liable to relapses. Cirrhosis is almost always fatal, and so is Bright's disease. Then, alcoholism, as is so well known to surgeons,
causes many deaths from injuries which would otherwise prove innocent enough. In Sweden it has been found that in one province, Södermanland, where much spirits are consumed, there is an annual death-rate of 1 in 49, whilst in a very sober province, Yamland, the mortality is but 1 in 80.

**Etiology.**—Spirits are far more injurious than wines and beers; and, generally speaking, the noxious influence of alcoholic liquors depends on their intensity. French wines seem rarely to cause gout. I found that gout is almost unknown in the hospitals of Paris. Diabetes mellitus has been said to be caused by cyder, and, according to Bouchardat, by beer. Whisky made from potatoes is said to be more apt to cause bruitishness than ethyllic alcohol. With regard to absinthe and other liqueurs, we are inclined to believe that the action of all alcoholic liquors is rather in proportion to the quantity of alcohol they contain than to the peculiar essences used to flavour them.

It is calculated that, in Sweden, each male consumes on an average 80 to 100 litres of spirits yearly. Fifty thousand persons are said annually to perish of alcoholic diseases in England and Wales. In 1822 Berlin had alcoholic establishments in one-fourth of the houses of the city. France, in many of its provinces, is decimated by the curse of drunkenness. Especially is this true in Brittany, Vosges, and Normandy. In Paris the amount of alcohol per person has gone on increasing during the whole of this century. Italy, Greece, and Spain are less inclined to drunkenness than the Northern countries of Europe. Drunkenness, according to Huc, is greatly prevalent in China.

Poverty, says Ræsch, is one of the commonest causes of drunkenness. "A position which compels the workman not only to do without all the amenities of life, but even, whilst working with all his strength, to forego the most necessary things, is not the least of the causes of drunkenness. To still hunger, and make himself fitter for work, to warm his meagre frame covered with rags, to place himself in a position where he can forget his misery for an hour, the poor man has recourse to alcohol. The poison is not slow to become habitual in such a person; he soon forgets his family, and sinks into the profoundest physical and moral degradation." We must not suppose that alcoholic excesses are uncommon among the rich; but in that class alcoholism assumes a slightly different appearance, the cerebral phenomena are predominant, and the patient grows stout from the combination of good living with alcohol, as happens in New Zealand, where butchers' meat is 2d. a pound, wages high, and the death-rate low.

**Age and Sex.**—Chronic alcoholism is almost unknown before 20, and is very rare after 65. Very few women perish of alco-
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holic poisoning as compared with men (13 in 200, Morel). In 170 cases of delirium tremens observed by Rayer, 7 alone were in women. Women, I am glad to say, scarcely ever smoke. During lactation the use of spirituous liquors is dangerous, if not for the mother, at least for the child, producing in it derangement in the digestive organs and convulsions.

The first temperance society seems to have been founded in Boston in 1813. The first European society was founded in New Ross, Ireland, in 1829.

It has been reserved for our days to witness the formation of a society of medical men so devoted to the cause of temperance as to band themselves together to oppose the drinking customs of society. The task is a difficult one. At this moment Great Britain and Ireland are supposed to expend some 140 millions sterling, out of their annual income of 1,000 millions, on drink. France has 2,000,000 of its inhabitants occupied in the culture of the vine. Germany is poor, and terribly afflicted with drunkenness.

But let us have courage and faith! There is a constant tendency in the human race to struggle upwards towards happiness and health. War becomes rarer, pestilence is better understood, superstition is waning, the epoch of science and humanity is coming nigh. A time will come—we cannot doubt—when civilisation will shake itself free from poverty, alcohol, and tobacco, and when a death-rate of 12½ per 1,000 will be the ordinary mortality of civilised states, as it is among the inhabitants of New Zealand at present.

THE HEREDITY OF ALCOHOL; OR, THE INFLUENCE OF THE ALCOHOLISM OF PARENTS ON THE CONSTITUTION AND HEALTH OF THEIR CHILDREN.*


The most saddening, and, perhaps, the most serious, of the numerous evils inflicted by alcohol on human kind is the hereditary transmission, both of the drink-crave itself and of the pathological changes caused by indulgence in alcohol.

Physical disease, induced by habitual intemperance, is often transmitted. Alcoholic phthisis, for example, is a disease frequently

* Read at the International Temperance Congress, held at Brussels, August, 1880.
imprinted on the constitution of the unborn babe (\textit{fæetus in utero}). Some very painful cases of this hereditary infliction have recently come before me. Hereditary alcoholic rheumatism and hereditary alcoholic gout are constantly to be met with. I have had under my care a life-teetotaler who has been repeatedly tormented by acute attacks of gout, though by his careful diet and mode of life he has disarmed the disease of half its terrors. He owes his besetting ailment to the alcoholic indulgence of his ancestors, and has inherited this legacy with the rest of the family property. In no other disease is the heredity of alcohol more marked. In England the proofs are everywhere around us.

Many other diseases produced by alcohol are the subject of transmission. Among the most characteristic are alcoholic cirrhosis and alcoholic contracted kidney. In one painful case of the latter, under my own care, the patient had been a total abstainer for nearly forty years, but he inherited the contracted kidney from an intemperate father.

The blood of the inebriate parent is so vitiated and his energies are so wasted, that even when there is a sober mother the innocent progeny are often brought into existence puny, stunted, and debilitated. Body and brain having been insufficiently nourished, the vital powers of such infants are so defective that, in their earliest years, they are literally mowed down. In the causation of the terrible infantile mortality which is such a disgrace to English civilisation, the drinking habits of the parent or parents have the largest share. Even when grown up to manhood the constitutions of the offspring of intemperate parentage are frequently so enfeebled and impaired that they succumb to a premature death from their lack of recuperative power after the exhaustion, following some acute illness, which a tolerably vigorous system would have perfectly recovered from.

Alcoholic nervous and mental diseases are also handed down. Hereditary alcoholic epilepsy, for example, is by no means uncommon. Defective nerve power, enfeebled will, and a debilitated \textit{morale}, form a favourite legacy from thoughtless inebriates to their helpless issue. The nerves of the dipsomaniac are shattered while the bodily strength is undermined, and thus the family are liable to be mentally afflicted. Some of the circle, generally the daughters, may be nervous and hysterical; others, generally the sons, are apt to be feeble and eccentric, and to fall into insanity when any emergency calls for the display of unusual brain power. In one household, with a drunken father, two girls were hysterical, and a third was an imbecile; of the sons, the eldest was an epileptic, the second died suddenly of alcoholic apoplexy, and the third was an idiot. In another family, bur-
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dened with the hereditary drink curse, the eldest daughter com-
mitted suicide, the second lost her reason and became quite
demented, and the youngest was the incarnation of hysteria.
The elder son killed himself by poison through drink, and the
younger is an apparently confirmed set.

Absence of intellect from infancy, or idiocy, not unseldom fol-
lows of necessity from parental excess in alcohol. Dr. Howe, in
his well-known Report on the State of Idiocy in Massachusetts,
states, that the habits of one or both parents of 300 idiots having
been learned, 145 of these children, or nearly one half were found
to be the progeny of habitual drunkards. Dr. Down, no mean
authority on mental disease, did not think this an exaggerated
statement. Many attempts have been made to discredit Dr.
Howe's statistics, but none of these attempts have been success-
ful, and I fear we must confess the figures are only too true. Dr.
Howe gives the case of one drunkard who was the parent of
seven idiots. Dr. A. Mitchell, in his evidence before the Com-
mittee of the British House of Commons, said he was quite
certain that the children of habitual drunkards were in larger
proportion idiotic than other children; a belief shared in by M.
Rousel, M. Taquet, Dr. Richardson, and a host of competent
observers. In private practice the proofs of the influence of
parental alcoholic excess in the generation of amentia are con-
tinually confronting me; and among my professional confrères
there is no difference of opinion on the subject.

That the impairment of the bodily or mental faculties arises
from the intemperance of one or both heads of the family, is
demonstrated by the healthfulness and intellectual vigour of
children born while the parents were temperate, contrasted with
the sickliness and mental feebleness of their brothers and sisters
born after the same parent or parents became intemperate. In
one case, there were first a son and daughter, both excellent
specimens, mentally and physically, of vigorous humanity. After
the birth of the daughter the father fell into habits of dissipation,
and rapidly became an habitual drunkard. He had four children
after his declension to insobriety. Of these, one was defective
in mind, and the remainder were complete idiots.

There can be no reasonable doubt, in fine, that not the least
painful and unavoidable effects of intemperance in alcohol are the
physical and mental debility and disease it entails on posterity. Dar-
win, in “the Botanic Garden,” in 1794, pointed out this fixed
and immutable law. Nearly all the diseases springing from
indulgence in distilled and fermented liquors are liable to become
hereditary, and to descend to at least three or four generations,
unless the hereditary tendency be starved out by uncompromising
and persistent abstention from all intoxicating drinks. This is
no speculative theory, no visionary hypothesis. It is a well-grounded belief founded on accurate observation—a legitimate conclusion deduced from extended experience, and based on incontrovertible facts.

But the most distressing aspect of the heredity of alcohol is that the transmitted narcotic and insatiable craving for drink—the dipsomania of the physician—is every day becoming more and more prevalent. Probably this alarming increase in the alcoholic heredity in England is owing, in great part, to the unmistakable increase of female intemperance amongst us.

Not long since, I was called to a lady, sixty-three years of age, evidently dying. All that I was happily able to accomplish was, by the aid of powerful medicinal stimuli, to restore her failing consciousness for a few brief moments while her spiritual adviser addressed to her a solemn exhortation. She was an habitual drunkard, getting drunk regularly every night, and when drunk she lost all sense of shame and decorum. She was a victim to the hereditary drink crave. The only other members of her family, two sisters, were also hereditary dipsomaniacs. The one died in an asylum from insanity caused by drinking, and the other is so confirmed a drunkard that she has to be constantly watched.

The hereditary transmission of an innate proneness to excess in alcohol, of a special susceptibility to habitual and abandoned intemperance, has been recognised from the earliest times. Pla referred to the injurious effects of intemperance both on the parent and on the child. Plutarch wrote—“Ebrii gignunt ebrios;“ and Aristotle taught that “drunken women bring forth children like unto themselves.” The Parliamentary Committee of the British House of Commons, in 1834, in their Report on Intemperance, state that the evils of alcoholism “are cumulative in the amount of injury they inflict, as intemperate parents, according to high medical testimony, give a taint to their offspring before its birth, and the poisonous stream of ardent spirits is conveyed through the milk of the mother to the infant at the breast; so that the fountain of life through which nature supplies that pure and healthy nutriment of infancy, is poisoned at its very source, and a diseased and vitiated appetite is thus created, which grows with its growth, and strengthens with its increasing weakness and decay.”

One more example, which has come under my own professional observation, may be useful. A gentleman of position, sixty-four years of age, is an hereditary drunkard. So violent is he that his wife and family have had to leave him. One of his sisters (unmarried) is an imbecile through drinking. She has frequently tried to commit suicide, when drunk, by hanging, by poison, by
jumping from a window, and by drowning. Her insanity has so suicidal a tendency that she cannot be left for a moment alone—all the repeated efforts at self-destruction which I have just enumerated having been attempted while the attention of the attendant was withdrawn from her for a few seconds. She will do anything for drink—will beg, borrow, or steal, pawn everything she can lay her hands on, and even essay robbery with violence in the hope of obtaining money to gratify her morbid craving for alcohol. Another sister (married) is also an habitual drunkard, who gets into fits of ungovernable fury when in drink, and being dangerous both to herself and others, is under restraint. Thus all the family are dipsomaniacs. The fatal legacy in this case was from both parents. The father shot himself when labouring under alcoholic mania, and the mother was an inveterate drunkard. The grandfather was also a confirmed inebriate.

Some are of opinion that when the father is addicted to drunkenness the girls are the most liable to be the subjects of hereditary alcoholism, and when the mother is the culprit the sons are specially endowed with the family failing; but upon this point I can at present form no reliable opinion. That the female parent is the more general transmitter of the hereditary alcoholic taint I have little doubt. In a London prison, recently, female representatives of four different generations of one family were incarcerated, at the same time, for drunkenness or offences connected therewith. In my own observation, the female members of several families, which suffered under the infliction of drunken mothers, have all, except those individuals who have become rigid teetotalers, lapsed into being hardened drunkards. In one case, the females of two successive generations, and in another case of three successive generations, have all formed an unbroken chain of reckless inebriates; and then all at once their successors in life have exhibited an utter loathing for alcohol in every shape and form. Apart from any outside temperance influences, an instinctive and irrepressible abhorrence is sometimes seen, simultaneously and of its own accord, in the children of the third fourth generation of families formerly, apparently, helplessly and firmly bound by the iron fetters of the heredity of alcohol. The very extent of the evil seems to have worked out its own cure. The depths of misery and despair into which the relentless tyranny of alcohol has, by inheritance, plunged its victims seems to have permeated their whole being with hatred of their enslaver, and to have inspired them with the determination to strike a blow for freedom, and, casting off for ever the yoke of the oppressor,

To burst the chains which drink for ever flings
On the entangled soul’s aspiring wings.
The inherited drink-crave, where it exists, even when from the absence of temptation or from the strength of resolve will it has never been made manifest, is always latent, and ever ready to be lit up at the faintest alcoholic provocation. The smallest sip of the weakest form of fermented or distilled liquor has power to set in a blaze the hidden unhallowed fire. Persons ignorant of the inexorable law of heredity in alcohol, indiscriminately rebuke and denounce the vicious drunkard and the diseased dipsomaniac. But to medical experts it is as clear as is their own existence that there are multitudes of persons, of both sexes and in all positions in life, who, though they may never have yielded to the enticements around them, are yet branded with the red-hot iron of alcoholic heredity. There is no nobler sight on earth than the triumph of such weighted ones over their lurking and implacable foe—a foe the more terrible that it lies concealed within their own bosom. The only safety for all such lies in entire and unconditional abstinence from all alcoholic drinks. Such must shun all the alcohols. Every fermented and distilled liquor is their enemy. Though added horrors, such as delirium tremens, may be heaped up by a resort to impure spirits and the heavier alcohols, the purest ethyl alcohol, or the weakest and most delicate fermented wine, is strong enough to awake the dormant appetite, and provoke a thirst too often, alas! quenched only in death. Whatever their station or their accomplishments, the subjects of the inherited drink-crave can abstain or can drink to excess, but drink moderately they cannot. If, in a state of consciousness, they taste an alcoholic beverage at all, whether on the plea of sickness at the prescription of a physician or on the plea of religion at the exhortation of a priest, they are in imminent danger. Their whole system is, as it were, set on fire. Unless happily enabled to master the giant appetite in the very first moments of its reawakened life, they are truly taken possession of by a physical demon, a demon easily raised, but, once raised, almost beyond the power of even a Hercules to slay.

To prevent misapprehension, it is well here to state that all the evil resulting from hereditary alcoholism may be transmitted by parents who have never been noted for their drunkenness. Long continued habitual excessive indulgence in intoxicating drinks to an extent far short of pronounced intoxication, is not only sufficient to originate and hand down the morbid tendency, but is much more likely to do so than even oft-repeated drunken outbreaks with intervals of perfect sobriety between.

In what consists these influences of the alcoholism of parents upon the constitutions of their children? The mother probably is the more potent factor in the transmission. She exerts an influence, not only equally with the father in the conception, but,
in addition, during the whole period of utero-gestation, yields a special influence on the unborn child. Exact records are wanting, but I have remarked a preponderance of the maternal influence in the causation of alcoholic heredity in many cases in family practice.

Alcoholism seems to impair the vital properties of the fecundating material, and thus from the very beginning the child of one or two intemperate parents is burdened with an inherited constitutional idiosyncrasy. Then the depraved moral sense is transmitted, just as are other heritable mental and moral defects. When the heredity is from the mother, it seems to me that it arises mainly from the defective nutrition of the nervous centres, of the cerebral and spinal substance, during the entire uterine career. The continued action of nervous stimulants modifies the nutrition of the nervous system, and it is this acquired perversion of the normal nutrition of the nervous system which is conveyed from parent to child and constitutes heredity in alcohol.

The nerve cells are built up and kept in adequate repair by the nutritive plasma from the blood. This process is essentially a healthy function, the health of the mind as well as of the body depending on the proper nutrition, growth, and repair of the cells. By taking alcohol (whether the least poisonous, as the ethylic, or the more poisonous, as the butylic or amylic), we cause the blood plasma to convey to the cells an irritant narcotic poison instead of a bland nutritious substance, we stimulate the cells to a rate of waste too rapid for efficient renewal, and thus set up a depraved diseased condition.

Alcohol disturbs the balance of the mental powers. Its action is to destroy the equilibrium of the organic functions of the mind, and by this interference it brings about undue depression of some of the functions, and undue exaltation of others. This abnormal mental unsteadiness produces in the children of such parents a badly-balanced and weakly condition of the brain and whole nervous system, as well as the moral faculties, and thus both the mind and body of the offspring of parents whose mental and physical being is steeped in alcohol, are disposed to take a diseased action. A crowd of nervous disorders is the inevitable outcome. The mortality among children so afflicted is enormous, and when they survive the period of childhood, epilepsy, apoplexy, cerebral and meningeal disease and insanity work sad havoc with the survivors.

The heredity of alcohol is now beyond dispute. It is no mere dream of an abstemious enthusiast, but the operation of a natural law; no fanciful creation of a nephalian brain, but an acknowledged fact. Men and women on whom this dread inheritance has been forced without their consent are everywhere around us,
bravely struggling to lead a pure and sober life; and would it not be but an act of justice to make every land, every church, and every home safe for all such afflicted ones by the expulsion of all intoxicating beverages from our sacred services, from our social gatherings, and from within our borders? Equity and fairness demand this at our hands in the interest and the rights of each hereditary legatee of alcohol; for of all such it may with truth be said in the language of Shakespeare:

"So, oft it chances in particular man,
That, for some vicious mole of nature in them,—
As in their birth (wherein they are not guilty,
Since Nature cannot choose its origin)
By the o'ergrowth of some complexion,
Oft breaking down the pales and forts of reason;
. . . . that these men
Carrying, I say, the stamp of one defect,
Being Nature's livery or Fortune's star,
(Their virtues else be they as pure as grace,
As infinite as man may undergo)
Shall, in the general censure, take corruption
From that particular fault."

ON THE PHYSIOLOGICAL AND PATHOGENIC ACTION OF ETHYLIC ALCOHOL, VIEWED IN RELATION TO ITS PHYSICAL AND CHEMICAL PROPERTIES.*

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The object of this inquiry is to indicate the physico-chemical properties of ethylic alcohol, and to trace their influence on the special physiological and pathogenic results of its introduction into the living system.

The practical issues to be determined are—

(1) Whether ethylic alcohol undergoes any change in the animal organism; and

(2) What is the character of its operation in modifying the functions, and the nutrition of the tissues, of the body?

The prolonged discussions and laborious experimental inquiries, which have assumed an alarming magnitude, as to the rôle which alcohol sustains, have been conducted with a very defective appreciation of two most significant factors in the

* Read at the International Temperance Congress held at Brussels, August, 1880.
inquiry; which have been, in fact, either absolutely ignored, or utterly misinterpreted. These are,—the diminished elimination of carbonic acid by the pulmonary surfaces; and the lowering of the animal temperature; under the influence of alcohol.

A just appreciation of these facts is essential to the formation of any trustworthy conclusions on the subject; and those plau-
sible pretences plentifully presented in favour of the usefulness of alcohol which have been developed while they have been left out of consideration have no claim to scientific regard.

The most concise _resume_ of the physical properties of ethyl-
lic alcohol must suffice. We must consider (a) its volatility (pass-
ing into vapour at 56° F.), (b) its perfect and singular diffu-
sibility in aqueous fluids, (c) its low boiling point (173° F.), (d) the great density (1·61) and (e) high elastic force (4·50 at 98°4° F.) of its vapour, (f) its great solvent powers over fats and fixed oils. Chemically it is a result of the decomposition of organised materials, its twin product being carbonic acid; as a product of retrograde metamorphosis it possesses great molecular stability, in contrast with the known supporters of animal life; at moderate temperatures it undergoes no change, and it prevents and arrests change in other bodies.

Certain definite effects, it may be predicated, must attend the introduction of a substance with such characteristic properties to the physical arrangements and the vital processes, especially to the temperature of the living body.

Actual observation demonstrates that specially remarkable and physiologically most exceptional phenomena attend the reception of this alcohol into the system. There is—

(1) A DIMINISHED ELIMINATION OF CARBONIC ACID BY THE LUNGS.—This result, Prout* and Vierordt† observed, followed “almost instantaneously” very minute doses of alcohol, and continued for many hours, even into the next day. Hammond‡ and Perrin,§ influenced by prevalent theories, failed to notice this instantaneous effect, having purposely delayed making their observations—the former for from one to five, the latter for two hours—after so-called dietetic doses of alcohol, the latter observer using the light wines and beers of France. Even after those intervals a diminution of carbonic acid ranging from 5 to 25 per cent. was an invariable result. The exactitude of these valuable observations places them beyond all dispute.

(2) A LOWERING OF THE TEMPERATURE OF THE BODY.—This

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* Annals of Philosophy, 1813-1814.
† Physiol. des Athmens, Karlsruhe, 1845.
§ Gazette Hebdomadaire de Med. and de Chir., 1864.
fact, long familiar as a matter of practical experience in high latitudes, has within recent years been determined by exact experiment and observation: in alcoholic coma the temperature has been found lowered 8° F., and Richardson has found three days to elapse before the full re-establishment of animal warmth. An important research recently presented, "On the Thermogenesis of Alcohol," by Dr. Bevan Lewis, while contend- ing for the heat-producing power of alcohol, admits a marked lowering of the body temperature under its influence. M. Perrin's observations also indicate an invariable lowering of temperature under the influence of alcohol.

These effects of alcohol prove incontestably that it interferes profoundly with the most important vital functions, and it cannot be disputed that these deviations from the normal conditions under which the vital processes of the animal system are sus- tained are of most serious import. These facts also are utterly inconsistent with, and subversive of, the idea that alcohol in any form or in any degree is decomposed in the system, and they are by no means the only facts which point towards that conclu- sion. When we consider further the full import of the fact that alcohol unchanged has been recovered 24, 32, and even 120 hours after its ingestion; and in appreciable quantities, from every organ and tissue and fluid of the body, and also from every free exhalant surface, especially, as universal consent of testimony proves, from the lungs,—with the additional fact that the most painstaking search of anxious and not always unpre- judiced investigators has utterly failed to detect any evidence of its change, it becomes nothing short of a certainty that alcohol is not consumed in the body.

In view of all the facts now available, it may safely be main- tained not only that it is not decomposed, but that it is not decomposable by the vital forces.

The failure to recover the whole amount of the alcohol ingested, on which so much has been based, is no reason for assuming, as has been so confidently done, that it is decomposed and thus disappears. Its absolute and singular diffusibility throughout the relatively immense mass of fluids, and more or less solid tissues of the body, even to their ultimate cell elements, with some of the fatty constituents of which, from its high solvent power over them, it must mingle most intimately, if it does not

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* Journal of Mental Science, April, 1880.
† Gazette Hebdomadaire, 1864.
‡ Subbotin.
§ Perrin, &c.
|| Parkes and Wollowicz.
¶ Alcohol at 113° F. dissolves all the brain fats, and retains a considerable proportion in solution, even when cold.—Thudichum's Researches on the Analysis of the Brain.
actually combine, temporarily at least, as is assumed by an observer so sagacious as Parkes,* is an abundantly sufficient reason why it cannot be recalled any more than other “spirits from the vasty deep,” at the pleasure of inconsiderate experimenters.

We thus justify the views put on record twenty-five years ago, the expression of which is unfortunately as appropriate to-day as it was at that date. We then said, and now repeat, “that an egregious mistake has been committed by scientific and professional writers on the employment of alcohol—a blunder into which even those who have undertaken the advocacy and defence of total abstinence on scientific grounds have deliberately stumbled. This mistake has been to acknowledge, or to take for granted, that the living human system is capable of decomposing the alcohol which it receives, and that it thus turns the elements of which it is composed—the carbon, and hydrogen, and oxygen—to good account in the sustenance of life. Around this assumed fact, as a centre, a whole host of worthless and mischievous pretences for the use of alcohol on physiological and therapeutic grounds is made to cluster. It is the keystone of Liebig’s fallacious theorising, which has been so widely and unhesitatingly accepted, and used with so much success, especially among the medical profession, to justify the common use of alcohol. This assumed fact we are prepared to deny, or rather we do deny it, and are prepared to give our reasons. But, in the meantime we demand, as we have a right to do, from those who have assumed it to be a fact, the proofs which they ought to have in their possession. These are yet to be produced, for the idea stands forth in the writings of scientific men as a stark-naked assumption without a single proof worthy of the name.” †

Let us now endeavour to trace the mode in which alcohol operates to produce these most important and significant deviations from the normal condition, viz., the diminution of the exhalation of carbonic acid, and the depression of the body temperature; and here it will be found that the recognition of the physico-chemical properties of alcohol will guide to the explanation of these complex and mysterious phenomena. The ingested alcohol is not digested, but passes at once from the stomach through the portal system, and reaches the right side of the heart along with the blood fully charged with carbonic acid. On reaching the pulmonary surfaces, in virtue of its high elastic force—4·50 at the normal temperature of the body—a certain portion of it is immediately exhaled. It has occupied so much of the exhalant surface of the lungs, contending with its congener carbonic acid for an exit. A certain amount of carbonic acid must have been displaced from its special

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* Practical Hygiene, p. 274, 1873. † Abstainer’s Journal, 1855.
exhalant surface, and, detained in the blood with the unexhaled alcohol, it is passed on in the general circulation, where by-and-by we shall trace its operation. The exhaled alcoholic vapour reaches the large body of residual air in the lungs, where, in virtue of its high vapour density, and by the absence of those conditions which would favour its outward progress—such as are provided in the case of carbonic acid by the law of the interchange of gases—its expulsion from the respiratory area is retarded; at each movement of the tidal air part of the alcohol is expelled, part condensed and repelled; for this strange agent can be inspired as well as expired by the lungs, while the residual air at every beat of the heart is receiving more alcohol from the blood; there is thus interposed a further physical obstacle—a veil of alcoholic vapour, we know not how dense and obstructive, at once to the free exit of the carbonic acid from and the ingress of oxygen to the pulmonary surfaces. The exact amount of influence which the diffusible but dense vapour of alcohol thus exerts in retarding the interchange of gases in the lungs is at present under investigation by Dr. Aitken, of the Edinburgh University.

By a natural transition we proceed to inquire as to the influence and operation of the vitiated circulating fluid. The blood charged with the unexhaled alcohol, with excess of carbonic acid, and with diminished supply of oxygen, passes from the lungs to the heart, which, acting under its special susceptibility to the direct exciting action of alcohol, sends it onwards with abnormal rapidity and force throughout the general circulation, thus compelling in every organ and tissue increased cell-activity. In this imperfectly depurated and imperfectly oxygenated blood, driven onwards at an abnormal rate through the tissues, with the increased force and frequency of the heart’s action under the spur of the alcohol, we have supplied all the conditions required to determine the production of the infinitely varied degenerations of tissue which are so prominent in the histological changes produced by alcoholic indulgence. The increased activity of the circulation compels proportionately increased activity in the cell changes in all the tissues; and the essential condition for normal metabolic change—sufficient supply of oxygen—being absent, the requisite changes in the blood and every organ and tissue are in consequence imperfectly effected. The products of this partial metamorphosis, especially such as are derived from the more complex and highly organised tissues, may be traced:—those in which the nitrogen, phosphorus, sulphur, and some of the mineral constituents of the tissues pass into the blood, in a soluble state, while the carbon and hydrogen, with some mineral elements, in the shape of the various abnormal fats and other morbid formations, remain as the constituents of the degenerated
tissues. Abundant evidence in accordance with this view could
be adduced from the many valuable and most instructive en-
quiries which have been prosecuted, as to the histological and
chemical character of these degenerations. The effect of these
degenerative changes on the functional efficiency of important
organs and tissues is a fruitful field yet waiting investigation.

The researches of Pasteur have shown that active cell life can
go on, and products of change be evolved, in the entire absence
of air; this fact and the peculiar changes known to occur in
dead muscular and other tissues, as in the production of adipocere,
in which the chief factor is the more or less complete exclusion
of oxygen, reflect some interesting light on the actual as well as
the possible transformations which evolve or may evolve in the
more highly organised living tissues in the special circumstances
under discussion.

In thus tracing so formidable a series of results to the action of
alcohol in connection with tissue degenerations, regarding it as,
indeed, the fons et origo mali, we recognise the peculiar appro-
priateness of the designation which it has received, viz., "The
genius of degeneration."*

Let it not be supposed, however, that we ignore the other
causes which are in operation to produce tissue degeneration,
and intensify and aggravate this action of alcohol; atmospheric
and dietetic conditions contribute largely to the production of
the multiform varieties of tissue degeneration, but all combined
these are as "a drop in the bucket" compared with the influence
of alcohol in the varied forms under which it is consumed.

The argument has been used that if the result of the action
of alcohol was to detain carbonic acid in the system, it could
not fail to be speedily fatal; but the capacity of the great mass of
the blood and other fluids of the body for storing up and dis-
posing of the soluble products of those perverted transforma-
tions, as well as the capacity of the tissues for retaining the
insoluble products, is as yet altogether unknown, and cannot be
limited.

It is submitted that both the mode of production and the
effects of the diminished exhalation of carbonic acid by the lungs,
as now much too concisely and imperfectly set forth, are in
entire accordance with all that is surely known of the physico-
chemical properties of alcohol, and of its action as a physi-
ological and pathogenic agent in the living system, and are also
consistent with its recognised action as a truly therapeutic
agent, which obviously must be limited to those very rare
conditions in which the diminished sensibility and lessened

* Dickinson—Lancet, 1872.
vitality attendant on excess of carbonic acid in the system can be regarded as salutary.

The lowered vitality inseparable from the circulation of a blood imperfectly vitalized through the vitiation of the respiratory function, and becoming increasingly so, while alcohol remains in the system, with every respiratory act, and every throb of the pulse, supplies an abundantly sufficient explanation of the lowered animal temperature so uniformly exhibited by subjects under the influence of alcohol.

Before concluding, it may be well to refer in a few words to the lively controversy long sustained, and still undecided, as to the special action of alcohol — whether its action be stimulant, or whether it be narcotic — the assertions on the one side being as emphatic as on the other. We believe that the explanation and solution of the controversy lies in the fact that the phenomena of alcoholic intoxication in all its varied degrees of intensity present features which are complicated by the operation of two agents. In the first instance, and immediately on the imbibition of alcohol, general excitement occurs, a universal sur-excitation prevails, a seeming exaltation of vital activity throughout the frame; but very soon, mingled with this, there appear unmistakable signs of impairment of sensibility, of vasomotor activity, of control of mental processes and bodily movements. The struggle of excited action is maintained as long as possible; and in some degree it may be traced through the deepest insensibility; but soon indications of a depression of all vital activity appear, the heart and forces of circulation are lessened in power, respiratory movements are weakened, sensibility of nervous centres is impaired, even to coma and death. The action of alcohol alone, we submit, is insufficient; but alcohol with superinduced excess of carbonic acid fully suffices to explain these complicated phenomena.

Renewed and more extensive observation ought to be directed to the interesting question of the effects of the detention or accumulation of carbonic acid in the circulation. According to the unique experiments and observations of Lehmann,* the symptoms correspond most remarkably with the phenomena of alcoholic intoxication even in its early stages.

From the facts and ideas now presented, much too concisely for their fair and adequate representation, some conclusions of great practical importance are to be drawn. Whatever estimate may be put upon the explanation now offered as to the modus operandi by which alcohol produces the diminished exhalation of carbonic acid, the lowering of the animal heat, and the various

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degenerative changes so inevitably associated with its action,—these facts stand as unquestionable consequences of its presence in the human organism, and must be regarded as of transcendent importance in all questions affecting the employment of alcohol, especially as a dietetic or therapeutic agent.

The great point must no longer be disregarded or ignored, that these consequences follow immediately on the reception of very small doses of alcohol, so quickly as altogether to exclude the possibility of any action in the direction of diminished metamorphosis of the tissues, and, in fact, under such conditions of increased vascular activity as must determine the production of augmented tissue change. The fact, then, of increase of change products being coincident with diminished elimination must be accepted.

Finally, in few words, we conclude,—

1. That the claim that alcohol can be regarded as in any sense a food must be definitively discarded.

2. That the claim that alcohol can be regarded as a stimulant of any value to life can only be accepted in view of its effects: it certainly spurs to the depression of the most important vital activities.

3. That the claim that alcohol can be regarded as a therapeutic agent can only be admitted when exalted sensibility requires to be repressed, and when the detention of the products of vital changes in the system is a lesser evil than the disease for which it is employed. Whoso hath wisdom let him decide.

We must refer to one consideration of special interest in connection with the relation of the action of alcohol to its physical properties, and one of great practical import. Careful observers have been led by experience to the conclusion that in all but the most extreme degrees of morbid organic changes produced by alcohol, and even in the maddest excitement of delirium tremens, the living system has a marvellous power of elimination and recuperation, which only requires to be aided by the absolute withdrawal, and not hindered, as it too frequently is, by the continuance of the cause, to allow of the vital energies of the system putting to rights the most woful train of evils—Causa sublata tollere effectus.
THE INFLUENCE OF ETHYLIC ALCOHOL ON TEMPERATURE.

By Harrison Branthwaite, F.R.C.S.Ed., Willesden.

To demonstrate clearly and indisputably the physiological action of alcohol upon the living human frame is one of the most important questions of the day—a question worthy the attention of men of the highest intellect and the noblest feelings, involving as it does the solution of social and political problems of vital importance to the world at large.

It is alleged that society suffers from the prescription of drinks containing alcohol in all kinds of diseases, acute and chronic, without any scientific basis for such prescription, and that there is an equal want of sound philosophical reasons for admitting beverages containing this agent as articles of daily consumption in health.

There exists some ground for these allegations, seeing that medical men differ most materially in their views respecting the precise effect of alcohol upon the system; consequently how and when it ought to be administered are equal matters of dispute. Scientific men cannot remain passive in the midst of such conflicting opinions; they must settle the controversy, unravel the mystery, and make clear what is now enveloped in doubt and uncertainty. This they are bound to do, not only as men to whom suffering humanity appeals for help and succour in the hour of its greatest need, but as men whose duty it is to guard the public health, as philosophers and philanthropists, regarding their profession from the lofty standpoint of Hufeland, who says: "Thine is a high and holy office; see that thou exercise it rightly—not for thine own honour, or glory, or profit, but for the good of God and the welfare of thy fellow-men."

It is not my intention to treat the general physiological question. Whether alcohol be wholly or partially eliminated: whether it be a conserver of tissues: whether it be oxydised and prevent denutrition: whether it assist digestion or the reverse: whether it be a stimulant and restorative, or a sedative and narcotic, are questions I shall not at present discuss. My contribution to the work of the Congress will be restricted to the consideration of one of the many points arising from the second question on the programme—viz., "The study of the physiological action of pure ethylic alcohol." The point to which I especially direct your attention is, "The influence of ethylic alcohol on temperature."

Most probably in the regulation of the temperature of the body

* Read at the International Temperance Congress, held at Brussels, Aug., 1880.
lies the key to the solution of many problems of medical science. The value of the clinical thermometer in the hand of a careful observer cannot be over-estimated; and I believe it is destined in the future to play an important part in the treatment of disease and the solution of the vexed question, What to eat, drink, and avoid in health.

Sanctorious, who died about 1638, was the first to apply thermometric instruments of his own manufacture to determine temperature. Nearly a century, however, passed before the measurement of temperature by Boerhaave was, by means of improved instruments, reduced to a science. In England, in 1740, Martin published the first accurate observations on temperature in healthy men and animals. Currie, in 1797, made his observations available for medicinal purposes. For forty years following the science of thermometry seemed in danger of being forgotten; but in 1840 earnest men again began to investigate the subject.

The results of past researches with regard to the effect of alcohol upon temperature are not easily summarised: notwithstanding their great importance, they are only to be found scattered here and there in medical and other scientific journals. Liebig’s view, that alcohol in the body combined with the oxygen to furnish heat, was a theory long held; the first expression of doubt as to its truth was, as opinions often are when antagonistic to preconceived notions and prejudices, treated with levity. For ages past chemists and physicians had regarded alcohol as an excitant; in spite of this, physiologists persisted in experimenting, eliciting facts, and obtaining results not to be ignored.

**Dr. John Davey in 1845.**

Dr. John Davey, as far as I have been able to ascertain, was the first to publish the result of any observations; his remarks are to be found in the “Philosophical Transactions of the Royal Society” for 1845. Objections were taken to his conclusions because of the unreliability of his instruments.

**Nasse in 1845.**

Nasse in the same year (1845), by experiments upon rabbits, demonstrated the tendency of alcohol to reduce temperature.

**Lichtenfels and Fröhlich in 1852.**

Lichtenfels and Fröhlich, in 1852, experimented with beer, wine, and alcohol; they concluded that by the exhibition of alcohol the temperature was reduced, that such reduction was preceded by a slight rise due to the stimulating action of the alcohol on the blood-vessels of the mouth.
The Influence of Ethylic Alcohol on Temperature.

DEMARQUAY AND LECONTE IN 1859.

Demarquay and Leconte, in 1859, adduced similar evidence as to a general reduction of temperature.

DR. RICHARDSON IN 1865.

Dr. Richardson, in 1865, brought the subject before the British Association during its sittings in Birmingham, and there stated his convictions that both ethylic and methylic alcohol reduced temperature. During the discussion following his paper, whilst it was not denied that such a result might follow the use of methylic, doubts were freely expressed as to such being the case after ethylic alcohol; exception was also taken to the manner in which the experiments had been conducted. In consequence of this, Dr. Richardson eliminated from the paper all reference to temperature in respect to either alcohol.

TSCHESECHEIN IN 1866.

A Russian investigator, in 1866, after experimenting upon rabbits, said that alcohol reduced temperature.

RINGER AND RICKARDS IN 1866.

Ringer and Rickards, in the Lancet (August 25, 1866), give the result of their observations on persons in a normal condition as follows:—In two out of three, to whom a large dose was given, there was a marked depression, amounting to 3° Fahrenheit. In the third case, a confirmed drunkard, the effect was slight; they argue from this that habit lessens the probability of the temperature being influenced. In eleven cases, with ordinary doses, eight showed a reduction of temperature, three were unaffected, two out of the three being confessedly free-drinkers; the general conclusions being that alcohol, in ordinary quantities, caused a slight depression, but so small as not to be of any consequence.

DR. RICHARDSON IN 1869.

When the British Association met at Exeter in 1869, Dr. Richardson again read a paper, in which he showed that ethylic alcohol, in large doses, reduced the temperature in birds 8 deg. Fahrenheit, and in animals 4 deg.

DR. TIMMERBERG IN 1869.

Dr. Heinrich Timmerberg, in 1869, found as the result of observation and experiment upon animals that alcohol always reduced temperature.

DR. THUDICHUM IN 1869.

Dr. Thudicum, in 1869, said: "Alcohol, in large doses, reduces temperature, but moderate doses have an opposite effect."
The Influence of Ethylic Alcohol on Temperature.

Dr. Felton in 1869.

About the same time Dr. Felton, of America, gave sixty-two cats hypodermic injections of alcohol, and made 230 thermometric observations. In the healthy cat there was invariably a reduction, which rose afterwards above normal; he observed, when the dose was repeated, the rise was checked.

Parkes and Wollowicz in 1870.

In May, 1870, a paper, by Parkes and Wollowicz, was read to the Royal Society on the "Effects of Ethylic Alcohol." In their experiments brandy and alcohol were used; little effect upon the temperature was observed, that little being in the direction of increase rather than decrease; subsequent experiments with red Bordeaux wine showed similar results.

Professor Binz in 1873.

At the meeting of the British Medical Association at Bradford, in 1873, Professor Binz read a paper, in which he stated that small doses of alcohol produced no extraordinary increase or decrease of temperature; that moderate doses showed a distinct decrease of about half-an-hour's duration or more, and inebriating doses a still greater lowering of from 3° to 5° Fahrenheit. He also considered that when the system was inured to the use of alcohol moderate doses indicated no measurable cooling, or the reverse.

Professor See in 1873.

Professor See, in 1873, remarks: "Alcohol is a very active refrigerant; ten grammes of diluted alcohol given to a middle-sized dog lowered the temperature 1 deg. in ten minutes." In the same paper the learned professor argues that hygienists and physiologists have only to consider the action of alcohol on the forces in moderation and ignore altogether any responsibility for the effect of large doses.

Experiment by Dr. Rickards in 1873.

Ringer, in his "Handbook of Therapeutics," published in 1873, gives an experiment by Dr. Rickards. A drunkard had twelve ounces of brandy administered in one dose without any reduction of temperature, although it made him dead drunk.

Charteris in 1879.

Charteris, in his "Handbook of Medicine," published in 1879, says: "The taking of alcohol first causes a fall in temperature which does not last long, for it requires a considerable amount to have any material influence."
Many other eminent physiologists might be referred to, whose observations and experiments have shown equally varying results. Sufficient, however, has been given to prove that there is great need for further investigation. A careful study of the researches of others revealed contradictions which I found it impossible to reconcile, and therefore I resolved upon conducting a series of experiments which, though at present incomplete, have proved so interesting that I make no apology for presenting them to this Congress. A fatal objection may be raised to the majority of experiments hitherto presented; they have been conducted with different kinds of beverages, containing alcohol in various and uncertain quantities, which, as Dr. Edmunds says, "can never be brought fairly into line for scientific examination." In all my experiments, in small and what may be considered moderate doses, I have used ethyllic alcohol sp. gr. \( \frac{795}{1000} \) of certified purity. The temperature has always been taken under the tongue, in a room as nearly as possible of one temperature. I have reason to believe, from proof obtained by myself, that no better results are obtained when the temperature is taken in the rectum, whilst, for obvious reasons, persons more readily consent to be experimented upon when the temperature is taken in the mouth. I have not utilised the lower animals; the circumstances under which they are experimented upon are such as to render the results more or less unreliable. Besides, great care is required in applying to the human system any results obtained from such experiments, therefore I have chosen to investigate the subject in its influence upon the system of which I know most, and in the treatment of which, as a medical man, I am the best acquainted.

In endeavouring to arrive at some conclusions, I have not been unmindful of the fact that much must necessarily depend upon whether the person under examination had been in the habit of imbibing alcohol in any one of the many forms in which it is popularly provided. I have, therefore, carefully selected my subjects for experiment from two classes—first, total abstainers; and second, moderate drinkers.

The result of my observations upon twenty-seven total abstainers is as follows:—

One with twenty minims: No immediate increase of temperature followed, but in three-quarters of an hour a fall of \( -6 \) Fah. was registered, lasting three-quarters of an hour. On a subsequent day, under precisely similar circumstances, the same person took ten minims; in half-an-hour there was a fall of \( -2 \) Fah., which lasted three-quarters of an hour.

Seven, with half-dram doses, showed no temporary exaltation of temperature; but in all a fall averaging \( -4 \) Fah. was registered.
The Influence of Ethylc Alcohol on Temperature.

This took place from three-quarters of an hour to one hour and three-quarters, and continued an average of thirty minutes.

Five with one-dram doses: One in one hour and a-quarter rose \( ^{+4} \) Fah., and another in half-an-hour \( ^{+2} \) Fah. No measurable increase was observed in the other three. In one and a-half to two and a-quarter hours a decrease in all took place, averaging \( ^{+5}_{\frac{1}{2}} \), remaining at the lowest point for thirty-five minutes.

Three with two-dram doses: A rise of \( ^{+4} \) Fah. and \( ^{+2} \) Fah. was registered in two, whilst in the third no effect was produced, but in one and a-half to two and three-quarter hours a decrease in all occurred of \( ^{-5} \) Fah., and continued an average of thirty minutes.

Three with three-dram doses: An immediate rise followed in two of \( ^{+2} \) and \( ^{+3} \) Fah.; in the other no rise was observed. The total reduction which followed showed an average of \( ^{-8} \) Fah., remaining at the lowest point for forty-five minutes.

Seven with four-dram doses: A measurable rise in four took place of \( ^{+6} \), \( ^{+4} \), \( ^{+2} \), and \( ^{+5} \) Fah.; in the rest no rise. In one and a-half to two and a-quarter hours every one was reduced on an average \( ^{-7} \) Fah., the reduction continuing for half-an-hour.

One with six drams showed an immediate rise of \( ^{+2} \) Fah. in fifteen minutes, which was followed by a gradual decline, reaching in three hours to \( ^{10} \) Fah.

Moderate Drinkers:—

Six with one, two, three, four, and six drams respectively. One showed an immediate rise of \( ^{+1} \) Fah. In one and a-half to two hours all had declined to an average of \( ^{10} \) Fah.

The temperature was taken every fifteen minutes, under, as nearly as possible, the same conditions as to temperature of room, time of day, and condition of stomach as to food. In speaking of the fall taking place in a given time, I mean that the lowest point was registered in that period, remaining at that point for the average time stated; this was succeeded by a rise towards the starting-point, although the majority, whilst under observation, did not reach that point. In two or three the rise was rapid, and went beyond this. Allow me to call your attention to tracing No. 9. In this experiment one dram was given every hour. It is curious to observe, at each recurring period, the temperature—apparently stationary, or showing a tendency to rise—was immediately checked, and further depressed. This confirms the statement of Dr. Felton, to which I have alluded, who observed the same in rabbits.

The degree of body-heat registered by the thermometer, being the expression of the result of a number of processes going on in
The Influence of Ethylic Alcohol on Temperature.

the organism, cannot be falsified; therefore any marked and regular decrease, such as I have indicated, must result from disturbance. That being so, it is important to determine the ultimate effect on the system of the disturbing agent. That pure ethylic alcohol, even in minute doses, does reduce temperature is certain. My experience leads me to doubt the conclusion arrived at by some investigators—that the system becomes so accustomed to its presence, even in moderate drinkers, as to negative the tendency to depression of temperature on its administration, seeing that in all my experiments except one on those who were in the daily habit of taking alcoholic drinks, there was a decided reduction.

The exaltation of temperature observed in some cases, immediately preceding the reduction, has been alleged to be due to the action of the spirit on the blood-vessels of the mouth. In my opinion this is not a sufficient explanation, seeing that in my experiments the alcohol was administered through a glass tube, and the mouth rinsed with water at 90° F. during the fifteen minutes which elapsed from taking the dose and the first thermometric observation. I incline to the opinion that such rise, when it occurs, is due to a quicker perception, in some than others, of the presence of a disturbing agent.

On the actual causes of the decrease there exists great diversity of opinion amongst those who have given any thought to the question. Perhaps the most generally received opinion is, that after the introduction of alcohol into the system the CO₂ in the expired air is diminished, and the quantity of urea considerably lessened; therefore, as these are the final products of the oxidation of nitrogenous substances in the organism, and the quantities of each indicate the amount of oxidizing processes in general in the system, or the intensity of the tissue changes, so a diminution of these secretions shows a diminution of tissue change. If alcohol thus acts upon tissue metamorphosis, the reduction of temperature would be a necessary consequence, since a diminution of the oxidation processes must be accompanied with a reduction of the heat they produce. It is also suggested that heat is lost by the skin, the great regulator of the temperature. Any action of the vaso-motor mechanism which, by causing dilatation of the cutaneous vascular areas, leading to a larger flow of blood through the skin, must, necessarily, by conduction, radiation, and evaporation, reduce the body heat.

Thermometry reveals to us the very narrow limits existing between health and disease; that upon an equable temperament depends the enjoyment of mental and physical vigour. Therefore, any agent having a constant tendency to lower the temperature, and so depress vital power, cannot be persistently indulged in
without a tendency—imperceptible it may be—to engender disease of body and mind.

The general conclusions which I draw from my experiments are as follows:

1. That a reduction of temperature invariably follows the administration of ethylic alcohol, sometimes preceded by a slight rise.
2. That small doses reduce the temperature. Ten and twenty minims produced a measurable effect, whilst half-dram doses cause an average fall of .5 Fah.
3. That the fall sets in from fifteen to twenty minutes after the alcohol is taken.
4. That the reduction lasts a variable time—say from forty-five to sixty minutes.
5. That the variations are not dependent on the state of the pulse.
6. That of repeated doses each has a depressing influence.
7. That the reduction from small doses was observed alike in total abstainers and moderate drinkers.

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Proceedings of the
British Medical Temperance Association.

DECLARATION SENT TO THE INTERNATIONAL TEMPERANCE CONGRESS AT BRUSSELS, AUGUST, 1880.

We are deputied by the Council of the British Medical Temperance Association to convey to the International Temperance Congress some declarations of our Association on the question of Total Abstinence.

Our Association is composed entirely of medical men living in the United Kingdom, most of whom are actually engaged in the practice of medicine and surgery.

All the members of the Association are total abstainers from the use of alcoholic beverages; there are at the same time no laws of the Association which prevent members from prescribing alcoholic drinks for the sick who are under their professional care. As a rule members rarely prescribe alcohol medicinally, some never prescribe it at all; others (as the President) only prescribe it, when they think it is required, in the form of pure ethylic alcohol in systematic doses.

The experience of the Society generally is that practice, medical and surgical, is rendered more effective and useful by these rules of abstinence. They find no difficulty in carrying out their principles either in public or private practice. As the majority of them, two hundred and thirty-seven in number, are largely engaged in professional work, the fact as to their
mode of practice is, it is hoped, encouraging as an example which may be largely followed.

At first it was felt by many that to treat disease without the use of alcoholic stimulants was to accept a risk which involved very great responsibility. In truth, as the experience of abstinence has widened, and as the other side of the question, the abstaining side, has come under observation, the sense of responsibility has been reversed, and now the difficulty seems to be to determine when alcohol ought to be permitted.

Up to the present time we have not been able to collect any statistics of comparison between our own practice and that of other physicians and surgeons who prescribe alcoholic drinks largely; but many of us can compare the results of our present practice with those which attended our practice when we were accustomed to administer such drinks very generally, and we believe that the results we now witness are better than they were before.

We are unanimous, therefore, in concluding that the present general mode of practice is too indiscriminate, and that all avoidable prescription of alcoholic beverages ought to be in every possible way discouraged.

Passing from the particular art of prescribing alcohol to our observation of the action of alcohol on persons generally, that is to say to its employment as a beverage, we are led to the following conclusions:—

That alcohol cannot in any sense be considered as a necessity for the maintenance of healthy life.

That it is not a food in any true and practical sense of that term.

That labour of the severest kind, mental and bodily, can be carried on without it, and that the steadiest and best work is best done without it.

Many of us have under our charge numbers of working men who are engaged in various employments, and who are associated in clubs for mutual benefit and assurance. Our experience respecting these is that such members, being divided into two classes—those who abstain and those who do not abstain from intoxicating drinks—show a better health among the abstaining class, a greater power of endurance, a longer life, and a better capability of resisting disease and the results of accident.

These general observations of ours are supported in the most remarkable degree by the statistical facts which have been collected in certain of the public institutions of our country. Among such facts the following is of extreme importance:—

The United Kingdom Temperance and General Provident Institution is a Life Assurance Office which insures members in two sections, one in which all the members are total abstainers; in the other moderate drinkers, all intemperate persons being, of course, excluded. The two sections are exactly alike in every other respect, about 20,000 lives being insured in the General Section, and 10,000 in the Temperance Section. Returns of the expected and actual claims in these sections have, we believe, been presented to the Congress up to the year 1877: adding now the years 1878 and 1879 we find that during the years 1866 to 1879 inclusive, in the General Section 3,450 claims were expected according to the tables of mortality, and 3,444 were actually made. In the Temperance Section, according to the same tables, 2,002 deaths were expected, but only 1,433 took place. That is to say, the deaths among the abstainers were 29 per cent. less than among the moderate drinkers. The quinquennial bonuses in the Temperance Section have been 17½ per cent. greater than those in the General Section.

That a large mortality follows the general use of wines and other intoxicating drinks containing ethyl alcohol. Observations we have made in our own circle of practice bring before us yearly evidence of this fact, a fact which is confirmed by the universal experience, we may say, of the medical profession of the British islands.

It has been computed by the President that the mortality from the per-
sonal use of alcoholic drinks in England and Wales could not be put down at less, directly and indirectly, than 50,000 per annum. Recently one of our fellow-societies, not abstaining, namely, the Harveian Society of London, has published the following facts. Returns were collected from several members of the Society, practising chiefly among the middle classes in London, of the extent of which alcohol acted as a cause of death, in the cases whose death certificates they had filled up. Out of 1,615 deaths of adults, so recorded, 188 (or 11.64 per cent.) were partially, and 74 (or 4.58 per cent.) were wholly due to alcohol; making altogether 16.22 per cent.

We are of opinion that nearly the whole of the evils thus produced are traceable to the action of ethyl alcohol as it is presented in wines, beers, and spirits. We do not deny that occasional injuries result from adulterations and from admixtures of the higher alcohols; and we deem it probable that the morbid condition of the body resulting in delirium tremens, is more readily produced by the heavier alcohols, butyllic and amyl, than by the lighter ethyl.

But, taking it all in all, the evidence is sufficiently clear to our minds that the agent which produces the steady course of alcoholic disease, and the high mortality due to alcohol, is that known as ethyl alcohol.

Under the impression that a general expression of opinion would be expected from us we have added these latter observations. We would conclude by repeating that our existence as a society of scientific men is based on the circumstance that we are members of the profession of medicine who ourselves practice total abstinence, and that our unity of habit in this respect is that which has led us to combine for the interchange of experience and observation.

(Signed),
B. W. RICHARDSON, M.D., M.A., LL.D., F.R.S., President.
J. J. RIDGE, M.D., B.S., B.A., B.Sc. Lond., Honorary Secretary.

THE SUMMER QUARTERLY MEETING.

The Quarterly General Meeting of the British Medical Temperance Association was held in the rooms of the Medical Society of London on Tuesday, July 27. In the unavoidable absence of the President, Dr. Richardson, Dr. Norman Kerr was elected Chairman. A paper was then read by Dr. C. R. DRYSDALE, on "Acute and Chronic Alcoholic Poisoning," which is given entire in our present issue.

In the discussion which followed Dr. J. J. RIDGE expressed his appreciation of the very interesting and full description of the noxious influence of alcohol which had just been given. He stated his belief that imbecility in the child was sometimes due to a drunken condition of the parents, of which Dr. Drysdale had expressed some doubt. He pointed out that fatty degeneration of tissues as a result of the use of alcohol was probably produced by several modes of action; first, the tissues which were formed under the influence of alcohol were likely to be less perfect, and hence more prone to degeneration; in the next place alcohol interfered with the due course of oxidation of tissue; and lastly, it checked the proper removal of waste matter. With regard to the prolonged lives of many hard drinkers to which Dr. Drysdale had alluded, he thought it arose chiefly from the fact that these people had large vital capacity of lungs, or extra secreting power of kidneys, so that they were more easily able to throw off the spirit, which would otherwise exert its special chemical influence.

Mr. PARAMORE spoke of the stunt-
British Medical Temperance Association.

The opportunity afforded by the meeting of the British Medical Association at Cambridge was employed by the Council of the British Medical Temperance Association to enable those of its members who were attending the meeting to become acquainted with one another, coming, as they did, from all parts of the kingdom. It was accordingly arranged that the members should lunch together in the Lion Hotel, on Wednesday, August 11, at one o’clock. At that hour the following fourteen members met together.—S.S. Alford, Esq., London; Dr. W. Carter, Liverpool; F. J. Clarke, Esq., Luton; Dr. Edmunds, London; Dr. Holdsworth, Wakefield; Dr. Eyton Jones, Wrexham; Dr. Norman Kerr, London;
Dr. Ridge, Enfield; Dr. Royle, Reading; Dr. Scatiff, London; Dr. Stewart, Clifton; Dr. Thompson, J.P., Bideford; F. Vacher, Esq., Birkenhead; and Dr. Vale, Bidford. There were also present, as visitors, Dr. Beard, of America, and Professor Mayor, of Cambridge. Dr. Thompson, J.P., presided at the table, and towards the conclusion of the lunch said a few words of congratulation on the improving condition of the minds of the medical profession in relation to alcoholic drinks. The honorary secretary, Dr. Ridge, then stated briefly the papers which were down for reading in the various sections of the meeting, which had reference to the alcohol question. After a few words from Drs. Stewart, Kerr, and Alford, and a vote of thanks to the chairman, the members dispersed to attend the sections. It need hardly be said that no alcoholic beverages were employed on this occasion, but besides the usual temperance beverages, a new kind made its first appearance in public, called hedeozone, manufactured by Messrs. Packham & Co., of Croydon. It is, says a medical correspondent, a tonic, effervescing drink, of a nature similar to that of zoedone, but of a somewhat different flavour. It was highly approved of by the critical medical connoisseurs, and will doubtless fill a distinct place in the large army of substitutes now at command to take the place of intoxicating liquors.

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NEW MEMBERS.

Dr. Evan Evans  . . .  Beaumaris.
Dr. R. Martin  . . .  Manchester.
Dr. O. R. Prankerd  . . .  London.
Dr. E. B. Roche  . . .  Norwich.
J. Shaw, Esq.  . . .  London.
F. W. Sutton, Esq.  . . .  Reading.
Surgeon-Major Whitla  . . .  Sandgate.

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NEW ASSOCIATE.

A. Howell, Esq.  . .  London Hospital.

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NOTICE.

The next Quarterly General Meeting will be held in the Rooms of the Medical Society of London, Chandos Street, Cavendish Square, London, on Tuesday, November 16, 1880, at four p.m.

J. JAMES RIDGE, M.D., Hon. Sec.
THE BRITISH MEDICAL ASSOCIATION AT CAMBRIDGE.

The Annual Meeting of this great body of medical men was held at Cambridge in the second week of August. Various phases of the Temperance question received considerable prominence, and awakened unusual interest.

WINE AT THE ANNUAL DINNER.

At the first general meeting of the Association, on Monday evening, 9th August, Dr. Norman Kerr, taking advantage of an alteration which was being made in the regulations for the conduct of the annual meetings of the Association, had given notice that he intended to move an addition to No. 3, to the effect that the price of the dinner-ticket should not include a charge for intoxicating drinks.

Mr. Barrow, to whom was entrusted the task of moving the adoption of the new regulations, commenting on the proposed addition by Dr. Kerr, said he presumed this stand was taken on the temperance question. Now round the dinner-table they might all adopt Local Option if they chose, but he thought there would be no difference about this, that the sociability of the meeting depended very much upon each gentleman having placed before him those potations of which he might be inclined to partake. If Dr. Kerr preferred to drink water, let him do so, but let those who preferred wine, drink wine, but with temperance. Let the provision be put on the tables at a fair price, and let the price be a guinea.

Dr. Norman Kerr then rose and moved his amendment. He could only say, in reply to the observations of the last speaker, that "Thrice armed is he that hath his quarrel just." He pleaded only for justice. This movement had nothing to do with the temperance or total abstinence question; it was simply an attempt to redress an already existing wrong. There were some members of this Association, and he was not ashamed that he was one of them, feeble and humble though he might be, who felt that following the bent of their most cherished convictions, they could take no part in the social meeting of Thursday night, because they felt that if they paid for any intoxicating liquors, which, under the present régime they were compelled to do, they were assuming a part and a responsibility in the drinking system of the country, by which so much disease and crime and disorder were produced. They might be right in this, or they might be wrong, that was not the question; but they could not go to any dinner and pay for intoxicating liquors without violating their convictions. Was it right, was it rational, was it reasonable, was it just for an educated and thinking association to exclude men whose actions and whose personal habits showed that they believed their convictions? Every member of the Association whom he had consulted had expressed an opinion favourable to this change. He did not plead for mercy or for compassion, he simply asked them to redress a wrong; and in moving his resolution, he appealed to them in the interests of fairness and equity to agree to it. He asked for nothing that would detract from the honour and the dignity of this Association, but he asked them to adopt a very slight, simple and fair measure of justice, which he thought would add to the dignity of the Association, and enhance its influence for good with their professional brethren throughout the world, with their patients, and with the great body of the general community.

Professor McNaughton Jones said
he had great pleasure in seconding the amendment, and in doing so not as an abstainer, but as a non-abstainer. He might say that Dr. Norman Kerr communicated with him last year in Cork on this subject, and he recognised the difficulties in the way of this change, which difficulties embraced the only objection which could be raised to this proposition. He conceived that no member of the Association could deny that it was a mere matter of justice that no one should be compelled to pay for that which he had no intention to consume; nor did he conceive it to be right that men who did not intend to partake of certain refreshments at the annual dinner should provide for those who did. The only difficulty would be with the local reception committee, and more particularly with the section of them that had the control of the dinner. He, however, had carefully gone into the matter, and was satisfied that there was no real difficulty even in this respect. Hence he had great pleasure in seconding Dr. Kerr’s proposal as a mere matter and principle of justice.

Dr. Stewart, of Clifton, seconded this amendment, and distinctly denied that it would lessen the sociability of Thursday’s meeting, as had been predicted by the first speaker (Mr. Barrow). Such a reproach temperance men did not deserve, and it was wholly unjust. This system prevailed at their Bath and Bristol branches, and he defied them to find more happy gatherings anywhere, and certainly they were never asked there to contribute to the potations of those around them. It was not a matter of temptation or the reverse, but a matter of equity. He was sure this meeting would pass so just a resolution by a large majority. So far from its being a difficulty with the local committee, he believed they would hail it with satisfaction.

Dr. Kerr said he was quite prepared to leave the whole matter, and especially the particular mode of carrying it out, to the committee, in whom and in whose president he had perfect confidence. Their sense of justice and fairness would ensure the accomplishment of his object. Hitherto they had had no power in the matter. His amendment might be considered as a strong recommendation to the committee of council.

Dr. Ridge (Enfield) said he would only remark that it was proposed now to adopt in this general meeting of the Association a practice which was very frequent in the various branches in different parts of the country, and as no difficulty whatever, he believed, had ever arisen at those meetings, on what ground could it now be supposed that it was likely to cause any difficulty with the parent body? Personally he could not conscientiously take part in any dinner at which he should have to provide or pay for intoxicating liquors.

Dr. Bacon (Cambridge) assuming that it was supposed that Dr. Kerr considered the local committee were not acting in a just manner, denied this supposed allegation.

Mr. Watkin Williams, of Birmingham, said that of late a feeling against the old system had been rising—not quite a total abstinence feeling, but that many did not take anything
like the quantity which was formerly consumed, and the guinea, in reality, was supposed to pay for the three-bottle men. A great many took but very little, and on every ground it was unreasonable that the old system should be maintained. Dr. Kerr did not intend his resolution to apply to this meeting, but to be an instruction to the Council for future meetings. Everything must have a beginning, and if the resolution were carried the Council would only have to do what was already being done throughout the country. Let there be tickets for wine, and those who liked take as much as they pleased and—pay for it.

Dr. B. Foster, of Birmingham, and Dr. Oakley, of Halifax, supported Dr. Kerr.

Dr. Alfred Carpenter approved of Dr. Kerr’s proposal, and suggested that the amendment should be withdrawn, the original regulations be passed, and then that Dr. Kerr should move his resolution as a substantive motion. If this was carried, as he presumed from the feeling expressed by the meeting it would be, the responsibility would then fall on the Committee of Council, who, if they failed to carry out the instruction he doubted not would now be given, could be called to account at the ensuing annual general meeting.

Dr. Hadden said, if there was any resolution which prevented some of their brethren uniting with them, let them rescind that resolution. What was right in the branches could not be wrong in the parent society.

Dr. Norman Kerr then moved the resolution as follows:—“That in the opinion of this meeting the price of the dinner-ticket should not include a charge for wine, and the Committee and Council are requested to arrange for this in future.”

This having been formally seconded by Professor McNaughton Jones, was carried unanimously amidst cheers.

INSANITY AND INTEMPERANCE.

On Wednesday 11th August, the discussion of the influence of alcohol in the causation of insanity was opened in the Psychological Section by Dr. G. M. Bacon, M.A., superintendent of the Cambridgeshire County Asylum. Dr. H. B. Sutherland read a paper on “Cases of Alcoholic Insanity in Private Practice,” and Dr. Beach followed with a paper on the “Intemperance of Parents a Predisposing Cause of Imbecility in Children.” Two of these papers are given in full in our present issue under their respective headings. The other will appear in our next publication.

The debate on this subject, which extended over two sittings of the Section, was opened by Dr. Hack Tuke, who said it was only by such careful examinations as had been put forth in the papers that they could arrive at the truth. He came to the conclusion that there were 12 or 13 per cent. of cases of insanity due to drink. The superintendent at Bodmin Asylum told him there was about 5 per cent. only, and he connected it with the extremely sober habits of the population of Cornwall. In Birmingham there was a different set of habits, which accounted for the marked difference between that town and the county of Cornwall. He entirely disclaimed any such statement as that 50 per cent. of insanity was due to intemperance, but at the same time he would be prepared to expect that a very considerable number of the insane in our asylums owed their condition to intemperate habits. There was every reason to suppose that drink would produce insanity in some considerable number of cases, and it was only by such an analysis as had been made in the papers read to-day that they would ever arrive at the true proportion. Dr. Dagonet, of Paris, said that out of a large number of cases that he inquired into, in 300 drink was the cause of insanity. M. Lunier, one of the Inspectors of Lunacy in Paris, had also published statistics, which showed that insanity was less rife when the natural wines of the country were drunk than when they gave place to stronger liquors.

Dr. Shuttleworth (speaking of
The Royal Albert Asylum at Manchester) said that they could only make out that there were 16 per cent. of the patients who were certainly intemperate, and who were the progenitors of idiot children amongst 300 cases which he examined, and that there were only nineteen in which parental intemperance could be said to be the direct or only ascertained cause. That made about 5 per cent. to place against the 31 per cent. of Dr. Beach's paper. It was necessary to inquire why this great difference should exist. In the first place, the patients in his (Dr. Beach's) asylum belonged to the pauper class of the Metropolitan district, amongst whom drink was more common than the classes above them. The parents, too, were very apt to assign drunkenness as a cause, and when no other cause was obvious, they rather rushed to that conclusion. His cases were not congenital or epileptic, and, in fact, he was not able to add materially to the percentage of intemperance before stated from facts he had been able to trace. With regard to the American statistics, they were rightly considered as exaggerated, and it was the statistics from America that were commonly quoted. He examined carefully the origin of the tables on which those statistics were based, and he was justified in saying that it was unfair to attribute so large, or nearly so large, a percentage to intemperance alone. More recent statistics from America seem to have been collected with greater care. Out of 100 cases in which the family history had been traced as far as the grandparents, thirty-eight had furnished the records of a drunken ancestry. He thought it very necessary to trace the habits back for two generations.

Dr. James Edmunds (London) said they were much indebted to the authors of the papers for the valuable data, and the very reasonable conclusions which had been based upon those data. He thought it ought to be clearly understood that amongst those who were total abstainers there were two distinct sections—one that abstained from alcohol from a religious standpoint, and that believed that the taking of a glass of wine was always a sin, and that might be termed "the moral enthusiast section"; and the other the men who, after carefully looking into the facts, came to the conclusion that they could work better, and live longer, and be happier without alcohol than with it, and the position of such a class was entirely justified in view of the large amount of sickness and misery which grew out of the ordinary use of alcoholic beverages. It was this last section with which alone he had any sympathy, and for the arguments and wild statements advanced by mere enthusiasts he was not responsible. Nothing could be more difficult than any attempt to disentangle the facts connected with our drinking habits and the existence of insanity. Insanity seemed to come out as the result of two directly opposite conditions of life, the one condition which existed among the Society of Friends, in which the weaker members were taken so much care of that they survived to reproduce weakly and neurotic members, who might be said almost in the next generation to go on adulterating the natural stock, and out of such a condition a large number of insane persons would necessarily occur, inasmuch as under ruder conditions of life they would have been killed out in the struggle for existence. Thus it was that among the Society of Friends, where intemperance was singularly uncommon, there was so large a proportion of insanity. On the other hand, in a place like Birmingham, where human beings grew up as if they were tagged to a machine, and where the mothers left their children to be nursed in crèches, at a penny or so per diem—these children grew up with stunted and imperfect constitutions, and among them a large number of insane cases would be developed. Now, in the conditions which existed at Birmingham, the temptations to drink were also very great, and therefore insanity became associated with drink, although drink was really rather a premonitory symptom and mental
weakness than a direct cause of mental degradation. In Cornwall, again, where only 3½ per cent. of insanity was set down to drunkenness, they had a hardworking and hardy community, who died by violence rather than by slow decay, and who had over two or three generations been completely permeated by the religious influences of Methodism, and of whom a large number were total abstainers. Without attempting to disentangle the exact relationship of drunkenness and insanity as cause and effect in these various communities, there were some things on which everyone present would be agreed. Firstly, they knew that men of strong constitution, and fairly organised all round, drank considerably and continuously to an advanced age without apparent injury; but, in point of fact, they underwent a slow degeneration of tissues, and they certainly did accumulate masses of spongy tissue about them, which had been referred to by Dr. Browne as indicating not the highest type of human development. And when alcohol was taken in somewhat large quantity they knew, first, that it produced disease of the liver as the organ through which the alcohol first soaked in entering the circulation; secondly, that it produced disease of the kidneys and of the other excretory organs; thirdly, that it produced general degeneration of tissue, such as atheroma and fatty change in the blood-vessels and other vessels. Out of these conditions come rupture of the blood-vessels, clotting in the arteries, and, as a direct consequence, paralysis, apoplexy, and other neuroses. They also knew that in acuter forms of alcoholic poisoning they could trace epilepsy in consequence of urea accumulating in the blood. Then they had the fact stated by Dr. Tuke that in the Friends' Retreat at York he had almost never seen a case of general paralysis, and that the effects of drinking were extremely rare in the patients sent to that institution. Now it was reasonable to suppose that where the brain tissue itself was much exposed to causes which produced degeneration, that alcohol, which in the rest of the body was known to be so powerful a degrading agent, would also produce lesions, out of which would come purely mental defects analogous to those which produced the phenomena of paralysis, disease of the kidney, disease of the heart, and disease of the blood-vessels; and in this way he was distinctly of opinion that the influence of alcohol brought about those cases which Dr. Crichton Browne had described as neurotic into the circle of crazy or insane cases. It would be interesting to have statistics from those gentlemen whose practice lay in idiot asylums as to whether idiocy seemed to be largely connected with the free use of alcoholic beverages by the mother during the period of gestation, delivery, and nursing. It was well known that in some parts of the country women were in the habit of making themselves drunk with alcohol at the time of delivery, and the question whether the use of chloroform damaged the infant brain was also one worthy of consideration.

Dr. Seaton said he had been thirty-six years engaged in the practice of lunacy, but his experience was entirely confined to private patients. He had been hoping that some one would tell him how the use of alcoholic drinks was able to produce insanity, because he had never yet found any reasonable ground assigned for it. He had met with many cases where drunkenness was associated with insanity, but he had no hesitation in saying that he never met with a case in his life (where he was able to trace the history of the patient) where he was not able to detect the existence of insanity before the drunkenness, and that it was the drunkenness which made the insanity known to the public. If the patient had been kept from stimulants, perhaps the public would not have known of the insanity, although the relatives would. At the same time he acknowledged having many a time lent himself to the assertion of drunkenness as a cause of insanity. It was convenient in good society to be able
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to assign a special reason why they should be insane that should not be prejudicial to the relatives. He had been thinking over the cases of general paralysis, and could not find where there was the slightest pretence of suggesting that intoxicants were in any way the cause. The temperance men in waging their holy war had seemed to feel that in the matter of lunacy statistics, as in other things, they were perfectly justified in using any materials or weapons they could lay hands on, and he supposed it was in this way that intoxicants had been assigned as a cause of insanity.

Dr. Langdon Down said that the influence of intemperance upon insanity was a very important question, and surrounded with difficulty in any attempt to arrive at the exact truth. The discrepancy between the statistics of Dr. Shuttleworth and of Dr. Beach was probably due to each of them pursuing their researches in different grades of society. He thought Dr. Beach’s statistics defective in the method of classification adopted. There was a class of cases where children were born with a proclivity to mental breakdown, which commonly occurred at first dentition, second dentition, and puberty. About 15 per cent at Earlswood seemed to be a fair charge to make to the factor of intemperance. In another institution, in which he had seen 250 patients, intemperance could not be placed as a factor in more than 2 per cent. of the cases. Thus, taking the middle stratum, the percentage was 15 per cent., and in the higher class only 2 per cent., whereas Dr. Fletcher Beach came to a class where intemperance was a general habit, and there he got an amount of intemperance due to insanity which made it an important factor. There was no doubt that idiocy was the product of intemperance. He had known four children where parental intemperance was most distinctly the cause of their idiocy. He had found also that there was a kind of idiocy which was the outcome of acute intemperance at the time of procreation. He had no doubt that procreation under the influence of intemperance was a strong cause of idiocy.

Dr. Harrington Tuke said, we were very liable to fall into the mistake of generalising upon this question. We must consider. Is not drunkenness a cause of destitution, of severe moral and physical suffering, and are not these the factors that make up insanity? He confessed that in the upper classes, during a long experience, he had met with very few cases which he could trace absolutely to the use of intoxicating liquors. When met with, these cases recovered very rapidly. With the lower classes, where intoxication was followed by absolute ruin, there was another factor which ought not to be omitted. Until they could show the pathological changes in the brain as they could in the liver, they should be careful what they put forth. Then a new field of inquiry would be in the various countries where different forms of drink were consumed, and the relations of insanity thereto. General paralysis should be taken out of the diseases caused by alcohol. He never saw such a case in the upper classes caused by excessive drinking. He did not think intoxication merely as a form of poisoning could be taken as a cause of insanity.

Dr. Ridge thought that Lord Shaftesbury, and those gentlemen who had made statements similar to his about the relation of intemperance to insanity, had been somewhat misrepresented. They did not mean to say that alcohol alone had been the pure cause of the disease, but that, directly or indirectly, it acted so as to bring the result about, and that it was a cause which above all others was preventable. It was a cause entirely outside the human system, and which could be wholly got rid of, and therefore one which they might well devote their energies to put an end to.

Dr. Brushfield pointed out how extreme were the statements on either side. Alcohol was denied by some medical men as a factor in the production of insanity, and described as a powerful cause of it by others. Dr. Seaton said that no case of insanity
was produced by intemperance, but his (Dr. Brushfield’s) experience was totally against that.

Dr. Bateman drew attention to the statistics of Dr. Curling, of America, and his conclusions were diametrically opposed to those of Dr. Seaton. Having gone very carefully into the causation of this disease in one hundred cases, he had traced thirty-two, either directly or indirectly, to be due to the intemperance of the parents.

Dr. Eastwood (Darlington) said he had come to the conclusion that Lord Shaftesbury’s popularly adopted statement was highly exaggerated, that 50 per cent. of the insanity was caused by intemperance. At the same time he could not confirm the statement of Dr. Seaton, for if alcohol would produce one form of nervous disease why should it not produce another? They could not shut out alcohol as a cause in the production of insanity. With regard to general paralysis, his own experience was that it was not produced by alcohol, or very rarely indeed. There were some cases in which insanity could only be attributed to intemperance.

Dr. Turnbull said he had seen a good many imbecile children without being able in one instance to detect that they were the children of intemperate parents.

Dr. J. Crichton Browne (President of the Section) remarked that this discussion had been conducted with great temperance and forbearance on a subject that sometimes excited a good deal of feeling. This was a most momentous and a most important question, and none could shut their eyes to the evils that drunkenness was creating in the community. The papers read were honest and genuine endeavours to arrive at the actual facts. Now the profession could not lend itself to extreme statements on the one side or on the other. They could not, for example, adopt the statement of Dr. Seaton, nor could they that which Dr. Mortimer Granville published sometime ago in the Lancet, to the effect that alcohol could not produce any nervous disease. Now they had three kinds of actions on the part of alcohol to remember, its direct action upon the nervous system, its contributory action, and its remote action. In its direct action he must include all its immediate toxic effects. It undoubtedly acted upon the nervous system. Let any man or woman, however robust in health, be saturated with alcohol sufficiently long, and he would pledge his professional reputation that he or she would fall into delirium tremens. Go on with this and there would be produced mania. Produce delirium tremens again and again, and the effect instead of being transient would be continuous. They would get a condition of continuous excitement and irritation of the brain. If that condition were produced frequently, they would have developed monomania, and a painful and lasting symptom of suspicion. If the saturation were again carried on they would get alcoholic wasting of the brain and loss of power in all the mental faculties, with other symptoms. Then there was still further produced alcoholic dementia. That these were the direct effects of alcohol, taken as described, there could be no mistake. But beyond the direct effects there were contributory effects. Where alcohol had not produced delirium tremens if there was a predisposition to disease of the nervous system, this might break down and melancholia be the result. Alcohol was not largely responsible for the morbid results, but it was an important factor, and the result would not have occurred if the alcohol had not been there. It would not do to say that these cases were not due to the alcohol, for they were. In the first case alcohol was the full and complete cause, in the second it was the contributory cause, and in the third it was the indirect cause. If a man got drunk, knocked his neighbour down, and produced a condition of the brain leading to mental disorder, surely alcohol had something to do with the cause. If a man who ought to spend his wages upon his home spent them on drink and left things in such a state that melancholia was produced in the wife, surely alcohol must be
credited with some share of the blame. Alcohol was at work doing evil in a variety of ways that could not be reduced to actual statistics. He did not think that men who had made these statements about insanity and intemperance were such tyros as not to know about these things. Personally he was inclined to adopt the statistics of the Commissioners in Lunacy notwithstanding all the discredit that had been thrown upon them. Let his hearers bear in mind that there were 30 per cent. of the cases in which no cause at all was known, and in a certain number of them alcohol was sure to have been a factor. He had conducted two investigations as to the relationship of intemperance to insanity. One, many years ago, was conducted at the request of the late Archdeacon Sandford, when he went over 500 cases, watching every one of them himself, and making the statistics as carefully as he could possibly make them, and he arrived at the conclusion that the direct and contributary relations of alcohol to intemperance was represented by 15 per cent. He sent these statistics to Archdeacon Sandford, but he did not think they exactly suited him, for he entirely ignored them. At a later period he went over the same ground again, and was satisfied of his original correctness when he brought out the same result—15 per cent. Destitution was a cause of insanity; and that destitution, itself produced very often by intemperance, ought to be brought before the medical profession as a speciality. In two reports of asylums that had come before him this year, he had noticed the statement that drunkenness and alcoholic poisoning always increased throughout periods of prosperity. That was simply the reverse of the truth, and any man who made a statement of that kind had not gone into the question. In the years 1871 to 1873, the years of great commercial prosperity and very high wages, the deaths from every kind of alcoholic poisoning went steadily down. In those years the deaths from delirium tremens were 2,200, and in the three following years of distress and low wages they went up to 3,300, showing that the period of high wages was not the period of drunkenness, but that when men were out of work, with time on their hands, they flew to alcohol for relief. At the same time they owed certain benefits to alcohol. There was no doubt that a dose of it occasionally saved a man from an attack of insanity. It tided him over periods of sorrow, distress, or anxiety, when, but for its timely aid, he might have broken down. They had yet to learn the effects of alcohol upon the highest class of nerves.

Mr. G. W. Mould (Cheadle) said that in Manchester they had a large number of cases of general paralysis apparently attributable directly to alcoholic excess in both men and women. At Cheadle he had five distinct cases of general paralysis, and it was rarely they didn't admit two a year. He urged that they should seek enlarged powers under the Habitual Drunkards Act.

Dr. Martin said we heard yesterday of the high moral condition of Cornwall, where, according to Dr. Edmunds, teetotalism was more prevalent than in any other part of the country. He would contrast that with the county of Durham, where he believed that, owing to the large wages the miners and the iron-workers received, they had as a direct consequence the largest amount of drunkenness and brutality to be found in this country. He was not surprised to find, then, that the insanity caused by intemperance was 3'5 in Cornwall and 29'2 in Durham, the highest percentage in this country with the exception of Norwich. His reminiscences of Norwich were that it was the most drink-ridden place he ever visited, so that he should expect a large amount of insanity to be caused by intemperance there.

The Chairman said that although the percentage of insanity due to drunkenness was so low in Cornwall, the general percentage of insanity was only slightly less there. When you removed alcohol, apparently another kind of intoxicant took its place—religious excitement.
Dr. Stewart pointed out that these statistics did not deal with the whole question. He objected to the word dipsomania, which was not applicable to the class to whom it was commonly applied.

Dr. Chevallier said he had not the same faith in statistics that was professed by many persons. It was difficult to say which came first, the intemperance or the insanity. The relieving officer should not determine the cause of insanity, but this ought to be left to the medical officer if we were to have reliable statistics. His experience was directly contrary to that of Dr. Seaton.

Dr. Bacon, in replying, said that his views had not been invalidated by the discussion which had taken place upon his paper. Dr. Ridge seemed to think the insanity due to drunkenness was wholly preventable, and ought to be stamped out. He quite agreed with him in the desire, but while human nature remained as it is, drunkenness was not more preventable than anything else. The only lesson they derived from all that had taken place was that they ought to be more careful of the way in which they presented statements to the public. All they wanted was truth, whichever way it came out, and he could only trust that conscientious research would make the statistics of the future more reliable than those of the past.

Dr. Sutherland also replied, and expressed his astonishment that Dr. Seaton could make the statement he had done in the face of the tables published by the Commissioners in Lunacy.

Dr. Beach also replied, and the Section then proceeded to the consideration of the other business upon its agenda.

ALCOHOL AND THE DEATH-RATE.

Dr. Norman Kerr, F.L.S., read a paper, in the Public Medicine Section,—Dr. Acland, F.R.S., presiding,—on “The Influence of Excess in Alcohol on the Death-rate.” He said he had been engaged for some years in collating the records of the mortality from alcohol in his own and several medical friends’ practices, and had presented the results of his inquiries to various learned bodies without, unhappily, any attempt on their part to impugn the accuracy of his estimate. He could not, after exhausting every effort to arrive at an approach to the truth, and after making deductions far beyond what the circumstances seemed to warrant, compute the total annual mortality from alcoholic excess at less than 120,000. Of this startling tale of preventable mortality, 79,500 persons met their fate from starvation, disease, accident, or violence arising from the indulgence of others, while the remaining 40,500 fell a prey to personal excess. It was of the latter direct mortality from personal drinking habits that, in a purely medical society, the present paper treated. Whether drinking far short of drunkenness added largely to the number of deaths in the country, Dr. Kerr did not then stop to consider. The scope of his theme extended no further than personal intemperance.

Other inquirers, since Dr. Kerr’s estimate had been propounded, had ventured into the field, and these had computed the alcoholic fatality to be higher than he had felt warranted in doing. Dr. Morton, from the counterfoils of himself and nineteen medical friends, held that the annual deaths from personal intemperance in England and Wales were 39,287. This was equal to nearly 53,000 for the whole kingdom, though these returns included little more than half their due proportion of deaths in workhouses, and no deaths at all in hospitals and asylums. Dr. G. B. Longstaff, from an analysis of the Registrar-General’s returns, could not put the alcoholic deaths lower than 30,000 or higher than 60,000. Dr. B. W. Richardson, so deservedly high an authority on hygiene, believed that the mortality from personal intemperance in England and Wales was 50,000 yearly, equivalent to more than 68,000 over Great Britain and Ireland. Dr. Lankester’s estimate was a tenth of the whole, or 62,000. Dr. Hardwicke, coroner for
Middlesex, thought the real loss greater still. Dr. Kerr's estimate of 40,500 annual deaths from personal intemperance in alcohol was thus below that of others, and it was also considerably less than the result indicated by the returns, thus far, of the Har-velian Society, in their full investiga-
tion. Dr. Farr, himself, had conceded, at Cheltenham, after a prolonged dis-
sussion on a paper by Dr. Kerr, that the annual mortality from alcohol might amount to from 30,000 to 40,000; and a host of coroners, medical officers of health and experi-
enced practitioners, had testified to the moderation of Dr. Kerr's estimate.

The marked influence exercised by alcohol on the death-rate was strikingly exemplified in the mortality in the city of Glasgow, consequent on the reduction of the duties on ardent spirits. The reduction of these duties increased the deaths there from 3,690 in 1822, to 4,027 in 1823, and to 4,670 in 1824. The Registrar-General's return showed that in every class of dis-
 ease save one there had been a steady increase in the number of deaths; but in Class III., or Local Diseases, there had been a steady increase up till the year 1876, when the consumption of alcohol began to fall off. Precisely in those diseases (such as of the brain, heart, lungs, liver, and kidneys) in which alcoholic excess told so heavily, did this increase take place. It was a significant fact, pointed out by the eminent statistician, Dr. Farr, in his annual letter to the Registrar-General in 1877, that gout was then twice as fatal as it had been fifteen years pre-
viously. How suggestive was the con-
trast between the proportion of violent deaths in England and Italy! In the former country, where there was so much insobriety, the deaths from vio-
 lence amounted to 775 per 1,000,000. In the latter country, which was pre-
 eminent for its sobriety, these deaths were only as 240 per 1,000,000.

It was well known to medical men that the certificates of death compiled by the Registrar-General were no index of the true influence of alcoholic excess in the causation of death. They had the highest governmental autho-
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improper position of publishing to the world the faults and the frailties of the dead.

CONTROL OF HABITUAL DRUNKARDS.

At the concluding general meeting, held at the Senate House, on Friday, 13th August, under the presidency of Professor Humphry, the question of habitual drunkards and their treatment was discussed at some length.

Dr. Carpenter, the chairman of the Committee for promoting legislative restriction for habitual drunkards, read the following report of that committee, signed by himself, and Messrs. S. S. Alford, T. F. Blandford, C. Holthouse, J. Gray, and E. H. Vinen:

"Your committee are unable to report any definite progress in the measures for restricting habitual drunkards. The Act which was passed last year affirms a principle and establishes a machinery by means of which it can be put into operation; but the liberty of the subject is so hedged round with conditions which impede the application of the Act to individual cases, that your committee are afraid it will greatly hinder its operations, whilst the bad times have prevented voluntary and charitable contributions towards a scheme which may satisfy the requirements of the Act, and yet meet with the approval of the patients themselves. Two private retreats are licensed under the new Act.

"On January 8th, your committee held a conference with the committee of the Society for Promoting Legislation for the Control and Cure of Habitual Drunkards, as the best course to be followed to give practical effect to the Act of last Session, when the following resolutions were passed:

"‘That, in the opinion of the joint-committee, an effort should be made to establish an institute for the purpose of treating inebriates according to the provisions contained in the Habitual Drunkards Act, 1879.’

"‘That the proposed institution be established by aid of voluntary contributions, and afterwards supported by payments from the patients.’

"‘That the name of the institution be the ‘Dalrymple Retreat for the Treatment of Inebriates under the Habitual Drunkards Act, 1879.’"

"‘That the following gentlemen be a sub-committee to carry the foregoing resolutions into effect:—Dr. A. Carpenter, Mr. C. A. Govett, Dr. N. Kerr, and Mr. S. S. Alford, with power to add to their number.’

"Dr. Cameron, M.P., has since been added to this committee. Mr. S. S. Alford is acting as honorary secretary; all communications can be sent to him at 61, Haverstock Hill, N.W., London.

"About £800 is already promised towards the Dalrymple Retreat for Inebriates. It is hoped that an institution for the working and lower middle classes, when once started, may, by sufficient but small payments, be made self-supporting; especially as the Managing Committee will be strictly honorary; but the sub-committee do not feel justified in opening a Retreat until £3,000 is promised to start it and ensure its action for two years. The recent elections and bad times have been a serious obstacle to obtaining funds.

"Your committee, under these circumstances, ask for re-appointment.”

Dr. Carpenter, in moving that the report be received and adopted, and the Committee re-appointed, said that the only thing gained by the Act of Parliament was the Parliamentary recognition of the principle for which the Association had been so long striving, for what Parliament had given with one hand it had taken away with the other. It was possible that the Committee might, as they suggested in the report, obtain the funds to establish a “home” for inebriates, and some result would follow; but not the extensive results which they had in bygone times looked for.

Dr. Morgan seconded the motion, and said that the Legislature would see that more power was needed than was given at present.
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Dr. Fitzpatrick (Liverpool) did not see why the profession should be called upon to assist in making abortive legislation practical, and he ridiculed the idea of the profession raising £2,000 to deal with the inebriates of the country.

Mr. S. S. Alford (London) explained that the only purpose of the Committee was to aid in the establishment of a home for inebriates, and not to deal with "the inebriates of the country." If a home were established and worked with the end of restoring to usefulness and to society the victims of this terrible vice, the practical character of the work would be seen. Magistrates would then be brought to assist the work by offering persons who were brought before them charged with frequent drunkenness with the choice of spending a time in an inebriate home or in prison. The late Parliament, which had given this imperfect piece of legislation, was in unlawful connection with the sale of drink; but the measure could be made to work. The sum of £2,000 was not expected from the profession, though something would be got towards it in the profession, and the effort would be followed by others throughout the country.

The report was adopted, and the Committee reappointed.

Dr. Joseph Rogers (London) proposed a resolution on the report:

"That the support of the Association be requested, with the view of obtaining from the Legislature some provision whereby habitual drunkards who become chargeable to the rates should be placed under such restraint as may lead to their being reclaimed."

The mover spoke from his experience, as having been the medical officer of two workhouses, and as having come face to face, as such, with a very large amount of drunkenness. He spoke of the class of people who were "in and out" of the workhouse, being brought in when their drunken habits had incapacitated them from remaining in the ranks of life; and then, when they were better, they discharged themselves, only to return after a time as bad as ever. Some of these people had continued this course for more than twenty years, and the guardians had no power to restrain them or to detain them; but as the ratepayers had to pay for the support of those persons who brought themselves into this condition, the power should be given to those who had to support them to restrain them from injuring themselves.

Mr. Wickham Barnes (London) seconded the motion.

Mr. S. S. Alford supported the motion.

Dr. Royle (Manchester) supported the motion, and hoped that the Committee would set their wits to work for suggestions whereby the present evils would be remedied.

The resolution was carried unanimously.

Dr. A. Carpenter moved that Dr. Joseph Rogers be added to the Habitual Drunkards Committee.

This was seconded and adopted.

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THE NATIONAL TEMPERANCE LEAGUE'S MEDICAL BREAKFAST.

For eleven years past the National Temperance League has taken advantage of the annual gatherings of the British Medical Association in the various English towns to which they have resorted to invite the members to breakfast, and subsequently to a conference on the question of the responsibility of the profession in regard to the temperance movement. At nearly all these gatherings Mr. Samuel Bowly has presided, and on Thursday morning, 12th August, at Cambridge, he was found in his seventy-ninth year.
performing the same hospitable office. Provision had been made for 150 medical gentlemen, and it was expected that 130 or 140 would have attended, but the actual number reached 200, being a larger attendance than has been experienced on former occasions of the kind, and in itself an indication of the progress of temperance thought and opinion amongst the members of the profession.

After breakfast Mr. Bowly, who presided, observed that it was unnecessary for him to say how very heartily he welcomed the members of the British Medical Association upon this occasion. He had been a worker in the temperance cause for forty-five years, and when he thought of how the question was received in the early days he was deeply thankful to be surrounded by such an influential gathering as had assembled this morning. What the medical aspect of this question would ultimately become they were quite prepared to leave in the hands of the profession. They did not pretend to dictate to men of science what was the exact measure of alcohol that should be used in medicine, but they took this up as a social question, and as one of the most important of the day. It was unreasonable to expect that the great masses of the people, with their want of education and refinement, would give up drinking if they were not supported by the influence and example of educated and scientific people. Therefore he was exceedingly anxious to win the sympathy of the influential body of gentlemen he saw before him, and to them he appealed, not so much in their capacity of medical practitioners as in that of persons having the entrée into society. He was quite sure that if they could get the sympathy of the leaders of society they could get rid of the public-houses, and then they would not be long in getting an Act of Parliament to put down what remained, because public opinion would then support it. That public opinion they were endeavouring to create, but it was created by atoms. He believed these meetings had now been continued for eleven years, and he could see a growth of opinion amongst gentlemen who were kind enough to come here, and he saw in them a powerful influence to operate upon society at large.

Mr. William Fowler, M.P. for Cambridge, said he felt that he could not contribute much to the deliberations of the meeting, because he was not a doctor. He was not a scientific man in the strict sense of the term, although he had always felt the deepest interest in scientific questions. He believed the questions under consideration this morning, briefly stated, were—How far can a man do without drink consistently with maintaining strong and vigorous health? and, Are these things necessary to the health of man? Now, he did not know that he should have accepted the invitation to be present this morning, were it not that he had had some experience in his own person on this matter, and he apprehended that experience in scientific questions was almost as valuable as theory, if not more so. Some years ago, for reasons that he need not enter upon now, he thought it best to give up intoxicating liquors as a beverage, though he freely confessed that he liked them very much. That made his testimony none the less valuable—perhaps a little more so. Now, since that time, generally, he had never taken them except under the doctor’s orders, and it was a very nice question how far the doctors had been right. He had not implicit faith in the profession, because they differed so much amongst themselves. He recollected talking to Dr. Andrew Clark about it—and he supposed there could hardly be a higher authority—and he said, “If you take a few glasses of claret a day, or even a small bottle of champagne, it won’t kill you nor do you any harm that I know of, but I do not think it will do you much good.” He went on to say: A friend of mine amused me very much. He was a clergyman, and got very tired on Sunday evening, and asked the doctor whether he had not better take a glass of wine to put him
right. No, by no means, was the reply; go to bed. Now he thought that very good advice, but he did not come there to dogmatise, for it was a most dangerous thing to do so. He should be the last man to say he did not believe that there were occasions in every man's life, certainly in many men's lives, where the taking of a moderate amount of alcohol might be useful as a matter of hygiene. Very high authorities said so, and very high authorities said the reverse. He could not give a definite opinion in his own case, nor could he say that they had ever done him important good. He had known the time when he thought perhaps they were doing him a little good, but when he came to leave them off he did not find much difference, so that really his testimony was a very doubtful one, excepting on this point—that when a man was in fairly good health he was quite sure he was as strong and as well without. Well, if that were so, and he didn't doubt it for a moment after his own personal experience, then they had removed one obstacle out of the progress of temperance. He was old enough to recollect that everybody thought it a matter of course that they should have these things, and that they could not live healthily without them, but that delusion was dissipated, and they no longer thought so because they knew it was not so. But the real difficulty in the way of abstinence was that we liked these things, and that we thought we could not be companionable without them. People said, "Oh! dear me, how dull it is without this champagne." Now, he admitted that sometimes he felt he was not quite so lively without the champagne as he was with it, but still, some of the Wittiest and the best men he knew did without it, and a man must really be dull if he could not be lively without it. He was quite sure that some of those who took a great deal were the dullest men in creation. Therefore he thought they should remove out of their way this great social difficulty, and he had always said that that was the greatest difficulty of all. But it was all a miserable delusion to suppose that drink was indispensable to good companionship. Once get into our mind that this thing was destroying our nation, destroying its vitality and power, and then surely we would be able to give up some slight personal gratification in order to do good to the great mass of our population. When he thought of the complicated society in which they lived, and when he dived a little below the surface, he must admit that one of the most trying things was the awful amount of social misery everywhere prevailing. No men knew it more than medical practitioners, moving as they did amongst all classes of the people—in the hovels of the poor as well as in the mansions of the rich. Those evils came partly from mental conditions and partly from bodily infirmities, but far more than all from the misery the people had brought upon themselves by their own evil habits. He thought we must all admit that even in our own lives the greatest of our troubles had come about by our own faults, or at least it was very often so. He did not speak of those sorrows that came upon us in the providence of God, which we could not help, but those conditions of unhappiness that resulted from our own mistakes and our own follies. And if we looked into a different sphere of society from that in which we mixed we knew that no miseries so great came upon people as those which resulted from those drinks which we too often regarded as necessary for good companionship. He believed the habit of taking too much intoxicating drink was causing more misery than every other habit that could be named. It was not so on the Continent at any rate, but in England it had long been so; and when he looked at it from the competition point of view, he could not help thinking of those £140,000,000 which went down the throats of his countrymen every year, and what good they would do and what a blessing they would be if they were saved to the nation. If the drink expenditure of the last quarter of a century had been saved, what an enormous mass
of wealth there would be in the country! And were we now as a people? We were going on in the same course, and we did not seem to get very much better. He doubted not his hearers were saying within themselves, "We want to discuss a scientific, not a temperance question." But still it was the sense of the great evil of the thing that led to the enthusiasm there was about it. He had merely come here to express his great sympathy with the scientific progress this question was making, and his conviction—strengthened by seeing so large an assemblage of medical men—that there was amongst the profession a growing belief that intoxicating liquors were not essential to the health of man. If this were so a decided obstacle was removed from the path of temperance reformers. He did not go so far as those who declared that "Every glass of wine a man took shortened his life." He thought that an exaggerated statement, and if alcohol were a slow poison, its action was very slow, not unlike that of tea, which some persons just as loudly condemned. So far as his information and experience went he did not believe intoxicating liquors necessary in health, or to sustain one under hard work. Many medical men were abstainers, and none worked harder than they. He only regretted that on this point they differed from one another so very much. He was greatly astonished at the consumption of alcoholic liquors that went on in our unions, and surely there must be some mistake in this matter. He hoped medical men would do their utmost to improve public opinion in this respect, as well as in others bearing upon temperance habits; for the people were always ready to lend them an attentive ear.

Dr. Denis O'Connor, of Cork (ex-President of the British Medical Association) said he had been called upon very unexpectedly to speak on a very important subject before medical men, who would expect that a person should well weigh his words before he gave utterance to them. From his appearance they might imagine that he belonged to the old school—a school before the use of alcoholic liquors came into such general use in medicine, the school that said of a patient, "If he has been in the habit of drinking before, allow him a glass of sherry and tell him the less he takes of it the better." He was sorry to think that in the medical profession there was a disposition to think that people long ago were fools, and they were rather doubtful whether they themselves were wiser, but they expected somebody would be in a few years to come, and that was the way he was afraid that these floods of evil had flowed in, viz., upon the suggestions of some medical men who, because they were brilliant, everybody thought ought to be followed, but who unfortunately became the worst enemies of mankind, for people almost of necessity adopted what they said. Within his time came this dreadful assertion that every disease was curable by alcohol, and he was pained, having to go through this ordeal, to witness what followed from these opinions, held by men who were comparatively young men. He was obliged to bow his head, and hope, and wait, and he had, thank God, lived to see better times; and he now appealed to every man here, that, although they would never give up alcohol any more than they would give up any other powerful drug, whether great reformation had not taken place in opinions amongst medical men, and the large attendance here this morning was the best proof of it. He sometimes heard people say that they couldn't cure disease unless they gave alcohol, and this was said of many diseases which, in his early days, medical men never dreamed of treating with alcohol. Were they not to remember that there was a moral side to their patient when they were trying to do good to his body—and should they not take care that they were not sending him back to his family with apparent bodily strength, but with a diseased and corrupted mind? It was most distressing at times to hear men say to him, "I was very well at such a time, but the doctor ordered me limited quantities of drink;" but they must
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remember that limited quantities to poor weak human nature liable to temptation were sometimes fatal and usually dangerous. Give a patient a nauseous drug and they might be sure he would not repeat it; but if they gave him something that was pleasant there was a time when the child would take a little, but when the full grown man would like his bottle of champagne. It was the same story still. Do not increase a man's difficulties by any means. He would not dictate to the profession, but he might tell them that he had now passed threescore and ten years, and that if he had not been careful in this matter of temperance he would probably not have been here to address them. He was temperate, always to an extreme of temperance. In his family he took about two glasses of claret a day, which were not necessary, but he took them lest his family should say he was committing suicide, and that was the positive fact. Let them all as medical men know the wonderful power they had, and be careful how they used it. He sat in council with himself every day of his life, and let people come in one after another to have his opinion, but in his unfortunate country alcoholic drink had got to be known by the name of "nourishment." Nothing could get it out of their heads that it was nourishment, and probably some doctors would suggest that it was a "blood-making wine." What a splendid phrase to deceive people. They thought that red wine was blood-making wine. That phrase had done much harm, and some doctors had used it; but he thought it would take a great deal of wine to make as much blood as a glassful of milk. How delightful was it for him to find this love of milk coming back. It had saved his life, and preserved him to a comfortable old age. Such was the result of the strictest temperance. He would advise the old people to be temperate in eating, but the young people might eat a great deal. The evils done by intemperance were partly known and partly not known. There were more people died of that than died of typhus fever, one of the curses of our country. He had said a great many of the evils of intemperance were known. There were some who died of delirium tremens, or, as a friend of his called it, "the usual thing." A young friend of his was absent from Cork for some time, and when he came back he asked, "What about John So-and-so?" "Oh, he's dead." "What did he die of?" "Oh, the usual thing." "What about James So-and-so?" "Oh, he's gone, poor man, he's gone." "What did he die of?" "Oh, the usual thing." A good many were known to die of the usual thing, but let him tell them that a great many were not known. A wife came and whispered to them that she did not like to hurt the character of her husband, but said, for some time past he was very fond of the brandy bottle. He took a great deal of drink, and never went to bed sober, although it was known to nobody. Every day the doctor had that whispered to him, the friends thinking it necessary for their own protection to tell the private history of the family. It was not drunkenness that was the test of too much drinking. The drinking was going on, damaging the liver, damaging the stomach, destroying the appetite, destroying the organisation, and ultimately produced death.

Professor Aikins, from Canada, said he could perhaps best occupy the time placed at his disposal by describing the state of affairs in the territory from which he came. Ontario at the present time, for fertility, intelligence, and wealth, was the backbone of the Dominion. All the liquor shops in Ontario were closed at seven o'clock on Saturday evening, and not allowed to be opened until Monday morning. The immediate result of this was the diminution in the arrests for drunkenness. If they could extend that shutting up of taverns from Monday morning to the whole of the week it would be immensely better. No tavern could be opened without a petition signed by so many hundred persons in favour of its being opened. They had also a Permissive Act, which was meant that if a majority
in a county were in favour of total prohibition they must call upon the superior authority of that county, and submit it to the vote; and provided there was a majority in favour of it, then total prohibition was put in force in that county. He was a stranger here for simply a few weeks, and was in the habit of riding about London on the tops of omnibuses, because from that position he saw most. He noticed women in taverns with little children in their arms, or by their sides; but you would travel from one end of Ontario to the other without ever seeing a woman going into a tavern. He did not remember to have seen a woman going to the bar of a tavern in Ontario. He was connected with the medical school in Toronto, and he mentioned this because of the discussion on Dr. Kerr’s resolution on Tuesday night; there were two medical schools, and they had their annual dinners, but there was no wine of any kind on the table. Some years ago it was somewhat of an effort to go to a public dinner where there was an abundance of wine on the table and take simply cold water; it was not an effort now. They could find the best in the land who would sit down at table even with the Princess Louise and take only water, and be all the better for it. He was utterly surprised to hear that there were liquors given to the people in the poorhouses here—people supported by the public funds. They never thought of such a thing in Canada. He was surgeon to a prison in Toronto, where they had 300 or 400 rascals incarcerated, and he never gave them a drop of alcoholic liquor except in some extreme cases in the hospital; but the idea of giving alcohol in prisons, workhouses, and eleemosynary institutions—that never entered their heads. Sir Garnet Wolseley, when he was in Canada, marched his troops some 400 miles through the wilds, his men sometimes up to their armpits in water, and enduring many hardships in order to reach the Red River, but there was not one drop of liquor served out, and there was not one case of sickness, save one man who suffered from dysentery. So that alcohol did not appear to be necessary even in the army in Canada. Now as to the medical men; he supposed that one-half of the mortality amongst them was due directly or indirectly to liquor. As regards elections, no gentleman who was seeking a position in Parliament was at liberty to treat. If that could be proved against him he lost his place, and sometimes lost his power to be a candidate for some eight years. The taverns in Canada were all closed on election days. No liquor was allowed to be sold outside taverns.

Dr. Gregory, of Bolton, said that he had been medical officer of health for eighteen townships, and one thing had struck him much—that in receiving the certificates of death, there was not one in twenty which correctly indicated the cause of disease. There ought to be an alteration in the law of registration, so that there should be some private mark to indicate whether or not the death had been wholly or partly produced by alcoholic liquors. He was satisfied that the English eat too much, particularly of animal food.

Dr. Thomas, of Rawdon, said it was now fifty years since he commenced practice. For twenty-five years he had been a drinker, and for twenty-five years an abstainer. He was now past three score years and ten, and never felt any physical weakness.

The Chairman said he had just been reminded that the President’s wife in America had banished intoxicating liquors entirely from her table. He attached great importance to these social movements, and heartily congratulated the medical men present on having decided to separate the wine-bill from the dinner-bill at their annual dinner. They could not overestimate the value of making an inroad upon those stupid old drinking customs which had so long prevailed.

Mr. Lund, F.R.C.S., Professor of Surgery in the Victoria University, Manchester, said he had watched this movement for years with an increasing conviction, and which really he must express to the abstainers before him, that they had all the accent on their
side. There was no doubt of it. If they looked at this matter from a scientific point of view, and if they were to attempt to show that alcohol was essential in many of the cases for which it had been employed, they must necessarily break down. The mistake which up to the present time the advocates of total abstinence had made was that they pushed their arguments too far. This was shown the other night in some of the arguments used by those who said they would not pay for the drink of other people. They didn’t sit down to take wine for the sake of being intoxicated, but those who took it knew that within a very limited range it was really nutritious, but was poisonous when they went beyond a certain point. Seeing, then, that alcohol might be taken in either nutritious or poisonous doses, there yet remained this consideration—that it was such a dangerous element to deal with, that, in many cases, it was far better not to touch it at all. Then came the great problem for medical men to see how far they could find a substitute, and how far other forms of food might take its place; and it was only by constantly day by day watching the habits of the people, and seeing, on the one hand the extreme danger of allowing them to run riot with this perilous element, and then inducing them to study the various questions connected with food, that they might lead them to think whether they might not in a large number of cases do without it altogether. In surgical cases, and even in cases where there was great collapse, the brandy-bottle was the first thing resorted to, even before the patient was brought to the hospital. He had seen men brought in who had been dosed with brandy on the occurrence of the accident, and dosed again on their arrival, so that the man would suffer for many hours, not from the collapse caused by his accident, but from the collapse caused by the alcohol, till it really became a point, when a man was admitted, whether his collapse might not be the effect of what he had already taken. They had found the administration of quinine injections and opium in many cases preferable to alcohol. No doubt if they were actuated by proper motives they would be able to recommend it much more largely than they had done in many cases, and there were those who thought they could do without it entirely. Milk had been spoken of as a good drink to substitute for alcohol, and a most excellent substitute it was. Alcohol would warm a man up very quickly, but in half-an-hour he was colder than he was before. But let him take half or a quarter of a pint of milk, and in ten minutes he was better, and would remain so for three or four hours. There was sustained power in milk, and not evanescent, as in the case of alcohol. In considering this matter, even from a medical point of view, they ought never to forget the magnitude of the evil and its universal diffusion through society. The increased size of this meeting showed that the profession felt deeply on this matter, and were willing to help the advocates of temperance all they possibly could.

Dr. Ridge said he wished to state, for the information of the Conference, that the Medical Temperance Association had been in existence four years, and numbered 240 members in Great Britain who practised total abstinence. Every member was perfectly free to use alcohol as a medicine if he felt so disposed—membership referring to personal practice alone. It was their opinion, as an Association, that the public were looking to them for some definite information on the subject, and that there were no means of giving it more decidedly than by their own personal habits. He would be happy to send or give any information that might be requested of him.

Dr. Norman Kerr proposed a vote of thanks to the National Temperance League, through Mr. Bowly, its president, for its efforts among medical men. Dr. Kerr went on to point out the position of influence the profession occupied, and the necessity that they should not be behind the wave of temperance that was now
passing over the land. If they did not rise equal to the occasion, depend upon it the profession would go down in public estimation. They must have an influence one way or the other; they could not help it, and if they treated alcoholic liquors as things that were innocent the result would be exceedingly injurious to medical men. One of the most encouraging signs of the times in regard to the profession was the passing of his resolution on the wine question at the annual dinner. It was the thin end of the wedge, and the day was not far distant when in this country there would be an indissoluble divorce between the medical profession and the whole of the social drinking system. When that was the case the medical profession would stand higher than it had ever stood before. If that position were not taken up, then the profession would go down lower and lower.

Dr. Eyton Jones (Wrexham) said he had attended several of these breakfasts, and felt extremely indebted to Mr. Bowly for the example he had set and the opportunity he had given to the profession at large to discuss the value or otherwise of intoxicating drinks. These meetings had had a large influence upon him personally, for in the conduct of an arduous practice he had given up alcoholic drinks, and felt far better on the total abstinence régime. He could recommend this course to any medical man, for though he might suffer probably in social life in some degree from the alteration in his habits, yet the opinion of society would rise gradually in his favour, and instead of being banned for being a total abstainer, he would be more respected and relied upon than even if he partook of stimulants. He was exceedingly pleased to hear yesterday Dr. Lauder Brunton’s testimony as to the value of Dr. Richardson’s researches regarding the effect of alcohol upon the nervous system. He believed thoroughly that if Dr. Richardson’s investigations were attended to they would have a new view of the action of stimulants, and instead of believing they were direct stimulants, as they had been taught, that they were indirect in their action, and therefore, but rarely in any degree so valuable as they had been represented to be. In conclusion Dr. Jones said he regarded Mr. Bowly as one who, more than any other in this country, had done good service in his day and generation, and to no other class of the community more than the medical profession.

The Chairman, in replying, said he could not express the pleasure this meeting had given him. How long his white hairs might be seen amongst them on these occasions he did not know, but as long as God gave him health and strength he did not know any better way in which he could use them to the welfare of his fellow-creatures and the glory of God than by labouring for the temperance cause. We had an individual responsibility. There was not a man who drank a glass of wine but thereby said that he was a believer in the use of it, whereas those who abstained were bearing their testimony against it. We did not live for ourselves, and we did not die to ourselves, for it was an important question on which side we would be—on the side of the safety and happiness of our country, or on the side of that which had ever been its ruin. Might God bless them all, and make them all a blessing to their day and generation.

The proceedings then closed.

A special Public Meeting, convened by the League, was held on the same evening in the Alexandra Hall, Cambridge. The chair was taken by Mr. Samuel Bowly, and addresses were given by eight medical abstainers:—Mr. S. S. Alford, F.R.C.S., London; Mr. R. Paramore, M.R.C.S., London; Dr. C. R. Drysdale, London; Dr. J. J. Ridge, Enfield; Dr. James Stewart, Clifton; Dr. John Thompson, J.P., Bideford; Dr. R. Martin, Manchester; and Dr. J. W. Sherly, London.
CASES OF ALCOHOLIC INSANITY IN PRIVATE PRACTICE.*

By Henry Sutherland, M.R.C.P., London; Lecturer on Insanity to the Westminster Hospital.

Intemperance and insanity is a well-known subject. I feel it, therefore, my duty, as one of the secretaries of this section, to explain to you, as briefly as possible, how it has come to pass that this point has been selected for your consideration and discussion. When I received the memorandum which informed me that one of the duties of the office I hold was to arrange some matter for debate, I immediately made out a list of those subjects which I believed to be at the present time most interesting and most attractive to psychologists. I forwarded copies of this list to the editors of the Journal of Mental Science and other distinguished members of the Association, and requested them to make choice of the subject which they considered most appropriate for discussion at this meeting. The selection of the subject, “The Influence of Alcohol in the Production of Insanity,” was, I may say, unanimous. I was also exceedingly fortunate in obtaining promises from Dr. Bacon, Dr. Fletcher Beach, and Dr. Shuttleworth, to support the discussion by papers or by speaking on it. As, however, in the first instance, there were no papers promised on this subject, it became incumbent upon me, as having suggested this point for discussion, to make a few remarks about it, and to endeavour from my own experience in private practice to throw some original light upon it.

I must confess that, in limine, I approached the subject with feelings strongly prejudiced. Some of my own connections, some of my most valued friends, are burdened with the responsibility of an intemperate relation. I hoped, therefore, to obtain a larger percentage of cases caused by alcohol than had been recorded by any previous observer, or be able at least to confirm the views and statistics of those who have believed that intemperance is one of the potent causes of insanity.

In this expectation I have been somewhat disappointed. For on carefully considering those cases, the histories of which were well known to me personally, and the premonitory symptoms of which have been carefully recorded in my case-books, I have been reluctantly forced to the conclusion that in a large proportion of cases, intemperance is not considered as an active cause, but merely as a premonitory symptom of insanity.

Naturally, in commencing an inquiry of this kind, it is necessary to turn to the works of others, and although I may be referring to points with which students of psychology are familiar, it is important, as a matter of comparison, to glance back briefly to the literature of the subject.

The two extremes of opinion with regard to the effects of intemperance in the causation of mental disease are found in the statements of Lord Shaftesbury and Dr. Bucknill. Lord Shaftesbury believed that, at least, 50 per cent. of cases of insanity resulted from the abuse of alcohol. Dr. Bucknill, flying to the other extreme, has expressed an opinion that an attack of insanity might, in many cases, be ward off by a judicious draught of the cup which cheers and which also inebriates. Lord Shaftesbury produced no statistics to support his theory of the baneful effects of alcohol as a cause of mental disease. Neither did Dr. Bucknill, so far as I am aware, inform us as to the number of cases he had met with in which alcohol had acted as a prophylactic remedy.

Passing onwards to more moderate
Cases of Alcoholic Insanity in Private Practice.

opinions and more reliable statements, and to those moreover supported by facts and statistics, we find that Dr. Poole has estimated the number of cases of insanity for both sexes resulting from alcoholic abuse at 25 per cent., this being the highest estimate from among the statistics of seven distinguished authors. Dr. Lee places the percentage at 11, this being the lowest.

Table of percentages of cases of insanity caused by intemperance:

<table>
<thead>
<tr>
<th>Dr. Poole</th>
<th>25 percent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commissioners in Lunacy (1844)</td>
<td>18</td>
</tr>
<tr>
<td>Dr. Needham</td>
<td>16</td>
</tr>
<tr>
<td>Dr. Clouston</td>
<td>16</td>
</tr>
<tr>
<td>Dr. Kirkbride</td>
<td>13</td>
</tr>
<tr>
<td>Dr. Bucknill</td>
<td>12</td>
</tr>
<tr>
<td>Dr. Lee</td>
<td>11</td>
</tr>
<tr>
<td>Average number, 16; highest number, 25; lowest number, 11; mean number, 18.</td>
<td></td>
</tr>
</tbody>
</table>

The average percentage of the seven authors is 16, the mean number 18, and Drs. Needham and Clouston will agree in placing the percentage at 16, the figure which corresponds with the average numbers. More lately the Commissioners in Lunacy have informed us, in their report for 1879, that from statistics obtained from all the asylums in this country, intemperance in drink produces the following percentages:—For males, 21.3; for females, 7.9; and for both sexes, 14.6; a figure not far removed from 16, the average just mentioned. We cannot but regard these statistics and figures with the utmost respect; but the question is, do they or do they not express the real state of the case as regards the etiology of insanity in connection with alcoholic excess? We have reason to believe that they do not.

Public asylum officials are placed in a much better position than are private asylum proprietors with regard to collecting large masses of figures, and from them deducing statistics. But we maintain that they have neither the time nor the opportunity that a physician in private asylum practice has of ascertaining whether any given act of a patient before his admission is to be considered a symptom, or as a cause of insanity.

From careful inquiries made amongst the friends and relations of patients in my own practice, supported by the records contained in the case books of my asylum, I am led to believe that a large proportion of cases—in fact, one-third—are by most observers attributed to alcoholic excess, when in reality this habit was a symptom, and not a cause, of the disorder.

I must confess to have been somewhat startled by the result of my investigations, and I naturally expect that I may be asked upon what grounds I form this belief. They are as follows:—(1) From careful inquiries among the friends and relations of patients admitted to the asylums; (2) from the difference which exists between those cases caused by, and those accompanied by alcoholic excess, in symptoms, duration, curability, and the habits of the patient subsequent to his recovery on leaving the asylum.

Two hundred cases have been carefully considered—one hundred male and one hundred female. In 100 male cases I found 74 in whom there was no history whatever of intemperance. The number which remains after subtracting 74 from 100 is 26, which is somewhat higher than that given by the Commissioners' tables, which is 21.3. Out of these 26 I found 18 cases in which intemperance was in reality a cause; but the remaining eight, so far as could be ascertained from the relations, and from the records of the case books, were cases in which intemperance was evidently only a premonitory symptom.

In the 100 female cases 94 were free from any history of intemperance. This leaves six cases in which alcoholic excess was alleged to have been the cause, a number somewhat lower than that given by the Commissioners' tables, which is seven. Of these six cases four were caused by intemperance, and two were cases in which alcoholic excess was evidently only a premonitory symptom. Taking both sexes together, I found 32 cases in 200, or 16 per cent., in which alcohol
was alleged to be the cause of the mental disorder. Of these 32, 10 were cases in which excess was only a premonitory symptom. This leaves 22 cases in the 200, or 11 per cent., in which intemperance was actually the cause. The Commissioners' tables give 14 per cent, as the number for both sexes.

Supposing my figures, 11 per cent., to be correct, and subtracting this 11 from 14, we believe it to be quite possible that the three remaining patients per cent. in the Commissioners' tables might have been cases in which alcoholism was only a symptom and not a cause; and that if the superintendents who supplied the materials for these statistics had only had more time, and better opportunities for investigating the histories of their cases, the return percentage would have been much lower.

It is worthy of remark that my number, 11 per cent., exactly corresponds with that of Dr. Lee, the lowest percentage of the seven authors already quoted.

It is a matter of some satisfaction to find the percentages of cases alleged to be caused by intemperance amongst my two hundred patients so nearly correspond with the percentages given by the tables of the Commissioners in Lunacy. For males my percentage is 26, the Commissioners' percentage is 21. For females my percentage is 6, the Commissioners' percentage is 7. For both sexes my percentage is 16, the Commissioners' is 14. On closer investigation, however, my figures are reduced as follows: For males from 26 to 18, for females from 6 to 4, for both sexes from 16 to 11. That is to say, one-third of the cases in both sexes of my 200 patients, in whom intemperance was alleged to be a cause, were cases in which I believe it to have been in reality only a premonitory symptom of insanity.

I shall now endeavour to point out the distinction between cases caused by alcohol and cases where alcoholic excess was only a symptom. When intemperance is a cause, the previous habits of the patient are those of a drunkard; when it is a symptom, the previous habits have been, comparatively speaking, those of sobriety. When intemperance is a cause, frequently no other influence can be detected which has produced the insanity, or the proofs of intemperance are so marked as to obscure all other points in the previous history. When intemperance is a symptom only, some other distinct influence is found to exist which is more likely to produce mental symptoms than alcohol itself—for instance, a blow on the head.

When alcohol is a cause, habits of intemperance have preceded the appearance of the mental symptoms, which have only been developed gradually. When the intemperance is a symptom, the mental aberration has preceded the abuse of alcoholic stimulants, and the mental symptoms are developed more suddenly. When alcohol is a cause, the mental symptoms are most frequently those of homicidal mania or suicidal melancholia, with acts of eccentricity. When intemperance is a symptom, the mental phenomena are those of melancholia of a subdued form, or delirium tremens.

I have observed a transient attack of epilepsy on the admission of two cases where intemperance was a symptom only of insanity. This I have only seen in cases where intemperance was a cause in the last stages of the disorder, and it was then incurable and permanent.

When intemperance is a cause, the delusions are of a disagreeable character, and are either those of suspicion or of grandeur. When intemperance is a symptom, the delusions are either of a quiet order, referring to persons other than the patient, or partake of the peculiar nature of those accompanying delirium tremens. Acute cases of alcoholic insanity recover; but if the intemperance has been a cause, the patient invariably takes to drinking again so soon as he is at liberty, and dies an early death, frequently from cirrhosis of the liver. Whereas if the intemperance has been merely a symptom, the patient frequently remains sober after his discharge from
Cases of Alcoholic Insanity in Private Practice.

the asylum, and is able to return to his duties of social life.

Chronic cases of alcoholic insanity do not recover. But if the intemperance has been a cause, there is a constant craving for drink whether the patient be or be not confined in an asylum. Such patients drift rapidly into the abyss of chronic dementia. If, on the contrary, the intemperance has been merely a symptom, the patient is always contented with a moderate supply of stimulants; his delusions and his mental condition remain stationary, but he does not become afflicted by dementia, even when advanced age comes upon him.

I shall now briefly refer to four cases illustrating these points of distinction. The first pair are acute, the second pair are chronic. Of the first acute pair, No. 1 is a case where intemperance was a cause. No. 2 is a case where intemperance was a symptom. Case No. 1 was a captain in the army, aged thirty-seven. Previous habits, those of a confirmed drunkard. Symptoms of homicidal mania. Had been guilty of brutal violence to his wife, culminating in his taking her in his arms and holding her over the outside of the balcony of his house and threatening to dash her on to the area railings below. His maniacal symptoms lasted but one day. The next morning he had completely recovered; but stayed in the asylum by his own wish, to keep him, as he said, from drink. The pupils were irregular, but this symptom was congenital. On admission he was suffering from bilious diarrhea and a sickness, the result of his late potations. He brought a large bottle of brandy into the asylum in his pocket. He slept badly, and required sedatives at bed time. He was discharged at the end of a week, and immediately recommenced his habits of intemperance. These became more and more marked, and he died from their effects a year later.

No. 2. An Indian civil servant, aged forty-one. Although he had lived in India, he had always been sober and steady. A month before admission he became very eccentric in his habits, and was evidently insane. Three weeks later, a week before admission, he took to drink. The symptoms were those of quiet melancholia, with traces of delirium tremens. He had an epileptic fit the day before admission, but none subsequently. On the way to the asylum he imagined that there were crabs crawling about on the floor of the cab, and tried to kill them with his umbrella. He also thought the pattern of the carpet was an inkstand, and that he should upset it if he did not move it from the floor; that the birds on the chintz pattern of the sofa were eating one other, and that he had had a visit from the devil. He recovered in a week, but stayed, by his own wish, two weeks longer in the asylum, as he said he felt unable to control himself. His recovery was complete, and he has since his discharge remained temperate, and able to go about alone and enjoy life. No. 3 was a person of whose character I was unaware when I received her, as she was a kept mistress, aged thirty-two. For years past she had led a drunken dissolute life. Mental symptoms, mania with acts of eccentricity. She has stood on the top of a cab and driven it through the streets, has walked along a narrow ledge outside a house, thereby endangering her life; has thrown money amongst the crowd attracted to her house by her eccentricities; has presented a toy revolver at various people, but is not considered otherwise dangerous. Delusions—that she has been poisoned, that the police are all Jesuits. Believes that she is the authoress of certain well-known novels. Was very anxious to be at liberty again. The previous character of the patient was soon discovered, and she was discharged at the end of a week. She immediately took to drinking again, became an inmate of a county asylum, and soon drifted into chronic alcoholic dementia. No. 4 was a foreign baron, aged forty-one. Previous habits, sober and steady. There was a history of a blow on the head, given to him by his father (when riding with him) with a loaded hunting whip, who intended to murder him and inherit his estates. This produced mental symptoms, which came on very insidiously. Being a
The Influence of Alcohol in the Causation of Insanity.

person of weak character, he was laid hold of by a low publican in Wales, where he had gone to fish, and kept in a tavern concealed from his relatives. A cousin of the patient came to consult me about the case, and we went together into Wales and rescued him with great difficulty from the low villagers who were daily robbing him. He was found in a state of great filth and neglect, and his habit then was to walk about the house with a glass of beer in his hand, which he constantly sipped, thus consuming a large quantity and getting quite fuddled by the end of the day. On admission he had an epileptic attack, but none subsequently. Delusions: That his attendant, whom he had never seen till he came to the asylum, was the rightful heir to his estates, and that he and the attendant were changed at birth.

He had also others connected with the affairs of his relations. These delusions remained fixed for two years and a half. He had no desire at any time for more than a moderate amount of stimulant, and made no complaint at this quantity being limited. His mental condition is exactly similar to what it was on admission, being that of quiet, harmless melancholia.

From what I have advanced, I am led to the following conclusions:—That one-third of the cases of insanity usually supposed to be caused by intemperance are in reality cases in which alcoholic excess is really only a premonitory symptom; and also that the distinction between cases of insanity caused by intemperance and cases of insanity in which alcoholic excess is a premonitory symptom are very marked, if carefully looked for.

THE INFLUENCE OF ALCOHOL IN THE CAUSATION OF INSANITY.*

By G. M. Bacon, M.D., Medical Superintendent of the Cambridgeshire Lunatic Asylum, Fulbourn.

It seems almost a foregone conclusion in the public mind that intemperance is the principal cause both of insanity and crime. The advocates of temperance never weary of urging these views, as though they were truths admitting of no doubt, and even medical men are apt to accept them too readily. I feel, therefore, that in urging any contrary view there is considerable prejudice to encounter. On the present occasion I am only concerned with the influence of alcohol, i.e., its excessive use, in the production of insanity, and it is obvious that the only practical proof must be the number of insane persons confined in asylums whose malady can be attributed to intemperance. The following quotations will illustrate what

* Read in the Psychological Section of the British Medical Association at Cambridge, August 11, 1880.
males; . . . fully two-thirds of the males prior to their discharge have admitted their disease to be caused thereby."

Dr. Headder, in his last annual report of the Carmarthen Asylum, says, "The most serious argument against the use of beer as food in such institutions as this is to be found in the fact that excess in drink is undoubtedly the most potent cause of insanity."

Now, I deny that this is a "fact," and will proceed to give some reasons for my opinion. It is impossible to do more than glance at one aspect of the subject in the few minutes allotted to each speaker, and I purpose to show what lesson statistics teach us as to drink as a cause. The question of its influence is of great interest to all, but we have to consider it in a scientific spirit, and should not be led away by general assumptions which accord with a preconceived theory. In speaking of a cause we must mean, if not a sole cause, as that which has a main and predominant influence; and I think when a large series of cases is taken it can be shown that intemperance has by no means the prominent place that popular fancy assigns to it. I am glad, too, to find that I may quote in support of this view so good an authority as Dr. Clouston, who, in his last report, says (p. 15): "There is no more interesting fact in the history of mental disease, to my mind, than this, that in that most sober, moral, and self-restrained of all the English societies, the Society of Friends, the malady is as common, if not more so, than in the general population. Such a fact should make us careful and charitable in judging of the causes of this terrible disease, and absolutely disproves those sweeping statements that one sometimes meets with, that most of the insanity in the kingdom is due to drink."

The best statistics available for the solution of this question are those in the yearly Blue-book of the Commissioners of Lunacy, and these happen to be more reliable than such figures usually are, as they are founded on returns from public asylums, made voluntarily with special care. According to these, intemperance figures as the cause of 14 per cent. of the total insanity of England and Wales in 1878. A comparison of the rate in various districts leads, however, to a very different conclusion. In the following list (A) are grouped several (9) counties, of the agricultural type, and resembling one another pretty closely. In another list (B) are five counties of a different class, in which the inhabitants are chiefly engaged in mining operations or coal production. In the third list (C) are included five large towns. We have here the principal classes of the working population of this country represented, and I hold that this is a fair estimate.

From these it appears that in the rural districts (Table A) drink causes from 5 to 14 per cent. of the insanity. In the 2nd table the ratio varies from 3 to 29; while in the towns from 2 to 30 per cent. are ascribed to the same cause. I ask, then, whether it is possible that the same cause can produce 5 per cent. in Oxon and 14 in Dorset, or 7 in Cambridgeshire and 14 in the three adjoining counties, and whether 3 per cent. in Cornwall can be affected by what is said to produce 26 in Herefordshire, 21 in Worcester, and 29 in Durham; and whether it can be true that only 2 per cent. of insanity in Ipswich is caused by drink and 30 per cent. in Norwich, while Bristol owes to 12 and Birmingham to 24 per cent.? Do not these figures confute themselves?

Are Norfolk and Dorset, or Bedfordshire and Cambridgeshire so different that the people in one county are twice as drunken as in the other, while the proportion of insane to the whole population is about the same? As for Suffolk—to me it is a mystery. There are no female drunkards who go mad in that happy land. Even Ipswich—no mean town—cannot furnish one, though brewers thrive in that immaculate borough, and the only other place in England and Wales to compete with it is Cornwall, where there is a large mining population of, as is well known, a temperate and moral
The Influence of Alcohol in the Causation of Insanity.

I think anyone reviewing these statistics must hesitate to accept the dictum that one-seventh of the insanity of this kingdom is due to drink.

I will endeavour to consider the subject from another side, by a more minute study of the cases in the asylum with which I have been connected now for sixteen years or more. At the Fulbourn Asylum from 1858 to July, 1880, 1,950 patients had been admitted (not reckoning a few private cases). Of these 1,950 some 75 were supposed to have been brought there by drink.

The majority of cases were known to me personally. I have pursued them one and all through the case books, and the result of my analysis is this:—Four had insane relations as well as drink; five had injury to the head, or sunstroke also; in three cases the first attack occurred between the ages of fifty-one and seventy-five; in nine cases there was general paralysis; one was imbecile, and had been in gaol; three had had previous attacks of insanity; five suffered from organic disease of the brain; one was an epileptic—the fits not being due to intemperance; five were suffering from melancholia or dementia; four had mania—not of acute type. Without pretending that all these cases are to be accounted for irrespective of drink, I think I may fairly assume that so far from that being the main or principal one, it was quite secondary, or out of the question altogether.

To show my meaning more clearly, I append a few notes as to some of the forty cases alluded to:—In one case, attributed to "drink," the patient was a woman, æt. seventy-three, and had been four years in an asylum. She had double cataract, and was in a state of senile dementia. She had kept a public-house, and was, therefore, considered to drink. In another, a man æt. seventy-four had various delusions, but is still alive and hearty, and useful. In another, the patient was tried at Sessions, and the Grand Jury ignored the bill and sent the man to an asylum, instead of, for the fourth time, to a gaol. In another, an old man came in with atrophy of both discs and recent embolism of the central artery in one eye. In another, a married woman got troubled and jealous of her husband, not without cause. A year after her sister appeared—also insane, and for the second time. In another, the patient was stated to have been ill six months, originally with delirium tremens, brought on by intemperance, and the delirium is said to have terminated in hypochondriasis. It appears (the doctor writes) that he has not drunk to excess and not had delirium tremens; certainly never tremor or illusions of special sense. In another, a man at sixty had had small-pox four years before, "followed by imbecility of mind, and has since manifested animosity against his wife and daughter without reasonable cause."

I think these illustrations may show the little reliance to be placed on the information on which these figures and the consequent inferences are founded. I think they show that a much more careful sifting of details is necessary than is really possible before any observer can deliberately record that the insanity of any individual is solely or even mainly due to drink. A vast many things must be eliminated before such a verdict can be given. The instances I have given are meant to show the fallacies and mistakes, and not to attribute carelessness or ignorance to any one person. But if this is the history of the past, what is that of the present? Probably much the same, and for that reason I hesitate to accept the "facts." There is yet another reason to be offered. What is the nature of the cases to be fairly attributed to drink? When you come to paralysis, blows on the head, sunstroke, domestic trouble, losses of property or friends, and hereditary taint, largely associated with drink as a cause of insanity, it is obviously unfair to select the last as the sole or most prominent factor.

I understand certain classes of cases attributable to drink almost alone:—(1) The acute and recent cases—allied to delirium tremens—
like acute poisoning. (2.) The chronic topers, who slowly degenerate in body and mind. (3.) The dipsomaniacs, or those who have an irresistible craving for drink without other mental symptoms. (4.) The persons who drink simply from a desire to overcome trouble or emotion, or to nerve themselves for an effort—a neurotic class. But if you attempt to classify cases with any such accuracy, there will not be 14 per cent. of insanity caused by such patients.

### Table A.—Showing percentage of insanity attributed to intemperance in the following districts:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>M.</th>
<th>F.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambs</td>
<td>7'8</td>
<td>8'6</td>
<td>7'1</td>
</tr>
<tr>
<td>Bucks</td>
<td>10'7</td>
<td>14'5</td>
<td>6'6</td>
</tr>
<tr>
<td>Derby</td>
<td>16'5</td>
<td>20'1</td>
<td>9'2</td>
</tr>
<tr>
<td>Durham</td>
<td>29'2</td>
<td>41'2</td>
<td>15'4</td>
</tr>
<tr>
<td>Hereford</td>
<td>26'9</td>
<td>37'5</td>
<td>10'3</td>
</tr>
<tr>
<td>Worcester</td>
<td>21'9</td>
<td>35'2</td>
<td>8'5</td>
</tr>
<tr>
<td>Cornwall</td>
<td>3'5</td>
<td>7'6</td>
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### Table B.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Counties</td>
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<td>25'0</td>
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<tr>
<td>Norfolk</td>
<td>6'0</td>
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<td>7'8</td>
<td>17'2</td>
</tr>
<tr>
<td>Wilts</td>
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<tr>
<td>Dorset</td>
<td>14'2</td>
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<td>Oxon</td>
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### Table C.

<table>
<thead>
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<th>F.</th>
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<tr>
<td>Newcastle</td>
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<tr>
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<tr>
<td>Birmingham</td>
<td>24'6</td>
<td>39'3</td>
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<tr>
<td>Bristol</td>
<td>12'06</td>
<td>6'3</td>
</tr>
<tr>
<td>Norwich</td>
<td>30'0</td>
<td>43'7</td>
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**ALCOHOL IN ST. GEORGE'S HOSPITAL, LONDON.**

*(From the Annual Report for the year 1879.)*

The question of the quantity of stimulants administered to hospital patients has of late much occupied public attention. The Weekly Board, regarding this question as one entirely of medical treatment, abstain from offering any opinion with regard to it, the entire responsibility as to the administration resting on the medical attendant equally as in prescribing drugs; but the Weekly Board thought it expedient to ascertain whether in St. George's Hospital the consumption of stimulants differed much from the other large London hospitals. A committee was appointed for this purpose, who placed themselves in communication with twelve of these hospitals, and from information received they compiled a tabular statement of the quantity of wine and spirits and malt liquor, and the equivalent in alcohol per patient, and the cost of each at the hospitals. This table is interesting, as showing the great variation in the quantity consumed in the different hospitals. It is as well to state that probably about one-fourth of the patients in all the hospitals are daily under treatment with wine or spirits, but it was not possible to arrive at any exactness on this point from the want of sufficient data. From a weekly return of the patients at St. George's Hospital, and those treated with wine and spirits, kept for the last ten months, it appears that about one-fourth, not more, of all the patients treated have stimulants other than malt liquor administered to them. In 12 London hospitals the quantity of wine annually consumed varied from 61'145 ounces to 45'248 ounces per patient, spirits from 7'096 ounces to 32'980 ounces per patient; the equivalent of alcohol in wine and spirits varied from 4'573 ounces to 21'117 ounces per patient. This table shows that in seven hospitals the annual average of the equivalent in alcohol of the beer, wines, and spirits consumed per patient is less than at St. George's Hospital, and in four it is higher. Of 720 patients admitted into Atkinson Morley's Convalescent Hospitals only ten received any stimulants beyond beer. One alteration has been
Alcohol in St. George's Hospital, London.

10 or 12 pints of beer and from a half to 1 pint of gin, age 55.
1 pint of beer, with 1 pint of gin daily, with frequent excesses, age 45.
1 to 2 pints of beer and 1 pint of sherry, age 53.
1 bottle of claret, age 39.
1 gallon of beer frequently, age 33.
Beer very freely, age 34.
4 pints of beer and much spirits, age 39.
From 3 to 4 pints of beer, and from 1 to 12 glasses of rum, age 54.
7 pints of beer and 7 glasses of spirits, age 41.
Drunken three times a-week, age 36.
A confirmed drunkard, age 33.
Immense quantities of whisky, age 45.
12 to 14 pints of beer, and a variable amount of rum, age 37.
10 pints of beer, 1½ pint of rum, age 45.
The largest consumer of beer never exceeded 26 pints a day, age 35.
The largest consumer of spirits took 20 to 30 glasses of gin daily, age 30.
Some of these patients are said to be "gouty;" only one "total abstainer" can be discovered.
These examples are all taken from those under the care of the physicians. There appears to have been no such record kept of those under the care of the surgeons.

(From the Lancet, July 10.)

When we are asking the public to support the hospitals, as we very seriously do, it is only right to urge that hospitals shall make it clear to such patients as come to them suffering from one or other of the various forms of alcoholism that their diseases are largely self-induced. Patients who would resent a hint of this kind from any other quarter will often take it from a physician.

It is a matter, too, for serious consideration whether the large amount of money spent by hospitals on beer and other stimulants, besides conveying wrong teaching to patients, might not be spent to more advantage in
procuring other forms of food. The public, if asked to be less stinted in its gifts to hospitals, and indeed to give generously, has a fair right to ask that hospital money shall be administered wisely.

Notes and Extracts.

The International Temperance Congress at Brussels.—This Congress was opened on Monday, 2nd August, and continued in session, with the exception of one day, till the following Saturday. Eight nationalities were represented. The National Temperance League was represented by the Rev. Dr. de Colleville and Mr. John Taylor; and the British Medical Temperance Association by Dr. C. R. Drysdale, London; Dr. David Brodie, Edinburgh; and Mr. H. Branithwaite, F.R.C.S., Willesden. Scientific papers contributed by the two last-named gentlemen, and by Dr. Norman Kerr, are given in full in our present issue. Drs. Dujardin-Beaumetz, Mottet and Lunier, of Paris; Drs. Vauceroy, Carpentier, Martin, and Belval, of Brussels; Dr. H. Barella, and other medical men, took part in the proceedings. The scientific questions put for the consideration of the Congress were principally these:—What are the best means of obtaining distilled liquors which contain only pure alcohol, and by what means, legislative and fiscal, can the exclusive employment of such be assured? The second question embraced the study of the physical action of pure artificial alcohol, while the third treated of the best methods of preventing the use of poisons, now so largely mixed with alcoholic drinks. The National Temperance League’s deputation to the King, and the déjeuner given by Mr. Taylor to the leading members of the Congress, were the means of bringing the question of abstinence prominently before the Belgian public through the newspapers, and facilitated the appointment by Congress of a sub-committee of nine members to investigate theoretically and practically, nephalism, or total abstinence from all alcoholic beverages, and to present a written report to the Congress of 1882. That Congress is to be held in London, and the sub-committee is to consist of Dr. Benjamin W. Richardson, F.R.S., president; Mr. John Taylor and Dr. Lunier, vice-presidents; Rev. M. de Colleville, D.D., reporter and secretary; Dr. Norman Kerr, Mr. Harrison Branithwaite, Dr. Barella, Dr. Tarci and Major Hennequin, members.

Testimonial to Dr. Norman Kerr. —Dr. Richardson, F.R.S., presided at an interesting meeting held in the rooms of the Medical Society of London, on July 7, when a testimonial was presented to Dr. Norman Kerr, F.L.S., consisting of elegantly framed portraits of Mr. and Mrs. Kerr, an illuminated address, a basket of flowers, especially intended for Mrs. Kerr, and a handsome Victoria carriage. In its account of the meeting the British Medical Journal said:—“The ranks of the medical profession contain many men who have worked honourably, energetically, and successfully in the same direction as Dr. Kerr; but few have been able to advance so actively the cause which many have at heart; and certainly few men in general practice have been able to devote the time and talents which Dr. Norman Kerr has brought to the service of humanity, to the advancement of temperance, and to the honour of his profession and the benefit of his country. The testimonial is one which derives additional importance from the great number of well-known names to be found in the list of subscribers. It is, however, only a just tribute to one of the most honourable and single-minded members of our profession, and one who has in a remarkable degree illustrated the best qualities which can adorn the professional life.”
THE
MEDICAL TEMPERANCE JOURNAL.
January, 1881.

Original Contributions.

ALCOHOL AS AN ANTISPASMODIC.*

By Benjamin Ward Richardson, M.D., F.R.S.,
President of the British Medical Temperance Association.

In my essay on Intermittent Pulse, written twelve years ago, I expressed, on the subject of treatment, that alcohol was the sheet-anchor of treatment in extreme cases, and I gave a formula for its administration which has been very often used. Since I have taken up the advocacy of the principle of total abstinence from all alcoholic drinks I have been challenged in respect to the above-named passage as if there was something in it entirely contradictory to my present views.

Such contradictory method does not, however, lie for a moment at my door. No man can lead an active outspoken life and at the same time a life of continued learning (in which the student's is always the first part), without finding that something he has said requires correction or it may be retractation. Conscious of this fact I have ever aimed respectfully to follow the best examples of men who, under a like experience, have been obliged to take action on themselves, and at once to correct or to retract altogether whatever in my own mind and clear judgment I have seen occasion to recall.

In the present instance there is no necessity either for correction or for retractation. Between the general use of alcohol as a supposed food or luxury, and its use as a medicinal agent, there is the broadest distinction, a distinction as broad as that which exists between opium as a food to the opium eater and opium as a medicine for the sick. I have never given up the medicinal use

* Essay read at the First Meeting of the Session of 1880-1 of the British Medical Temperance Association.
Alcohol as an Antispasmodic.

of alcohol. On the contrary, it has been my steadfast study to learn, with all possible accuracy, the therapeutical value which alcohol really possesses; to compare it, in respect to its action, with other medicinal agents with which it is therapeutically allied, and to make sure when to administer it and how to administer it with prospect of good and certain success.

In this sense I have specially devoted my attention to the study of alcohol as an antispasmodic. If alcohol have any particular medicinal virtue it must be in this direction of action,—I mean as an antispasmodic,—that it is most useful. All our physiological observation upon the effects of alcohol point in that direction. Alcohol relaxes. It relaxes the arterial vessels to their extremest subdivisions: it relaxes muscles until they fail to respond to their nervous stimulus. "Helplessly drunk" is the common phrase employed to designate the man or woman who is paralysed by alcohol.

Alcohol relaxes the organic muscular fibre so completely that the relaxation induced by it extends even after death. In performing one of my experiments for what I called in my communication to the Royal Society on resuscitation in 1865, artificial circulation, I found that when a rabbit was suddenly killed in the usual way by a blow on the back of the neck, such was the resistance due to the shock exerted on the blood-vessels it was easier instantly after death to rupture the aorta by the pressure of an injected fluid than to inject fluid over the arteries into the veins. I found also that the diffusion of some agents over the body immediately before or immediately after death intensified this resistance while others reduced it. Chloroform and all its allies of the chlorine group intensified it. The alcohol, methyl and ethyl, and their respective ethers, together with methylal, amyl nitrite, and some other analogous bodies, so reduced it, that the injection through the minute circulation was most easily effected.

Comparing these facts I was led almost immediately after my first experiments with amyl nitrite in 1860-2, to put alcohol and the nitrite in the same position as relaxing chemical agents on organic and voluntary muscular fibre. Thus, therapeutically, alcohol came under the old head of an antispasmodic, and it is as such that I have since more carefully studied its clinical value.

In making this explanation I do not wish to assume that alcohol is of no other medicinal use than as an antispasmodic. It is an antiseptic. It reduces the animal temperature, and in that respect may be considered a febrifuge. It coagulates blood and albuminous fluids, and in that sense may be called a styptic. Its values in all these directions are different and, perhaps in all, comparatively little when tested by the side of other agents; but
I leave these considerations to keep to the great one,—its service as an antispasmodic.

In this regard ethyl alcohol holds a place peculiar to itself. It acts very much more slowly than amyl nitrite, ethyl ether, or methyl alcohol. For that same reason the relaxing action is much longer held on. Thus, in sharp spasm, such as that of angina, colic, tetanus, asthma, the action of amyl nitrite is quick, determinate and at the same time evanescent, while the action of alcohol is too slow to effect relief in any such space of time as would prove to be useful during emergency. What is more, the quantity of alcohol that is required to produce a relaxing effect in such cases is so great that other evils are apt to arise from the complication.

It is scarcely correct therefore, to say that alcohol is a good antispasmodic in cases of acute, tonic, or tetanic spasm. But in such cases it becomes a convenient and compatible vehicle for the more active direct antispasmodics, and as such I frequently prescribe it. Thus, in pure spasmodic asthma, I commonly order for an adult the following mixture:

Amyl nitrite m. iiij. 
Alcohol, sp. gr. '830 3/3 ss.
Distilled water 3/3 i. ss.
To make a draught.

This, with more water added to it, to render the dose agreeable to the taste, is very rapid in its action. I have at the present time a patient suffering from spasmodic asthma, who for two years past has always carried this compound with him. He has invariably some preliminary indications of an acute attack in the form of constriction across the chest, rapid and strong action of the heart, and coldness of the hands and feet. Before he took the remedy above named he found more relief from a sharp walk, or even a run, than from any other course of treatment, and he sometimes could stave off an attack by this plan. Now he at once takes his draught in cold water, ice-water if he can get it, drinking it slowly, and he so certainly obtains the desired relief that for fifteen months he has not had one continued attack. In this instance the alcohol keeps up the action of the nitrite, and this mode of administration contrasts well with the mode of administration I originally suggested, by inhalation. He first was treated by inhalation of the nitrite and so obtained relief, but it was a temporary relief only, and not comparable in result to the present method. In this instance the sufferer is a total abstainer from alcoholic beverages, for which reason so small a dose of alcohol as half a fluid ounce suffices, often without repetition, to keep up the relaxation. He is, however, instructed to repeat the dose every half-hour for three times, if relief should not follow at
once. A few times he has been obliged to take a second portion.

I have followed the same mode of using alcohol with the amyl as an anti-spasmodic in cases of angina pectoris, but I cannot say with the same good result. Paroxysms of angina in those who are subject to them are so terrible that they keep the sufferer ever on the point of expectation and dread that they are about to occur. The result is that patients constantly have resort to the alcoholic remedy, a practice which in truth leads to two bad results. In the first place, a craving for alcohol is soon created. In the second place, that craving once established itself keeps up a condition of alcoholism which is most depressing; which promotes trepidation and anxiety, and which prompts the seizure. Further than this the alcohol, if long continued, keeps up a form of acid dyspepsia, during which the urine becomes charged with uric acid, the secretions of the skin are made very acid, and the whole body is thrown into a state of rheumatic or rheumatoid disorder. Lastly, the effect of the alcohol as a continued antispasmodic is soon lost, unless the dose be steadily increased, when the action of the amyl is, from the dilution, itself also reduced in efficacy.

Except, therefore, in rare instances, I have given up the employment of alcohol as a menstruum for amyl nitrite in angina, and have returned to the plan of administration by inhalation,—a plan that usually leads to instant relief, does not cause dyspeptic disturbance, and does not lose signally in its effect, even after several months,—I had almost said years,—of employment. I have, in fact, a case of angina in which, after two years and eleven months, the nitrite has, on every occasion, at once subdued the spasm.

Let me, in parenthesis, dwell for a moment on the question of loss of effect from medicinal substances. This, as I think, turns greatly on the solubility of the substance in the blood, and the fluids of the tissues. If the substance be very soluble, so that great portions may be taken before there is saturation, the effect first produced is soon liable to be lessened unless the quantities be increased, whereupon there is, in time, set up by it a series of systemic changes which are physiologically different from those which, in the first instance, were simply useful. If, on the other hand, the substance is practically insoluble in the blood and fluids of the tissues, the secondary effects due to increasing absorption are avoided, and the agent continues to exert its primary influence from much the same dose for a long, and practically an unlimited period. Alcohol and amyl nitrite are examples of this rule. Alcohol, easily absorbed and diffused, requires an increasing dose, leading to new and unnecessary phenomena. Amyl nitrite, comparatively insoluble, repeats its action again in the same
manner and with good effect. Anhydrous ether, another antispasmodic, resembles amyl nitrite in this respect, but, being more soluble, not so completely. Ether may, however, be repeated an immense number of times without losing its effect, and without exciting systemic changes or structural devastations.

The diffusibility of alcohol in the blood and through the body renders it, therefore, a bad antispasmodic where it is often required. But this very fact of diffusibility makes it as useful in other cases, when an equable diffusion through the body is the best line of practice to be pursued. In illustration I may mention examples of shock or stun, mental or physical, as cases in point. During shock, as from a blow or from fright, the pallor of the face indicates the resistance that has occurred in the terminals of the circulation, while the heart sharing, through its vessels, in the same catastrophe, is unable to meet the strain to which it is subjected. Here alcohol acts perfectly as a restorative, when it can be administered and absorbed. Diffused through every part, it causes a relaxation, under which the heart is relieved, the circulation is set free, and the animation is restored. In short, just because a man intoxicated from alcohol bears shocks which might be fatal to a sober man, so a man under shock is relieved by alcohol. In the first instance the body was in a condition under which the organic motor-fibre is enfeebled by the alcohol, and rendered irresponsible to the concussion; in the second instance the contracted organic fibre is relaxed by the alcohol.

It is no paradox to say that in this particular mode] of action, in cases of stun, alcohol resembles bloodletting. The old practitioners drew blood from persons who were stunned by physical or mental shock, and if they succeeded in getting a current of blood they were accustomed to witness a quick re-animation. I have seen this phenomenon myself in the early part of my career. What occurs from this process is relief to the right side of the heart, with removal of pressure and of resistance to the heart-stroke, so that the heart is enabled to rekindle motion. The relaxing influence of alcohol is of the same character of relief.

For a similar reason alcohol is a good agent to administer just before the administration of those anaesthetics which produce contraction of arterial fibre and convulsive spasm. This action belongs to all the members of the chlorine anaesthetic family, to chloroform singularly, and is no doubt, as I have pointed out over and over again, the chief cause of danger from them. To give a dose of alcohol therefore,—a dose sufficient to produce a demonstrable physiological effect,—before administering chloroform, is sound physiological practice; and I attribute much of the success which attended the administration of chloroform in my hands to this detail. I noticed so often that a full dose of
alcohol lessened the duration and intensity of the second or convulsive stage of chloroform, that I invariably gave a full dose before beginning to apply the inhaler. In my lectures on Materia Medica to the Royal College of Physicians I made this point a matter for direct demonstration. I showed the action of chloroform alone, of ether alone, and of chloroform after a subcutaneous injection of alcohol, on the hearts of three guinea-pigs that had been let sleep to death in the vapours. In the animal that had died under chloroform alone the heart was dead and the lungs pale; in the animal treated with ether alone the heart was beating briskly on the two sides, and the lungs were filled with blood. In the animal that had been treated first with alcohol and then with chloroform the heart was beating regularly on both sides, and the lungs were filled with blood.

Again, I showed an analogous experiment in my experimental lectures on Artificial Respiration. I showed two rabbits that had been made to cease to breathe in chloroform vapour, but one of which had previously been injected with alcohol. I started the process of artificial respiration in the two at the same time, as they came out of the narcotising chamber; and demonstrated that while the one that had been charged with alcohol was restored with the utmost readiness the other was hopelessly beyond restoration.

The antispasmodic action of alcohol is here shown at its best, and I should still, were I about to take or to administer chloroform, prescribe a preliminary dose of alcohol. For ether and nitrous oxide such a precaution would not be necessary; for methylal it would not be necessary. Those agents themselves play the same part as alcohol; they relax the arterial fibre.

The antispasmodic value of alcohol is realised again in other classes of disease or derangement, which have not, up to the present time, been sufficiently defined or recognised. I refer to conditions in which the balance between the impelling stroke of the heart and the recoil of the arteries is not in perfect order. In these instances we get the strange anomaly of a powerful impulsive heart, with a small feeble pulse, cold extremities, and pale surface of body. The persons in whom this condition exists are usually men of early middle age, of nervo-sanguine temperament, of active mental and physical habit, and of restless disposition. They are often men of letters, or artists, or are engaged in speculative business operations; and they are, as a rule, of rheumatic or gouty diathesis. Under undue pressure, hurry, or sudden fatigue, they become suddenly unwell; they say they are prostrated and disposed to sleep, or rather feel as if they could not keep awake. They are lifeless by comparison with what they were, and they are conscious of great irregularity and palpitation of the
heart. They digest badly; they complain much of cold; they com-
plain much of giddiness, and they explain that they are nervous on
the commencement of any public duty. The physical examination
of these persons may show no organic disease of the heart, but an
irritable and impulsive heart, with a very feeble pulse and a low
temperature. Let me take from my case-book one typical
example.

R. S. is a clergyman by profession, aged thirty-six, of bilious
temperament, and very much engaged in work. He has suffered
in early life from rheumatic fever, and still has occasional rheu-
matic pains. His appetite is fair; his sleep is fair; his memory,
usually very good, is now enfeebled, and he feels physically weak.
He is often dizzy, with tendency to delirium, and when he com-
mences to speak publicly he feels such loss of power in the loins
and muscles of the lower extremities he imagines he must fall.
His face is pale; his extremities are always cold; his bowels
constipated; the evacuations of clay-like colour, being sometimes
firm and hard, at other times fluid and resembling yeast. The
urine copious and pale, has a sp. gr. of 1018, but is free of albumen.
The respiratory sounds are clear. The pulse is sixty-eight, and
the three sphymophonic indications are present, but it is so thin
and small it is scarcely perceptible at the wrist. The heart
sounds are clear, but with an occasional soft murmur at the base
on the right side. The impulse of the heart is intense, and is
described by the patient as a "persistent palpitation." In this
case I commenced the treatment by carefully regulating the diet
and regimen, withdrawing tea, and enjoining less work. As the
patient was neither a smoker nor a drinker of alcohol in any
form, I encouraged him to maintain abstinence in those respects.

The symptoms in these examples all point to the one deranged
condition. There is an irritation, so to speak, extending through
the whole of the arterial system, by which the resistance to the
flow of blood through the body is impeded. This leads to a
temporary impairment of nutrition, and to central nervous ex-
haustion. In plain terms there is spasmodic peripheral resis-
tance from an irritation which is felt by the heart itself.

In these cases, if attention be paid to the secretions as a pre-
liminary; if the mind be relieved, as far as is possible, from
worry; if daily exercise be enjoined with early hours for going
to bed, and if full quantum of sleep be secured, the symptoms
often pass away without other aid; but this is not always the
case, and when the phenomena continue, alcohol with amyl nitrite,
judiciously administered for a short time, is of signal service.

In the case I have recorded, I prescribed first nitro-hydro-
chloric acid with tincture of nox vomica and infusion of gentian
together with an alterative. This not succeeding I prescribed
iron and quinine (Easton’s Syrup). After some few weeks of failure,—accepting the case to be one of the class described above, I ordered:—

Amyl nitrite, m. ij.
Alcohol sp. gr. 830, 7 iij.
Liquid Taraxacum, 3 ij.

To make a dose to be taken three times a day, in a wineglassful of water, after food.

The result of this treatment was immediate. It was like the result of an experiment. On the visit of the patient to me a week after the treatment had commenced the pulse was full and soft, the heart’s action was quick, the bowels were acting regularly, the mental activity had greatly improved, the body was of natural temperature, and the pulsation was much improved. At first the medicine produced some flushing and throbbing of the temples, but this passed away after two or three days, and in the course of a month the health was quite restored, on which the medicine was withdrawn. For fourteen months this patient has, I find, continued well, remaining still a total abstainer from alcoholic beverages. He is now doing his full share of professional work.

Another class of case resembling the above is often met with in which there is dryness as well as coldness of the skin, attended with lepra or psoriasis. In these persons there is, as a rule, a syphilitic history, acquired or inherited. In them the action of the heart is intense, with a feeble pulse and nervous exhaustion. These are benefited by alcohol in properly administered doses. I usually prescribe for an adult in such examples:—

Liquid Arsenite of Potassa m. v.
Pure glycerine 3 i.
Alcohol, sp. gr. 830 3 ss.
Distilled water, 3 i.

To be taken in half a tumbler of water three times a day after food. In some instances I also add to this prescription two or three minims of the nitrite of amyl, and I have seen recovery, when arsenic alone has failed, commence immediately on the addition of the antispasmodic. I have this week discharged a case of this kind, with recovery after five weeks’ administration of the mixture the formula for which is given above.

There is a third class of case belonging to this group, of which the phenomena are much the same, from conditions that are different as to origin. In the cases now referred to there is probably no resistance to the circulation of blood from undue contraction of arterial muscular fibre, but there is relative resistance, owing to the circumstance that the action of the heart is enfeebled, and cannot fairly overcome the natural tension.
Alcohol as an Antispasmodic.

The following case is in point. R. H. is a man of science, aged thirty-eight, following chemical pursuits. He is of nervobilious temperament and phthisical history. He is not a total abstainer, but moderately temperate. He smokes regularly. He suffered some ten years since from remittent fever. His appetite is fitful, his sleep restless and disturbed with dreams; his memory is not so good as it was, and he is, physically, easily exhausted. He suffers from frequent "confusion in the head;" is depressed in spirit; is sometimes very irritable, and, as he expresses it, is always "vibrating." His temperature is now natural, but his extremities are usually cold. Pulse is 72, regular and very feeble; heart sounds are clear, but impulse very feeble; the respiration natural; the tongue creamy; the bowels sluggish. The urine is clear and free of sugar and albumen, sp. gr. 1020. The facial expression is heavy and tremulous. There is no indication of organic disease of any kind, but extreme nervous depression, and heart-stroke insufficient to overcome arterial resistance. I give this as a typical instance of a diseased condition in which for a short period of administration half a fluid ounce of 830 alcohol once or twice a day, with iron, if required, or nux vomica, or digitalis, is of the utmost service.

In the case named the alcohol was prescribed with Griffith's mixture, and with immediate benefit. The form ran as follows:—

Alcohol, 3 ss.
Tincture of nux vomica, m. v.
Compound iron mixture (Griffith's) 31.

To be taken in half-a-tumbler of water twice a day after food. It was continued for three weeks, and then gradually removed, recovery being complete.

There is another form of case, in which there is acute recurring spasm in the stomach or intestines, and in which, after taking food, or after long abstinence from food, or after much mental or bodily fatigue, the patient is seized with severe pain and faintness, which are not relieved until there is escape of flatus. These cases are sometimes, as we all know, accompanied by what is called gastrodynia, and the spasm, which is their marked symptom, varies from uneasiness and oppression to the most acute suffering.

In this state of disease there cannot be a doubt that alcohol gives relief. It reduces spasm and permits the free escape of gaseous products, and so it relieves pain, and brings speedy quiet. There are no cases in which alcohol acts more promptly than these. There are, unfortunately, no cases in which it proves a worse friend. On one hand we must not, by any false enthusiasm, deny its efficacy. On the other hand we must not, by any bigoted sentiment for it, deny its danger. Carried a very little too far,
it loses its effect, until a slowly fatal dose becomes almost a ne-
cessity of life. The patient, under the physician's own guidance,
is, in fact, rescued from Scylla to be sacrificed on Charybdis. 
These are, par excellence, the cases that excite in the weak the 
-desire for alcohol. The sufferers are of nervous or nervous 
lymphatic temperament, and they soon like and long for more 
than the direct relief from the too diffusible stimulant. From 
the local relief they court the universal degeneration. 
I rarely see a week go by without having before me one or more 
of these examples of what may well be called nervous indigestion 
and spasm. I confess at once the extreme trouble and anxiety 
they give to a conscientiously anxious mind, which has to balance 
-between the certain immediate good and the all but certain and 
distant evil. 

I begin always the treatment of these cases without resort to 
alcohol. If I find that the sufferers have pyrosis, which is a very 
common accompanying symptom, I forbid specially two kinds of 
food, oatmeal porridge and tea. Tea I always counter-order, 
especially afternoon tea, and if the patient is a smoker I do my best 
to stop that habit. I then prescribe for the dyspeptic symptoms 
correctives for the secretions and one or other of the digestive 
ferments pepsine, pancreatine, or diastase. For the spasm I 
prescribe bicarbonate of ammonia and potassa, with nitrite of 
amyl and infusion of cloves, using glycerine as the solvent for 
the nitrite. The prescription usually runs:—

Bicarbonate of ammonia, gra. v. 
Bicarbonate of potassa, gra. x. 
Glycerine, ʒj. 
Amyl nitrite m. ij. 
Infusion of cloves ʒj.

To be taken when the spasm is present, and to be repeated every 
hour until relief is obtained.

Only when this fails, or when this and other agents fail, do I 
resort to alcohol. Then I add to the above mixture from half a 
-fluid ounce to six fluid drachms of 830 alcohol, for brief periods of 
time, withdrawing the alcohol as speedily as is possible.

Looking upon neuralgia as a form of vascular spasm in tracts 
of nerves we have a very clear idea of the reason why anti-
-spasmodics are so useful in some forms of this disease, as im-
mediate remedies. The alcohol in port wine has, for this reason, 
obtained its reputation for the relief of tic. But if, after the 
-relief from relaxation has been obtained, there is one agent more 
than another which sustains the systemic irritation on which the 
pain rests, it is alcohol in any shape, and especially in that un-
known sweet quantity called, ironically, port wine.

Admitting, therefore, the relaxing power of alcohol in the
neuralgias we have in using it always an ultimate danger to face, and happily we are not, I think, any longer obliged to face that danger. In croton chlortal, and in croton chlortal combined with quinine, we have an instant remedy, more effective than alcohol, and free of its reserved evil. For a year now I have successfully replaced alcohol by this new combination, for the use of which I am indebted to my good friend Dr. Elliot, of Hull. The formula is as follows:—

Croton chlortal, gra. ij.
Quinine, gra. ij.
Glycerine, as much as suffices to make a pill.

The pill to be taken when the attack threatens, and to be repeated every two hours until relief is obtained.

The peculiarly painful spasm which attends the menstrual period in some women, and which becomes neuralgic in its character, is another affection strictly under my present subject. I do not deny for a moment that in these cases a full dose of alcohol,—a very full dose,—often repeated, relaxes, and so brings relief. But perhaps never was so much evil bought at the price of this temporary good, as in these examples. That utterly untrustworthy compound sold as gin is the fluid with which these unhappy sufferers, often in early years, are dosed on these occasions. One of my lay friends who has a large number of women in his employ in a factory, writes to me on this topic, stating the demoralisation that the practice brings. He says, "In the young hands the time when the natural period is on is easily known by the odour of the gin in their breath." "My wife," he adds, "with motherly care, has been frequently amongst them to try to persuade them from the practice, for unfortunately the habit of taking the gin at these times soon infects the whole flock—sufferers and non-sufferers alike. But all her efforts are unavailing. The reply is that the gin certainly relieves the pain, and when the doctor is referred to he is said to confirm the statement, and I have been told that you confirm it. But cannot something else be done?"

In better classes of society than factory girls this same practice prevails, and we have all of us often to sanction it or replace it. It struck me some time ago, as I have once before stated here, that possibly the juniper which is present in gin might be, in some degree, the useful agent. Juniper increases the secretion from the kidney like ethyl nitrite, and might, I thought, be worth using, apart from the idea of gin. I have, therefore, given it in combination with croton chlortal in proportion of three minims of the oil with two grains of the croton chlortal made into a draught with glycerine and water.
Alcohol as an Antispasmodic.

This answers exceedingly well, and I press its use earnestly on your attention. The formula stands as follows:—

Croton chloral, gra. ij.
Oil of juniper, m. iiij.
Glycerine, zj.
Distilled water, zi. ss.

To make a draught. To be taken when in great pain and repeated every five or six hours until relief is obtained.

In the spasmodic varieties of hysteria, with its neuralgias and other mimickries of disease, we meet with many conditions in which the questions that have been already before us come up for consideration.

In these states of systemic derangement we have to confront conditions in which the immediate action of alcohol as an antispasmodic might be indicated. Here, however, according to my mind, a line should be sharply drawn. If there is any known agent which above all others sustains the hysterical condition it is alcohol. For this reason, I, for my part, leave it out of the list of remedies altogether, not because I doubt its effect to relieve, but because I am sure that its effect to sustain the evil far outbalances the temporary advantage. There is a stage of alcoholic intoxication, the second, which practically is a form of hysteria, and I know of no precise method of prescribing alcohol that shall not impinge upon that stage and intensify it.

I have, I trust, now given to alcohol all the credit as an antispasmodic that belongs to it. I have given to it a wide range of action; I have not disguised its value; I have not concealed its dangers.

Let me now pass on to consider the mode of administration of alcohol for medicinal purposes.

In my lecture on the Alcohols, published so far back as 1869, in the Medical Times and Gazette, I wrote:—“As yet alcohol, the most commonly summoned of accredited remedies, has never been properly tested as a remedy for human diseases. I mean by this that it has never been tested as alcohol of a given chemical composition, of a given purity, and in given measures. Wines, beers, and spirits are anythings, compounds of alcohols, and compounds of alcohols with ethers and other foreign substances. It is time now, therefore, for the learned to be precise respecting alcohol, and for the learned to learn the positive use of one of their most potent instruments for good or for evil.” In the eleven years that have passed since that was published, I have steadily followed out the practice there suggested, and for five years past I have never prescribed alcohol in any other form than the 830 ethylc alcohol—the ordinary pure, but not quite absolute alcohol of commerce. I have known, therefore, in prescribing alcohol,
for these five years, the precise thing prescribed, which is, I think, what few can say. I have by this means learned the value of dose, as well as of action. If I have wanted any other of the agents that belong to alcoholic beverages,—the bitter of hop, diastase, an ether,—I have added it in the same precise manner, and I most respectfully suggest that this is the only way in which alcohol can be scientifically applied in the treatment of disease. The advantage is all on the side of accuracy.

There is another and more cogent reason for this rule. By following it alcohol is kept in the hands of the prescriber and the chemist. When it has served its purpose it can, like mercury or arsenic, or other dangerous remedy, be withdrawn. Ordered as a common drink, instead of being prescribed, the patients become their own doctors and their own destroyers. It is hard enough, as we have seen, to prescribe alcohol so as to prevent evil from it; to order it without care is to endanger its current utility, and to make the perpetuation of its evils the most imminent of dangers.

An inquiry which springs out of these studies is the possibility of advancing further in the line of discovery towards substitutes for alcohol as an antispasmodic. I have shown that amyl nitrite may well come in for such substitution; and to this may be added ether, ammonia, methyl alcohol, or methylal. The two last-named remedies, when they are perfectly pure, are admirable substitutes. They are rather quicker in action, and the latter, methylal, is more pronounced in its effect as an antispasmodic.

On the mode of administering alcohol by prescription a word may be useful. I prescribe 830 alcohol, adding to it usually a little glycerine; one drachm of glycerine to the half-ounce fluid measure of alcohol and water. For those adults who are not accustomed to alcohol, half a fluid ounce of it in two ounces of water is a good standard dose. That dose will produce a distinct physiological effect. It will quicken the pulse to two thousand beats, and it will cause a preliminary rise of a fourth of a degree of surface temperature. This dose may be repeated every hour for four hours without harm, but not beyond that time with impunity.

For ordinary drinkers of alcohol the dose is small. They will take an ounce, or an ounce and a-half at once and not be seriously influenced, and to them, in emergency, the larger of these doses may not be too considerable. Its repetition must, of course, be considered with great care.

To us, who are engaged in the active work of the temperance reformation, these truths on the medicinal use of alcohol are of vital moment. It is as vain as it is untrue for us to declare to our patients that alcohol cannot relieve them under certain
conditions. If we tell them so, and suggest other plans, they
simply resort to the thing itself, in its worst combinations, and
instead of using it medicinally, they follow up the use of it, with-
out asking our leave, and not knowing when to stop. We, therefore,
lose the benefit of applying it as a remedy, and of stopping the use
of it when it has performed its purpose. Thus we lose influence
in a double sense. To those, again, who are not engaged in our
contest: to those who with cruel apathy treat the temperance
reformation as a sublime joke, and its leaders with scoffing
contempt, these studies are not less vital. Soon it will be
learned, even by them, that the temperance movement has a
root which cannot be drawn, and a development which cannot be
suppressed. Then will come a time when the lay voice will be
heard, standing out against the empirical use of alcohol altogether,
and questions will be put and arguments used that will be as fatal
to the interests of our professional body as all kinds of class
bigotry, pride and fanaticism, ever have been, when they have
ventured to cross swords with advancements the power of
which has been foreseen by all except those who were most
interested in their recognition.

CASES TREATED WITHOUT ALCOHOL.

By J. James Ridge, M.D., B.S.Lond., &c.

There must always be considerable uncertainty as to the credit
due to any particular drug or line of treatment in effecting the
cure of a case of disease. It must always be a matter of conjec-
ture as to what the result would have been if the drug had not
been given, or another line of treatment had been adopted. That
the treatment pursued was the real cause of recovery—that is, that
death would have occurred without it, must always be only more
or less probable, and the degree of this probability will be
very variously estimated by different men, according to their
knowledge, their prepossessions, and their habit of mind. So also,
if death ensue, the way is always open for the remark, "This
case would have ended in recovery under some other treatment."
Certainty can, however, be obtained on one point, if on no other.
If a patient recovers from any disease in the treatment of which
some drug—let us say alcohol—has not been used, it is absolutely
certain that this drug was not essential for recovery. The more
frequently such cases occur, and the more severe their nature, or,
at least, the more such cases resemble those in which alcohol is
Cases treated without Alcohol.

usually thought to be required, so much greater doubt is thrown on the value which may have been previously attributed thereto. It would be foolish to say that alcohol has no physiological influence, and that some of its effects may not be utilised, if we knew just what they were and when they should be used. But it becomes increasingly doubtful, as such recoveries as those to which I have alluded multiply, whether all its power for good—whatever it may be—may not be completely secured in other ways; and, indeed, whether there are not drawbacks attending its employment which may induce us to prefer to dispense with its use altogether.

Those who have seen severe cases recover under their care to whom, at one time, they would have considered it absolutely indispensable to administer some form of alcoholic liquor, perhaps in considerable quantity, cannot fail to be much impressed with a conviction that many other cases which have in time past been treated with alcohol secundem artem, were not really so much benefited thereby (as regards their ultimate recovery) as they were then thought to have been. Since this has been my own experience, I will give some examples of such cases, merely premising that I have no objection to alcohol as a medicinal agent for what it is worth, but am sceptical of its traditional value, and always prefer to use other means when possible.

Case I.—Caries of femur, tibia and patella, disorganisation of knee-joint; amputation of thigh and subsequently at the hip-joint; intercurrent erysipelas: recovery.

D. J. E., aged 6, was admitted into the Enfield Cottage Hospital under my care, in October, 1875, the child of poor parents and badly nourished. Eighteen months previously he had fallen down and injured his knee, and had been unable to walk ever since.

State on admission.—He was considerably emaciated. There was a sinus discharging pus on the inside of the right thigh above the knee. The lower end of the femur was much enlarged, and there was considerable effusion into the knee-joint, with flexion of the knee. The probe passed across and in front of the femur, but no dead bone could be felt. Evening temperature, 102°8°. He was placed on full diet, with extra milk, and was ordered perchloride of iron. Extension was applied by a weight and pulley.

The general symptoms much improved under the diet and rest, but the local symptoms remained the same. It was, therefore decided to excise the joint.

October 21st.—Chloroform having been administered, I first made an incision on the inner side of the femur through the sinus down to the bone, which was found to be separated from the periosteum for about two-and-a-half inches from the tip of the
condyle and carious, so that the handle of the scalpel could be passed easily into the cancellous texture. The incision was then extended in front of the joint, which was found to be quite disorganised; there was a carious spot in the inner tuberosity of the tibia, and another in the patella. The extent of disease in the femur being so great it was decided to amputate the thigh at once at the junction of the middle and lower thirds of the femur. This was accordingly done by the flap operation. But little blood was lost, Esmarch's bandage having been employed. The wound was well washed with carbolic acid lotion, closed with sutures, and dressed with carbolic oil.

October 25th (four days after operation).—Temperature, 9 a.m., 97°8; 9 p.m., 98°4. The wound had healed by first intention except where the ligature on the femoral artery was situated and at one or two superficial points. The ligature came away on the fifteenth day. At the end of the first fortnight the temperature began to rise, and on the twenty-third day an abscess was clearly forming at the under part of the thigh, which was opened on the twenty-fifth day.

There was a sinus left from this abscess, and also at the original wound, and although these were continually syringed with carbolic lotion, they did not close, and discharged slightly. On February 11th the wound was re-opened under chloroform, and a piece of necrosed bone removed from the femur.

After this he improved considerably, but ten days later (Feb. 21st) erysipelas made its appearance in the left cheek, and spread to the forehead, and backwards over the scalp, the attack lasting a week. The temperatures were as follows:—

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<th>February 20</th>
<th>Morning</th>
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<td>22</td>
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<td>28</td>
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The stump was not affected during this attack. He was delirious on the evening of the 23rd and the two following nights.

April 10th.—The note runs:—The wounds not having healed, and the probe revealing the presence of some dead bone, it was opened under chloroform, and a further carious portion of the stump removed.

June 2nd.—After the last operation the boy improved for a time; but the wound at the end of the stump never closed. Latterly for some weeks the temperature oscillated between 99°
and 100°. More necrosed bone could be felt, and it was therefore decided to make a more extensive investigation. The wound was therefore thoroughly opened, and, after the removal of about one inch of necrosed bone it was found that the periosteum was separated, and the bone necrosed for at least another inch. As it seemed probable that if this were removed the same process would creep further up the bone, it was resolved to amputate at the hip-joint at once. This was done; four arteries were tied, the wound washed with carbolic lotion and dressed with carbolic oil, as before. The operation was borne well, and immediately afterwards the temperature was 97.9°, and the pulse 136. Some hot milk was given, and a hot bottle applied to the remaining foot.

June 3rd.—Slept four hours after the operation. Sick at twelve hours and again at twenty-four hours after: has taken nourishment well; colour better.

June 4th.—Restless last night and sick twice: takes food well: milk, beef-tea, and two eggs a-day.

June 5th.—Passed a good night some sanious discharge from the wound.

June 6th.—Sick once yesterday and again this morning. Slept well. Tongue cleaner.

June 7th.—Slept well: tongue much cleaner: sick once. Thin pus from wound, which was dressed and injected with carbolic lotion (1 to 50).

June 8th.—Sickness stopped; is cheerful. External wound nearly healed (seventh day), slight discharge from interior.

June 14th.—A small collection of pus let out of the acetabulum by a director. Going on well; two days later the last ligature came away, and he made an uninterrupted improvement. He recovered strength and flesh every week, and was discharged in excellent health on August 27th, after a residence of 318 days.

Remarks.—It must be admitted, I think, that the strain on this lad’s strength was one of considerable severity. Nevertheless his usual appearance, and the absence of severe constitutional disturbance would have deceived a casual observer. I cannot but feel that his diet of milk and simple food, with the absence of alcohol, contributed largely to the maintenance of vital power, and enabled him to endure the constant drain on his resources, and to undergo so well the double amputation to which he was subjected. At any rate, it is clear that alcohol was totally unnecessary in a case in which, I venture to say, nine hundred and ninety-nine medical men out of a thousand would have ordered it at one time or other. It is a singular coincidence, however, in my experience, that it is very unusual to find men who will acknowledge that alcohol would have been suitable for cases which are known to have recovered without it, or that they would have
given it to them. I may add that the attack of erysipelas was traced to the admission of a patient with abscess and sloughing in the hand, which was therefore suspected to have had an erysipelatous origin.

**Case II.—Thecal abscess: suppuration in hand and wrist: disorganisation of wrist joint: amputation of forearm; recovery.**

G. N., aged 66, was admitted into the Enfield Cottage Hospital on January 31st, 1880. He was a farm labourer of intemperate habits. About a month previously the middle finger of the left hand became inflamed from an unknown cause, and suppurated. He neglected it until the inflammation and suppuration had spread to the palm of the hand (which was very hard and horny from his daily work) and to the wrist. A medical man made several incisions. On admission the hand was very much swollen and inflamed, the inflammation extending half way up the forearm. There was discharge from incisions both at the back and front of the hand, and over the lower part of the ulna. He was delirious at night, and remained in a half-stupid condition during the day, although he did slowly what he was told, and answered questions.

*February 10th.*—Has improved slightly. There is less inflammation about the hand and arm, but still much discharge. He is less feverish, and takes his food better. Milk diet.

*February 21st.*—His general condition has improved, but the hand and wrist still continue *in statu quo*. The joint is quite disorganised, grating on movement, from exposed bone; two or three of the metacarpal bones are also necrosed. It was therefore decided to amputate the hand and wrist. I performed this operation under chloroform, making a circular incision at the middle of the forearm. The wound was washed with carbolic lotion, and dressed with carbolic oil.

*February 24th.*—The wound has healed by first intention, with the exception of the point at which the ligatures are situated. His temperature has been normal since the first evening after the operation, when it was 101°. His appetite and general health have much improved.

The subsequent progress was excellent, and he rapidly regained health and strength. A small abscess formed at one corner of the wound about a month later, but this soon healed, and he was discharged on April 20th, after seventy days' residence.

**Remarks.—** This man's previous habits were most unsatisfactory, yet nothing but good resulted from sudden abstinence, even in his weak and unhealthy condition, and at his advanced age. The operation could not have been better borne, and the result was most satisfactory.
CASE III.—Pleurisy and pneumonia: recovery.

C. H., female, aged 52, admitted into the Cottage Hospital June 8th, 1877—a tall, dark, thin woman, with a half-starved appearance; herself and husband both addicted to drinking, and very poor. She had been attacked four days previously with shivering, pain under left breast, hacking cough, and shortness of breath. On admission she was in a very prostrate condition. The breath was hurried, and the cough frequent and causing pain in the left side; some thick and frothy white mucus expectorated with difficulty. Friction sound below and to left of left breast. Evening temperature, 102.2°. Ordered Acid sulphuric dil: m. xv.; Tr: Camph: co: m. xxx.; Aq: Chloroformi, two drachms; Aqae, to one ounce; every four hours. Barley-water, oatmeal, beef-tea, milk ad libitum, and one egg.

June 12th.—There was considerable improvement in the general symptoms; cough much less troublesome; breath less short; tongue moister; sleeps better; evening temperature, 99.6°. The friction sound was heard over a larger area, and there was some dulness and increased vocal resonance on the left side, and round to the base of the left lung, with crepitation.

June 13th.—Temperature, m. 99.2°; e. 98.4°. Coughs little. Tongue dry; pulse irregular. In consequence of this irregularity ten minims of tincture of digitalis were added to the mixture.

On the 14th she was not so well. The pulse had become regular, but was very rapid. The digitalis was omitted. The temperature rose again in the evening to 99°.

June 15th.—Has been slightly delirious in the night. Temperature, m. 98.6°; e. 99.8°. The dulness and increased vocal resonance remain the same as before; the phlegm was slightly tinged with blood.

June 16th.—Temperature, m. 99.6°; e. 100°.

June 17th.—Is better this morning; temperature, 98.4°. From this point there was uninterrupted convalescence, with abatement of all the symptoms, and gradual disappearance of the dulness and friction. Her strength gradually returned, and she was discharged cured on July 20th, after forty-two days' residence.

This case was specially satisfactory on account of the previous habits and bad state of general health, and ill-nourished condition upon which the pleurisy supervened. It was just one of those cases which would be called asthenic, and considered by many to require alcohol, which the event proved unnecessary.

CASE III.—Typhoid fever: extensive bedsorese: recovery.

This case must be described briefly. T. J. H., aged 19, a labourer, admitted March 29th, 1879. He had been taken ill a week previously, with headache, shivering, and fever, and had been
compelled to take to his bed on the third day. On admission he was unconscious, with subsultus tendinum and muttering delirium, dorsal decubitus, and no control over excretions, and these symptoms lasted, with little variation, a whole month. He was able to take milk, and did so whenever it was offered to him; he lived on this four weeks, with an occasional egg and a little beef-tea. The rose spots of typhoid were well marked, and there were tympanites, abdominal tenderness and abundant diarrhea, but no hæmorrhage. The temperature was 105° on the evening of the day of admission, and varied between 102° and 104° during the first week (second of disease), between 101° and 103° during the second week, between 99° and 102° during the third week, and irregularly between 98° and 101° during the fourth week.

Bedsores began to form during the first week, and, notwithstanding the use of a water bed and every precaution, extended, during this period, until there were three of the size of saucers over the sacrum and each hip.

The typhoid symptoms abated during the first week, and the fever assumed a hectic type from the presence of these sloughs, oscillating between a morning temperature of from 98° to 99°, and an evening one of from 101° to 102° for five weeks more. During three weeks more the morning temperature was normal, and that in the evening between 99° and 100°. During this time the sloughs were separating, and the wounds slowly filling up, his strength improving.

It seems to me impossible that any case, capable of recovery at all, could be worse than this lad was. The furious onset of the disease and its low type are sufficient proofs of its severity, and the event shows conclusively that these circumstances do not necessarily lead to a fatal result in the absence of alcohol. He was treated throughout the typhoid state with diluted sulphuric acid, tincture of opium, and chloroform-water, and subsequently with steel and cod liver oil.

[In giving publicity to the preceding paper we have pleasure in calling attention to a little volume by Dr. Ridge,—"The Non-Alcoholic Home Treatment of Disease"—which has just been issued by our publishers. Although intended for domestic use, it contains much valuable information and advice that may prove suggestive to our professional readers.]
ON THE POWER MEDICAL MEN POSSESS OF AIDING IN TEMPERANCE REFORM.*

By G. Blacker Morgan, L.R.C.S.I., Bishop Wearmouth.

I am quite aware that in speaking upon this subject I am treading on ground where I shall have to pick my steps very carefully lest I do violence to some sensibilities. I know that so many hold the view that we should not go out of our way to interfere with those who ought to be quite capable of minding their own business; and that if we take care of ourselves, and each individually keeps within the bounds of a strict moderation, our duty will have been sufficiently discharged, and that our responsibility extends no further. In other words, if the hands which robbed and wounded the wayfarer were not ours no blame can attach to us if we leave him helpless and bleeding, and "pass by on the other side." Such is not my view. And so it comes that I venture to speak upon this matter in our meeting of to-day.

I would then propose to answer three questions—

(1) Is temperance reform needed?
(2) And, if so, what direction should it take? And
(3) What ought to be the position of the medical profession with regard to it?

What thoughtful man amongst us cannot answer the first of these questions for himself?

If young, and just entering the profession, can he not remember many a class-fellow who has fallen through drink? Can he not recall, even from his short experience, scenes and incidents which he would gladly forget? Or perhaps bitter experience can tell him how drink had lost him opportunity, or robbed him of success. It is true that the deceptive mask of good fellowship is put upon it, and with it on, drink comes introduced, as by Iago, as a "Good familiar creature," and men are but two willing to forget that its familiarity has brought, and will again bring, them into contempt. From the middle-aged this question must receive even a more emphatic answer. How many victims have they seen to fall? How many disappointed aspirants to success have they known who owed their disappointment to one and the same cause? Into how many unhappy houses have they found admission, and have learnt that the heart-burning and quarrelling, the bitter words spoken by those who ought to have been knit together as one, and the cruel neglect which kept asunder those who might have been in heart, as they were in

* A Paper read before the North of England Branch of the British Medical Association at the Autumnal Meeting, October 5th, 1880, by G. Blacker Morgan, L.R.C.S.I., President of the Branch.
name, bound to each other, had been due to drink! Time, which in passing has touched with silver some of our heads, and robbed our step of lightness, has also given to us an experience which ought to make us earnest and thoughtful men. To those of us whose practice is large and varied how much of the misery of drink is revealed! Do we not daily see instances of its awful blight? I take at random one or two from my own experience within the last few weeks. A gentleman and his wife are moving in good society. The lady is a secret drinker. The husband is earnestly spoken to by his doctor, who discovers the fact, and in his first surprise and horror he becomes himself an abstainer, and forbids the use of wine in his house. The effect is marvellous. The lady’s health amends, her appearance improves, her breath no longer smells like an offensive sewer, and as health returns the unhappiness of that home begins to cease. But for how long? The effort of self-denial is too much for the man, he again must have his accustomed stimulus, and presently the bloated face, the fetid breath, the bloody vomit, all return, and the lady is again helplessly a victim in the fatal clutches of the destroyer. Or take another case: a delicate girl is taken ill and is found to have a hernia strangulated. The sister and the mother have a business to attend to and gladly accept the offer of a female friend and neighbour to watch the patient during the night after the operation. All is going on well, the sick-room is supplied with everything that can be wanted, amongst the rest with a bottle of brandy, and all retire save her who is to watch. In the cold twilight of the early morning the sister is aroused by a faint calling at her door, and finds the patient swooning on the floor; and by-and-by she learns that the wretched woman who had taken charge had drunk the brandy and flung herself across the patient’s bed, and in the darkness, for the light was gone, the patient felt this horrid woman fall upon her. She could not make her hear, she could not make her rise; and to escape her drunken vomit she struggled from the bed, and fainted as she reached her sister’s door. I felt a cold chill creeping over me as I heard this tale next day, and as my patient told it in feeble and often interrupted words I saw that the end was near. She died, and most certainly her death lies at the door of that unhappy woman who could not, even in a case like this, deny her craving for this “good familiar creature.” But it needs not to tell of facts like these; you know them, gentlemen, as do I. You know why you cannot trust your servant—you know why you fear for your son—you know the wretched anxiety which makes you dread, as in a nightmare, that your daughter or your wife should learn to drink. And you do so because around you every day—in your visits—in those who visit you—among your
friends, or in the streets—in newspapers, or in glimpses through the gin-shop's opened door, you see this universal blight, not only destroying all that is fair, and clean, and lovely, but loved and cherished by its victims who cannot shake themselves free from its fatal lures.

Then, is not Temperance reform needed? And, if needed, what direction should it take? My answer would be that reform should be sought by every means. Legislation should be obtained for restricting, and forbidding where necessary, the sale of drinks; but I know as well as anyone can tell me, that Legislation alone will not effect a cure, we cannot make men sober by Act of Parliament, but it will help; while men are being taught the principles of honesty, it is as well to have your hall-door locked at night! Education, too, will do much both by giving the mind occupation and by teaching better things; but we must never forget that amongst those whose ruin drink has wrought are such names as shine most brightly in the firmament of literature.

Edgar Allan Poe, with all his genius and all his remarkable beauty and precocious wit, reduced, we are told, himself and a gentle patient wife to utter destitution and her to death, by drunkenness; and afterwards, when engaged to be married to "one of the most brilliant women in England," had his engagement broken, and himself handed over to the police for his disgraceful conduct when drunk, and at the early age of thirty-nine he died a drunkard's death in a common hospital. Or take the case of Porson, the great Cambridge scholar, the accomplished Grecian, and scarcely less accomplished mathematician. Was all his scholarship sufficient to save him from falling into the lowest depths of debauchery and wileness? and though at his death the fellows of his college (Trinity), bore his pall in recognition of his great powers, in his latter years he was refused admission to their homes because drink had made him unfit to associate with Christians or with gentlemen. Or, to take another instance from the many victims of drink, what caused the death of the great author of The Rivals, The Critic, The School for Scandal? Why was Richard Brinsley Sheridan deserted and alone when he sank into a drunkard's grave after standing upon the heights of literary and social fame, and being the successful orator, the brilliant author, the confidential friend of the greatest, even of royalty itself? Was education to him a safeguard against this "good familiar creature" which lured him to his ruin, and in whose embrace he sank into the abyss?

Personal effort, and personal self-denial on the part of the sober, are certainly the most effectual means of staying drunkenness, and this leads me to the third question, "What ought to be the position of our profession in regard to Temperance reform?"
None see so much of the evils of drink as do we, both in the persons of our patients and in homes which we enter. The screen which hides so much from the world is thrown down for us, and we are necessarily let into the confidence of our patients. The black eye which others are told was caused by walking against an open door in the dark we know is the effect of the blow which a brutalised husband struck when a once-loved wife ventured to remonstrate with him for returning home so late. The "congestion of the brain from overwork" which the master of the house is suffering from we know to be alcoholic poisoning in the phrase popular known as delirium tremens; and if we possess so much more of the confidence of the public have we not a proportionate power? Surely we have—a power which no others can wield—and is not a grave responsibility resting upon us if we use not this power aright? It has been said that no one who has once suffered from delirium tremens was ever reformed, but this is not so. However difficult it may be to refrain from drink, it is possible, if the bold and decided course be taken of giving up the use of alcohol entirely. It is no use trying to help an unhappy wretch out of the pit while you prescribe for him strict moderation, "just a single glass of sherry, or a couple of glasses of claret." No, if he is to be saved there must be sudden, complete, and permanent giving up of every drop of alcohol, no matter in what shape it is given. And here I think is one of the many places where our power might be advantageously used. It may require a little courage to be firm with a valuable patient and give him unpalatable advice, but it is our duty. And if we act from this motive we shall never feel embarrassment. Let us never hesitate to be decided in forbidding the use of alcohol to anyone who has suffered from its abuse.

Again, do we not too often prescribe wine or malt liquor in a loose sort of way?

A lady came to me last week about her son. He is a youth of nineteen, and has just settled in London to learn his business. He had been a little out of sorts, and consulted somebody in London, and what was the prescription? "Drink three glasses of good port wine every day, as your blood is poor and needs it." The mother came to me saying that if it were really necessary his father and she would wish the lad to take this wine, but was it necessary? was it a wise direction to give a young man living alone in London, and with nothing to counteract the taste which so soon would be acquired?

Do we not too often err in this matter? Are we as careful as we ought to be in prescribing what after all is a potent drug? I fear not. The medicine is a convenient one, it is pleasant to the taste, the prescription is acceptable to the patient, and very easily
given, and we too often recklessly prescribe it. Should we consider it right to tell a patient to take a grain of opium whenever he felt pain or was sleepless? We know this would be injurious, and if the practice were followed the numbers who are victims to the pernicious habit of opium eating would be very largely increased, and it is the same with alcohol; sometimes in the treatment of disease it is indicated very plainly, and in some cases it, and it only, appears to have the effect we desire; but surely we ought not to tell our patient to dose himself, and surely we ought to retain in our hands the power to diminish or cease the medicine, and always bear in mind how great are the evils which this same alcohol is capable of causing, and be very chary of creating a taste for it which by-and-by will become an insatiable appetite which neither the victim nor we can satisfy or destroy. This is especially to be thought of in the case of those nervous and hysterical women whom we all have had experience of. Nothing relieves these cases so well as alcohol, but nothing renders their symptoms so incurable, and no class of patient becomes more easily demoralised under its use, and especially if the stimulant is combined with morphia or chloral.

These are a few of the means by which as a profession we can and ought to aid in Temperance reform.

There are many others, and among them personal abstinence; but into these I cannot enter save to say that with regard to personal abstinence it is a question for each man to decide for himself. Some there are whose health will not bear it, others who do not feel themselves called upon to make the sacrifice, and others who have not the power to deny themselves even in so small a matter as this. To these last I would only say, Make the effort and you will find it easier than you think; and you will find also that self-denial has a pleasure of its own, more endur- and more substantial than indulgence can ever give.

NON-ALCOHOLIC SUBSTITUTES FOR INTOXICATING BEVERAGES.

By E. McDowell Cosgrave, M.D., Dublin.

The Temperance movement went on steadily increasing for some years without much visible result. Some of the workers were discouraged; but the majority kept steadily on, feeling that they were right, and knowing that harvest would surely follow seedtime. With outsiders it was different; the vast body of
those who never originate ideas, but who fall in when success has followed the burden and the heat of the day, shook their heads, and, with the perception and taste of the chorus to a Greek play, exclaimed that the work was useless and without result; that, in spite of all the labour expended, in spite of meetings, speeches, tracts, and apparent conversions, just as much drink was consumed, just as much crime was committed, and that the gaols, poorhouses, hospitals, and lunatic asylums were just as full.

Now results are visible; many who began as members of Bands of Hope have grown up and remained true to their pledges. The revenue from drink has fallen off. That public opinion (with Parliament in its train) that thinks it steers, but whose only resemblance to a rudder is that it follows behind, has veered round. Teetotalers are allowed to be in their sober senses, and everywhere the cry goes up against “excess in drink.”

This being the case, a new want has sprung up. A large and continually increasing number of people, instead of taking the beverages their representatives in the last generation took, require drinks free from alcohol.

Drinks free from alcohol are of course no novelty. God created water as the natural and harmless drink, and no matter what country is discovered, no matter what its animal and vegetable fauna, water is always found. Milk also is plentifully supplied in nature. Still the fact remains that for long alcoholic fluids have been looked upon as ordinary drinks, and there has been in many places a difficulty in getting anything else.

In our own houses we have always been more or less independent; but anywhere outside their walls we have had to depend upon the mercies (often anything but tender) of others. Travellers have, therefore, been until lately great sufferers: no matter where they were, whether at a roadside inn, in a great city, or even at a railway station, they could always get intoxicating drinks, but as for anything else it was hardly, if at all, to be got. To ask for a drink of water was to forget, in the pursuit of individual good, the “good of the house,” and could only result in the production of a glass of diluted sewage drawn from a surface well. Ask for infusion of tea, and you would get a decoction of some alien shrub, charged for at sixpence or a shilling a cup.

The railway traveller was especially to be pitied. In summer the heat and dust might make the mouth dry and parched, in winter cold and want of exercise might benumb the hands and feet. In either case something to drink would be required, in summer something to cool, in winter something to warm. As a rule sufficient pauses were made to enable the weary traveller to
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get refreshment, but there was no variety in the refreshment. Whether in summer or in winter, whether suffering from heat or cold, alcohol in some form or other was the only thing to be obtained. The sale of alcohol was so profitable that it would have been acting contrary to their own interests had the purveyors of refreshments introduced non-intoxicants. Alcoholic drinks increased thirst, and so, from a trade point of view, were better than thirst-quenchers.

But now a change has occurred. People are daily awakening to the fact that alcoholic stimulants are as a rule not only useless but absolutely injurious, and so more and more are resolving to do without them. There is therefore a demand for something else, and according to the almost invariable rule in political economy the supply will eventually equal the demand.

Now it is this word “eventually” which explains the reason for which this paper is written. The process may be sure, but it is certainly slow, and much injury may be caused by the delay. Assuredly many who would willingly abstain from intoxicants take them simply from the difficulty of getting any substitute.

This, then, is my object. The reiterated demand will surely cause a supply to be forthcoming, but in the meantime many will not take the trouble to repeat the demand, but will instead fall back upon the easily obtained alcoholic beverages.

Does not this give us a direction in which we can work, and that, too, without taking up our time or interfering with our ordinary pursuits, and without coming forward too openly as partizans of teetotalism? This last may seem a cowardly consideration, but most of us know the practical importance it has for medical men. I wish to point out the advantages which would arise could we make the supply equal to, and if possible slightly in advance of, the demand, and to suggest some of the means by which we may attain this end.

The number of non-intoxicating drinks has greatly increased of late. Nearly every country pays tribute in natural mineral waters as well as in artificial wines. Aërated waters have been multiplied, and we even read of “wines” and “beers” which are warranted free from alcohol.

Still more might be done in this way; the use of natural and aërated waters might be more popularised, but more variety is wanted. Zoedone has filled up one want, and can be given in many cases where nothing but a glass of wine would have done before. But there are many wants which are still unsupplied.

* Ale is taken for its bitterness, and stout for the feeding properties of the extract of malt it contains. Why should we not have non-alcoholic substitutes for these? An aërated water rendered bitter by the addition of gentian calumba, or perhaps better still
by hops, would be easily and cheaply made, and would rapidly become a favourite with the public. The difficulty is to persuade a manufacturer to undertake the production of even such a simple novelty, but this difficulty can be best overcome by medical men who can explain the need there is for such a beverage, and promise to recommend it when made. A malt extract, made up not as a medicine but as a pleasant drink would also supply a want.

But even with the drinks at our command we might accomplish a great deal of good not only by recommending them more, but also by using our influence to increase the number of places where they may be bought, and to reduce the price at which they are sold. Although at present in large towns, and even in many country places, light drinks can be obtained far more easily than formerly, they cannot be got nearly as easily or as cheaply as they ought, and in point of convenience and apparent economy they have not yet entirely supplanted beer.

A great deal may be accomplished by assisting societies whose object is to encourage the spread of coffee-houses, barrows, &c., but much can be done in private by bringing to bear that influence which undoubtedly we possess.

There are many people who would sell light drinks if a little pressure were brought to bear upon them. Others would sell at a smaller profit if once convinced that it was their interest to do so.

Some time ago a man started a coffee-barrow, and in the early morning, when men were going to their work, used to stand before a corner public-house. After a time he got customers, many being drawn from the public. The publican was indignant, and one morning strongly advised the barrow-man to move on. On the request being scouted a free fight ensued, the coffee man driving his opponent back into the house, and remaining victor of the roadway. In the long run, however, the publican vanquished his opponent by also selling coffee in the mornings. The warmth of the house, and the chance of a seat, drew the customers back from the stall. But although the barrow-man was defeated the good he did remained after him, for though he has given up his trade the publican still sells coffee. The supply originated a demand, and the demand continued so strong that the supply could not be withdrawn.

Once persuade publicans of this, that the only way to save themselves from being injured by the spread of temperance and by the consequent lessening of customers is to add to their trade and endeavour to supply abstainers also, and immediately the opportunities of getting harmless drinks will be more than doubled. The evil effects of treating will also be greatly lessened
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as soon as it is possible to get non-intoxicants in the same places and as cheaply as beer or spirits.

Another direction in which it would be well to bring pressure to bear is with the directors of railway companies. We ought to be able to get tea, coffee, lemonade, milk, &c., at fair prices. On too many lines the prices charged for such simple refreshments are far too high, and the quality just as decidedly too low. There is also a great delay in getting such things, and when the train only stops for a few minutes the beer-drinkers are often satisfied before the tea-drinkers are supplied; and the guard inquires, “Any more for the train?” before the temperature of the tea is well reduced to tasting point.

On Sundays the absence of non-alcoholic drinks is often a source of harm. As a rule, commons and other places open to the public on Sundays are surrounded with public-houses, and absolute thirst may drive people to them who would never have gone had they an alternative. We owe it to those who have so little variety in their lives that when they do wander from their homes in search of fresh air, they shall not be tempted without having an antidote at hand in the shape of a temperance stall. As long as the public-house is open to receive them they ought, at least, to have a choice.

But of all ways for counteracting the temptations of drink, the most important is to lessen the prices so often charged for harmless refreshments. Until lately an ice could hardly be had for less than sixpence, but this year in many places they can be had for twopence, fourpence, or sixpence, according to quantity, the quality remaining the same. Lemonade can also occasionally—but only occasionally—be got reasonably, too many shopkeepers preferring to charge sixpence for what others can sell at a profit for twopence. A large and good cup of coffee can be sold at a small profit for a penny, but yet sixpence is too often charged for it also. The coffee-houses are showing up the extortion of this, and the co-operative stores are proving that cheapness and goodness are not antagonistic. One store in especial is setting a good example in selling a small cup of delicious café au lait for twopence.

Shopkeepers naturally object to ask less than people are willing to give. If we wish to do any good we must demand to be supplied at a fair rate, and persist in the demand until our object is attained. By this means, and by pointing out how reduced prices will increase the demand, and by sending as many as we can to those who do sell cheaply, we may accomplish much good.

The diffusion of a little useful knowledge on the subject of filters might also do good. People may be divided roughly into
two classes, those who drink any water they come across in blind confidence, provided the taste and smell be not absolutely offensive, and those who distrust all water, no matter what its source. A little instruction as to the impurities of water and the means of correcting them would both check over-confidence and remove unnecessary fear.

Onemore point I would mention—caution in prescribing alcohol. I merely mention this, as in a matter between a medical man and his patients interference is impertinent. But I hope that the following thread-bare, but none the less true, considerations will be allowed weight:—Might not non-alcoholic stimulants be oftener used than they are at present? When ordering alcoholic stimulants should not the amount of alcohol they contain be carefully considered? Should not the possibility of giving a solution of absolute alcohol be always entertained? Should not a strict limit be put upon the quantity and the time in which and for which stimulants are prescribed?

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**Proceedings of the British Medical Temperance Association.**

**Meeting at Bristol.**

A special meeting of medical men was held in Bristol on October 13th, 1885, convened by Drs. Challacombe, Greenly, Stewart, and Tivy, members of the Association, residing in Bristol. The chair was taken by F. Brittan, Esq., M.D., B.A., consulting physician of the Bristol Royal Infirmary, and about forty medical men attended. Dr. J. J. Ridge, as a deputation from the Association, read a paper on the subject—"Has not the time arrived for the Medical Profession to give the public a Scientific Opinion with regard to the value of Alcoholic Drinks as Beverages?" The conclusions he urged were:

1. That alcoholic liquors are in no sense necessary to healthy life.
2. That they are of no importance as food to healthy people.
3. That they are utterly unable to warm the body, and are dangerous during exposure to severe cold.
4. That they are very injurious when hard and continuous work has to be performed.
5. That alcoholic liquors are specially injurious to children.
6. That they increase the liability to disease, and shorten life.
7. That it is impossible to say what quantity can be taken with impunity, and therefore the less taken the better.

An animated discussion followed, lasting more than two hours, in which Dr. Long Fox, Dr. Shingleton Smith, Dr. Thompson, Mr. Barrett, Dr. Steele, Mr. Griffiths, Mr. Metford, Mr. Nelson Dobson, Dr. Aust Lawrence, Mr. Markham Skerritt, Dr. Stewart, Dr. Clark, Dr. H. Grace, Mr. Ewens, Mr. Cross, Mr. S. H. Swayne, Dr. Brittan, and Dr. Ridge took part.
QUARTERLY MEETING.

The Quarterly General Meeting of the Association was held in the rooms of the Medical Society of London, on Tuesday, November 16th, 1880, at 4 p.m. Dr. Richardson presided. The minutes of the previous meeting were read and confirmed. Dr. Ridge exhibited the various ingredients supplied to publicans with which gin and other spirits are flavoured and adulterated, and he also showed "The Mixing Book," printed for the use of "the trade," and read therefrom various directions for flavouring and otherwise altering gin and other spirits to suit the local public taste.

Dr. Kerr did not think that adulteration was now often practised. Mr. Winter Blyth said, that as far as his experience went it confirmed this view. He had never found any adulterant in gin except water. Phenol naphthaline changed colour both with acids and alkalies, and he had never seen it do so when added to gin, and he therefore concluded that oil of vitriol and caustic potash were neither now added, though they may have been before the passage of the Adulterations Act. A Visirroa stated that he knew a merchant who had told him he sold large quantities of fusel oil to traders in spirits.

Dr. C. R. Drysdale then exhibited a new form of sphygmograph, after which Dr. Richardson read a paper on "Alcohol as an Antispasmodic—a Clinical Survey." A discussion followed the reading of the paper.

Dr. Stewart said that accuracy was very important, and the loose method of administering alcohol was much to be condemned. But he had found some patients resenting the use of a mixture of alcohol and water, preferring brandy and other spirits. He thought that chemists should keep a palatable alcoholic mixture which should only be sent out in medicine bottles.

Dr. Norman Kerr expressed his gratitude to Dr. Richardson for his admirable paper, although a wider range had been claimed for alcohol as an antispasmodic than he had been accustomed to give it. He had observed in Glasgow that if alcohol was given previously to the administration of chloroform narcosis supervened more rapidly. Its effect as an antispasmodic was soon lost by frequent repetition, as he had observed in his own case, when suffering from hay asthma, a soothing effect only lasted for three doses, and then had to be increased. He found that in some cases brandy was retained when ethyllic alcohol was rejected. He hoped that the paper just read would disabuse the public mind of the error they were in as to the practice of total abstaining medical men with regard to the administration of alcohol.

Dr. C. R. Drysdale did not think he should have prescribed alcohol in quite so many cases, and found that a great number whom he had thought at one time required alcohol recovered without it, and therefore the onus pro bandi lay with those who gave it, and we should give as little as possible.

Dr. G. B. Clark observed that, in his opinion, when alcohol was given with nitrite of amyl, the latter had the greater effect. He thought that hydrothapeutic treatment, such as the vapour bath, would relax the vessels very effectually. The strength of different brandies varied greatly, and therefore their effect was uncertain.

Mr. Paramore having made a few remarks, Dr. Richardson replied, and said we ought to stand firm in this matter, and give a definite quantity of alcohol for a definite object: patients were in the habit of increasing the dose of wine or spirits, but would not do so with alcohol in a mixture.

The meeting closed with a vote of thanks to Dr. Richardson.
What should we Drink?

NOTICES TO MEMBERS.

Members and Associates who have not paid their subscriptions for 1880-1 are respectfully informed that these became due on May 1st, 1880, and it will save much trouble if they will be kind enough to send them to the Honorary Secretary without further notice.

The next Quarterly General Meeting will be held in February, in the Medical Society’s Rooms, when a Paper will be read by Dr. G. B. Clark, on “Ava—the Polynesian Intoxicant.” Further particulars will be supplied by circular.

NEW MEMBERS.

Dr. Little, Ben Rhydding. | Dr. Steele, Clifton.

NEW ASSOCIATE.

A. E. Carte, Esq. . . . . Dublin.

December, 1880.

J. J. RIDGE, M.D., Hon. Sec.

Miscellaneous Communications.

WHAT SHOULD WE DRINK?*

By Dr. J. James Ridge.

The Temperance Reformation differs from most other reformatons, in that it is entirely negative. There is nothing for people to do, they only have “not to do” something. Total abstinence protests against doing something, but does not even undo it. It simply keeps a man in his natural state as far as alcohol is concerned. Nevertheless it seems a very desperate plunge to many who are asked to take it.

If they have to abandon that which they have been accustomed to regard as the chief source of daily strength, the assuager of pain and sorrow, the resort for genial comfort, cheerfulness, and good-fellowship, and the mainstay of life, we must be prepared to answer their piteous appeals for something to fill the aching void, until they shall have acquired confidence and become accustomed to the novelty of the situation.

Hence the question, What shall we drink? has two significations: the first, What is the best thing for us to drink? and the second, What may we take as a substitute for alcoholic liquors?

In any inquiry we may make as to what we ought to drink we must not overlook the fact that there is one radical difference between water and every other fluid, namely, that whether we drink other things or not, we must drink water if we would continue to live. This arises from two facts: first, that 72 per cent. of the entire body is nothing but water, so that all the dry solid particles of

* A Lecture delivered in the Memorial Hall, London, on 25th November, 1880, under the auspices of the British Women’s Temperance Association.
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a man weighing 140 lbs. would weigh about 40 lbs.; and, second, that there is no solvent in nature which can approach water in its power to dissolve, and its adaptability to the purposes of life. The most strenuous opponents of total abstinence drink large quantities of water; in fact, as a rule, they drink a good deal more water than total abstainers.

It has been calculated that the quantity of water required in twenty-four hours, under ordinary circumstances, by a person weighing ten stones, is from seventy to ninety ounces. This is not all taken in a fluid form; the various kinds of solid food contain a great deal; but from two to four pints may be taken in a liquid form. Many, however, take less than this, and under great exertion in hot situations some would take more.

A considerable quantity of water, then, is a sine qua non for existence, and the only question which remains to be decided is, In what form shall this water be taken—pure or mixed, hot or cold? There cannot be a doubt that water, pure and simple, is sufficient as beverage for every purpose of life, and that every addition thereto is either superfluous or noxious.

It should be remembered, too, that water is only capable of dissolving a certain amount, and if some solid matter of one kind is already dissolved in it, it cannot take up so much of any other as if it were pure. Thus, a pint of beer will not dissolve so much digested starch or meat as a pint of water.

There are circumstances, however, in which pure water is not so suitable as water which contains some solid matter. For instance, it has been found by experience that labourers performing very hard work cannot drink the large quantity of water required by them in its natural state, or, at least some water, without suffering from diarrhoea, but this can be quite prevented by the addition of oatmeal. The cause of this is doubtful, but the fact remains.

There are many people, however, afraid of drinking water without an equally good reason. They have a wonderful dread of a mysterious quality which they call “rawness.”

There are others who profess to dislike water, and to whom the much-vaunted “draught from the crystal spring” is the reverse of attractive. This aversion, when genuine, must be considered as without doubt a perversion of taste. For if there is one rule of universal application it is this, that all animals revel by nature in love for pure cold water as a beverage. It is a natural instinct, the body requires the water, and the water is suited and agreeable to the body. Children, especially when young and with unperverted tastes, will always be found to enjoy cold water; some of my own children will ask for it at breakfast and tea in preference to anything else, and there is nothing so suitable for them. One might almost say that the capacity for enjoying a draught of cold water is a test of a natural and healthy state of body and mind in the region of appetite.

Water, then, must be proclaimed to be the only necessary and the most healthful drink for man.

But there is water and water, and, therefore, after deciding to partake of Nature’s beverage many questions still arise as to the kind and the condition, which may detain us a short time.

Water exists in the various forms of distilled water, rain water, well water, river water, mineral spring water, sea water.

Rain water is, of course, the primary source of all potable water. Drawn from the ocean in Nature’s distillery, and thereby separated from every impurity, it falls on sea and shore. In its contact with the air it absorbs a large amount of all the gases and vapours which may be present therein. Hence rain which falls upon a crowded city contains particles of carbon and gases, which are absent on the tops of the mountains. These gases are principally sulphurous acid and ammonia, and are soon washed away. Hence rain which falls at the beginning of a continued downpour will so cleanse the air that the latter portion will be practically
pure. So, also, rain which falls during the early morning hours is purer than that which falls during the day.

If rain water can be collected on a clean surface and stored in a safe place there is no healthier fluid as a beverage. It is not, however, so palatable as spring water, and is apt to be of a dark colour when collected from the roof of a house. The colour can be removed by one or two filtrations through a charcoal filter, and the taste can be improved by the addition of a small modicum of salt, but not sufficient to give a salt flavour.

Through being so pure and charged with gases there is danger of contamination of the water by metals, such as lead or zinc, if these are on the roof from which it is collected.

Distilled water.—When all the sources of water are impure, water of extreme purity may nevertheless be obtained by the process of distillation, by which the method of Nature is imitated. It is necessary to have a still for this purpose, which may be obtained at a cost of ten shillings and upwards. The process does not involve much trouble, and the extra cost of conducting it is nothing, as the waste heat of the kitchen fire can be employed. Distilled water is almost free from the presence of gas or air, and is on that account unpleasant, and also less suitable for drinking purposes. This is a defect, however, which may be easily remedied by shaking it vigorously for half-a-minute or so in a bottle half filled, when quite sufficient air will be dissolved to remove this objection. If it still remains unpleasant, it may be from the presence of a little organic matter, and this a filtration through charcoal will at once remove: A new still will sometimes give an unpleasant, metallic flavour at first, and this may be prevented by thoroughly cleansing it with soda. Distilled water should be stored in earthenware or glass vessels.

Sea water, which is quite undrinkable, may be purified in this way, and most large ships are supplied with a distilling apparatus for this purpose.

Spring, well, and river water are the chief sources of our supply. Their adaptation to drinking purposes is very variable. Spring water, either on the surface, or at the bottom of a deep well, is purest from a chemical point of view. That is to say, there is usually a relatively small amount of organic matter of animal or vegetable origin, and in some cases it is almost entirely absent. But, on the other hand, since the water of springs is simply rain water which has percolated through the earth, often for long distances, it is impregnated with various amounts and kinds of mineral or earthy matter, according to the nature of the soil through which it has come. It does not always happen that organic matter is absent, and hence the water of either a surface-spring, and even a deep artesian well, may be very impure, and quite unfit for drinking. In many cases, especially those in which the spring comes from the chalk or limestone rocks, the water is very hard, and this is certainly not so suitable as a beverage as softer water, or even rain water. In some cases such hard water will give rise to indigestion of a chronic and obstinate kind. Water thus hard may be softened by boiling it, or by adding to it a little limewater, or a very small quantity of powdered builder’s lime, afterwards shaking or agitating, and permitting the sediment to settle: this is known as Clark’s process.

Well water is more variable in its quality than spring water, because it includes wells of all depths and all situations. Deep wells, whose sides are cemented for a considerable distance and supplied by a spring, compare for purity with artesian wells; but, placing these at one end of the scale, we may trace a whole series, until the acme of impurity is reached in a shallow surface-well, from ten to twenty feet deep, in the back yard of some town house, with one or two convenient cesspools a few feet distant, or a leaking drain passing close to it; or, it may be, a parish pump erected just outside the village graveyard, where the fathers of the hamlet are continually being laid, to live over again in
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their children in more senses than one.

Surface-wells are, as a rule, more or less impure. A well drains water from the land all round, extending a distance of about three times its extreme depth. Hence, if there are refuse heaps, dungheaps, and especially cesspools, anywhere within this area, the water can scarcely fail to be contaminated, unless the well be on higher ground, which is not often the case. The kind of soil affects the result considerably. Thus, the more porous a soil is, the greater will be the risk. Hence, gravel, sand, or chalk, will be more dangerous than clay, but, of course, it is just where the soil is most porous that such wells are most likely to be made. It is a matter of notoriety also that unless the degree of impurity be very great, these impure waters are brisker, more sparkling, and more pleasant than much water that is really pure. This arises from the fact that animal and vegetable matter, in decaying, give rise to much carbonic acid, and to certain salts called nitrates and nitrates, which impart the agreeable flavour. It should never be forgotten, therefore, that a pleasant taste is no criterion of the purity of a sample of water.

River water is generally softer than spring water because it is chiefly composed of water which drains off the surface of the ground. But this leads to impurity of another sort. If it drains off cultivated fields there will be more or less washings of manure; there will always be more or less organic matter of vegetable origin, with some derived from the animal kingdom. In some cases, too, it may have received sewage matter, or the refuse of factories. Here, again, the taste, smell, and appearance, are no criterion of the purity. It need hardly be said that vegetable organic matter is of small importance compared with that of animal origin. The water may possess a brownish tinge from the presence of vegetable matter and yet not be unpleasant or unfit to drink. Thus we see that river water is, when pure, admirably suited for dietetic purposes, but that, as it flows, it becomes more or less contaminated. There is, however, a self-purifying as well as a contaminating process at work. As the stream flows along it is continually exposing fresh surfaces to the atmosphere; by the rapids and waterfalls air is constantly being churned into it. By these means, and by the action of aquatic plants, a process of oxidation is always going on by which it is effectually purified in course of time from all dead organic matter, whether of animal or vegetable origin. How long this takes is uncertain, and, therefore, also, how far the river must flow in order to effect it. But we see the results of this process in the nitrates and nitrates, salts which come from the oxidation of organic matter. Hence a river which at one place is very foul, may be found to be practically pure, or, at all events, deprived of all noxious power, some miles lower down the stream.

River water will, of course, require filtration, since it contains not only dead matter, but living creatures of many kinds, together with vegetables and spores of plants. Comparatively few of these organisms, however, do any harm to the body, and millions and millions of some of them are swallowed every year with impunity, and contribute their quota to the sustenance of the system. There are some who profess great horror at the idea of swallowing these small, or even microscopic, objects, who will immediately proceed to gulp down live oysters by the dozen. If they are not parasitic to the human body they need give us no concern. It will however, be desirable to filter, or at least to strain, all river water through linen, or linen and sand, lest, perchance, some parasite of the human body should happen to be present.

A great deal has been said as to the unfitness of river water for drinking purposes, and I may specially refer here to the adverse reports which are being so frequently issued by Dr. Frankland, respecting the water derived from the Thames, the only supply of at least one and a-quarter millions of the people of London. It is very important, therefore, to in-
quire whether it is right to drink this water which he so much condemns. On the other hand, he is always holding up as a model water that supplied by the Kent Company, from deep wells in the chalk; and that supplied by the Tottenham Local Board, from a similar source. This water is very hard, and contains far more solid matter in every gallon than Thames water does; but this arises from the large quantity of the salts of lime which are present therein. The amount of organic matter in the Kent Company’s water is exceedingly small, whereas the amount of organic matter and its oxidized products in Thames water is considerable. From a chemist’s point of view, therefore, the one represents pure, and the other contaminated water. But if all water which contains a minute quantity of organic matter, chiefly of vegetable origin, together with matters which result from its oxidation, is to be condemned and refused, then the water supply of at least seventy-five per cent. of the whole population would be included. It must not be forgotten that when these organic matters are oxidized they are deprived of their injurious properties and, therefore, the only dispute can be about matters which have escaped oxidation. These, again, are by no means always injurious. It may be readily granted that any important quantity of organic matter is not likely to do any good, may possibly do harm, and that certain kinds (not always present) will produce disease. When we see by analysis that some organic matter has got into a river or well, we know that there is a possibility of other matter getting in also, which may prove more injurious. The water may have been drunk for years with perfect impunity, by which it is proved that all organic matter is not necessarily hurtful; but all of a sudden some other impurity may present itself which may cause disease. It is not scientific, therefore, to condemn the water on the mere ground of containing organic matter, unless it is clear that it contains unoxidized sewage, or has already produced disease. It is just here that Dr. Frankland fails. Dr. Dixon, the Medical Officer of Health for Bermondsey, has carefully compared the published total impurity of the Thames water with the mortality from diarrhoea and fever over a period of twelve years, 1868-79 inclusive, and he finds that there is no relation between the two; when the impurity was high the death-rate was often low, and vice versa. Hence, tested by the result of its use, one may confidently state that this water which Dr. Frankland so often states to be “unfit for dietetic purposes,” is not found to do any harm. The same conclusion is arrived at by comparison of the district supplied by the Kent Company and those supplied with Thames water: sometimes one has less diarrhoea, &c., and sometimes the other; there is no connection proved to exist between this alleged unfitness and the amount of disease. While, therefore, it is desirable to have the water as pure as possible, there need be no hesitation in using the Thames water as supplied by the Water Companies, especially if the water be filtered or boiled, or both.

I have no pecuniary interest in any Water Company. All I have said is in the simple interest of truth, and because I do not think it right that the public should be scared on such unsubstantial grounds. I should rejoice as much as anyone to see the supply of pure water undertaken by some representative body, and carried through to perfection. I should rejoice, I say, as a sanitarian, because, as a temperance reformer, I am convinced by the clearest evidence that, if the water were as pure as it is possible to get it, this would not be of the slightest service to the temperance cause. For in towns and districts which are already supplied with this pure water, we do not find total abstinence any more prevalent than in most places where the water is condemned. If people do not want to be teetotalers the alleged impurity of the water is a capital excuse, and is a side issue which saves them from the necessity of rebutting arguments with which they may have been pressed; but, in
ninety-nine cases out of 100, if the water were proved to be perfectly pure, these same individuals would find some other reason for declining to abstain. It is not, therefore, with the smallest hope of converting non-abstainers that I defend the present supply of water to London, but, in the first place, because I believe it has been condemned on utterly insufficient grounds, and, next, because I would like to reassure those abstainers who may have been exercised on the subject.

It must be remembered, however, that though the water supplied from the main were perfectly pure, there are sources of contamination through which it may be rendered unfit for use after it enters into the house. Very often the waste-pipe of the cistern passes direct into the drain, and so sewer gas can come up and dissolve in the water. Too often the cistern is not cleaned out from one year's end to another, and thus may become very foul. The remedy for these evils is a constant service of water, or, if this cannot be had, as much intelligent care in providing this prime necessity of life as in decorating and feeding the body. The water used for drinking purposes should be stored in clean earthenware pans, which should be filled daily as the water comes in. In any case in which the water is suspected, it will be desirable to take steps to obviate danger. Water may be purified from much organic matter by the addition of a little powdered alum, and then allowing it to stand for twenty-four hours; or, better, by a small quantity of Condyl's fluid, sufficient being added to give the water a distinctly pink colour. The more organic matter there is present in the water, the more has to be added, and the more quickly is the colour discharged, and this forms a rough test of the purity of the water. The Condyl's fluid gives up oxygen very easily, and forms brownish flakes, which fall to the bottom. The oxygen oxidizes the organic matter, and renders it harmless.

Filtration is an important mode of purifying water. All solid matters may be removed by filtering through two or three thicknesses of linen, or through sand. If, in addition to this, the water be made to pass through coarse animal charcoal, all common objectionable matters will be removed. A very useful filter may be made for a few pence by taking a large flower-pot, or a wooden pail, in which a small hole has been bored with a gimlet. The hole should be lightly stuffed up with a piece of sponge, or covered with a piece of linen; a layer of coarse animal charcoal, two or three inches thick, should be placed at the bottom of the pail, then a piece of linen, and then a layer of sand of the same thickness; and, finally, another piece of linen. Then water is to be poured in, and allowed to find its way out at the bottom, and to empty itself every day. After from three to twelve months, according to the purity of the water, the charcoal must be renewed, or may be exposed to a red heat in a closed iron saucepan.

If a more elaborate filter is required, there are two very efficient kinds in the market, namely, the Spongy Iron Filter, and the Silicated Carbon Filter; these are the only two that can be thoroughly relied on, though in the case of these also periodical cleansing and renewal are required.

But there is a homely method of purification which surpasses the most ingenious filter, and can be relied on to destroy germs of disease which may escape the charcoal and the spongy iron. That method is boiling. Water which has been boiled, and allowed to become cool, may be drunk with confidence. Sometimes impure water develops an offensive taste and smell in boiling; this may be prevented by treating it with a little of Condyl's fluid before boiling, as previously described, and repeating this treatment afterwards, if required. But, apart from special impurity, boiled water is often objected to, on the ground of a flatness in the taste, which is disagreeable. This arises from the fact that the gases of the water have been boiled out of it. This objection can easily be removed by shaking the water with air, in a bottle or other convenient
vessel for a minute, especially if a minute quantity of carbonate of soda has been previously added; or the water may be passed through a filter in the usual way. The boiling water ought not to be allowed to stand in a metallic vessel to cool, else it may acquire a metallic taste.

Another plan of obviating this unpleasant flavour is by manufacturing toast-and-water; pour the boiling water on to some very thin, richly browned, but unburnt toast, and strain off when cool. Weak tea may be made, and if flavoured with a few drops of lemon juice, or a thin slice of a lemon, forms a very agreeable beverage without milk or sugar.

In one or other of these ways the most suspicious water may be taken with confidence.

But, besides the objection of its impurity, London water, and the water of other towns, is often refused in hot weather on account of its unpleasant warmth and insipidity. Ice will, of course, remedy this; but all cannot obtain ice, and to many a method of cooling the water, even only a few degrees, will be very welcome. Such a method, founded on the principle of cooling by evaporation, we can easily pursue. There are porous jugs and bottles to be had, through the pores of which, when containing water, some of it slowly oozes, and, evaporating on the surface, cools the water inside. Those who cannot afford these appliances may employ the same principle thus:—

Procure a jug with straight sides—one with a cover, if possible; then pin or sew tightly round the jug a single layer of linen, reaching from the top to the bottom of the jug; put the water to be cooled into the jug, and stand the jug with its jacket in a saucer of water, placing them where they will be sheltered from the sun, but exposed to a draught of air: the linen jacket may be wetted at first, but will soak up the water from the saucer by capillary attraction, and evaporation will go on vigorously: if the jacket dries too fast it may be moistened with a sponge from time to time. In this way the water will be cooled.

In one or other of these ways I think that all reasonable objections to water as a beverage may be met. But it may be desirable to point out that if water is unfit to drink, it cannot be rendered fit by the addition of any alcoholic liquors. These may overpower an unpleasant flavour, but they do not affect the matters which are injurious.

Having discussed water now at some length, it is necessary to consider some substitutes or alternatives for pure water which are commonly used.

Alcoholic drinks demand some notice; for although I cannot include them in the list of proper beverages, yet they are so widely suggested in answer to the question, What should we drink? that I must record my conviction that such an answer is a great mistake. I do not intend to enter into details respecting the action of alcohol on the various organs and functions of the body. It will suffice to point out that alcohol in its pure and concentrated form is a deadly poison, and that it only becomes possible to take it at all by diluting it with water. The noxiously of alcohol diminishes with the degree of dilution, and there is, no doubt, a point where the amount of alcohol present becomes practically harmless; but what that point is—whether it be one, two, three or four drops of absolute alcohol in a gallon of water, or more than this, there is no evidence to show. Science is absolutely dumb on the point, because true science never speaks unless it knows. It is true that there are a great many people who will rush in where science fears to tread, and will assure you with the greatest confidence that half an ounce or an ounce of alcohol taken daily in the shape of beer or wine will not and cannot do you any harm. But these gentlemen are speaking without their book; they do not and cannot know that this quantity of alcohol does not do any harm. They only think so, and are ignorant, perhaps, of the exact harm it does do, as also of many other things. Since, then, alcohol certainly injures when enough is taken, and it is impossible to say at what point it
first becomes injurious, unless it be at the first drop, it will be wise to keep to some point short of one drop until it is settled. It is very easy to ridicule the danger, but the fact remains that many have injured themselves irrecoverably who have always considered themselves strictly moderate in their use of alcohol, and a comparison of moderate drinkers and abstainers always shows that, other things being equal, the drink increases the amount of disease and shortens life. I contend that these considerations place alcoholic drinks quite outside the pale of suitable beverages, putting on one side altogether the reasons founded on morality and religion which would suffice to taboo them.

There are, however, non-intoxicating beverages in common use, about which it is desirable to say a few words.

There is, first of all, a group of drinks which consist of infusions or decoctions of various parts of vegetables, one or other of which is in common use almost all over the world. In this class we have Tea, the national beverage of China, and not less used here; Coffee, Coca, Mate or Paraguay tea, largely used in South America; Appalachian tea, Oswegatchea, and Labrador tea, the product of different plants, and used by the natives of North America; and Abyssinian tea, in Northern Africa. Besides these, Sage tea was commonly drunk in England before the introduction and general spread of tea; so also "Salep" used to be sold in the streets of London, being a hot decoction of several kinds of orchidaceous plants. It has been found, singularly enough, that several of these different beverages chosen by various nations in different quarters of the globe, nevertheless contain principles which are very similar to one another. Thus, the active principle of tea is called thein, and is identical with caffeine, the active principle of coffee, and with that of Paraguay tea; and almost the same as theobromin, derived from cocoa. On the other hand, some of the plants employed are quite different in composition, and the only point common to them all is that they furnish an agreeable hot beverage. It seems to me that here we have the explanation of the almost universal resort to some vegetable decoction or infusion. We may, therefore, consider for a few moments this question of temperature in relation to beverages. Should we drink them hot or cold? There can be no question as to the agreeableness of hot drinks, especially in cold weather, and when the body is exhausted by any hard work. Their immediate effect is to produce a glow in the chest, which may be felt almost immediately all over the body to the tips of the fingers. This sensation is a reflex one, due to the impression of the hot fluid on the nerves of the stomach. But, besides this, an impression is transmitted to the heart and blood-vessels, with the result that the heart beats more frequently and the blood-vessels are relaxed. In consequence of this the skin becomes more full of blood, the extremities become warmer, and perspiration may break out in suitable weather. Thus we have in hot fluid a powerful stimulant, more rapid in its action than cold alcoholic liquors. A good deal of the warmth which hot brandy-and-water and other similar drinks confer, must be attributed to their heat. We have, therefore, in hot fluids excellent substitutes for alcohol, when a stimulant is required.

But there are one or two cautions necessary in relation to their use. In the first place they should not be too hot. Hot drinks are often taken at a temperature only just short of scalding the mouth, but causing a scraping sensation of heat as they pass down the gullet: such heat is most decidedly injurious. A temperature of about 160° F. coagulates albumen, and short of that will blister the mucous membrane. The hottest fluid which can be held in the mouth is about 140° F., and this is too hot for ordinary use. The use of hot drinks is largely a matter of education. Children will call them "too hot" when we think them only just warm, and it is only by habit that we become thus insensible to the heat. Here we have a
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hint which is enough to the wise. We may depend upon it that the instinct of the children is right, and we injure our digestion and the tone of the nervous system by the stimulation of hot drinks. The rule should be never to drink anything which is more than warm, say above 120° F. I attribute much of the dyspepsia and palpitation of the heart, from which those who drink much hot tea suffer, to the fact that they generally drink it very hot, and perhaps several times a-day. A relaxed and atonic condition of the system is thus produced, which is not consistent with sound health.

On the other hand, what is to be said respecting iced drinks? When we consider the extreme care which Nature takes to maintain the internal temperature, even at the expense of the extremities, I do not think it can be advisable to cool the vital organs so much by the introduction of ice or much iced water into the stomach. It is also known that ice, when taken after a meal, checks, for a time at least, the process of digestion; this cannot be desirable. Much cold water taken suddenly after exertion, when the heart is flagging, has often been known to cause illness, and sometimes sudden death, by its depressing action on the heart. Hence we conclude that if ice, or iced water, is taken at all, it should be sipped and held in the mouth until the tempera-
ture is somewhat raised.

Now we will consider briefly the characteristics of tea, coffee, and cocoa, as the beverages of this class most commonly used.

Tea has been known from time immemorial in China, but it was only introduced into Europe early in the seventeenth century by the Dutch East India Company. Its consumption has increased enormously since then, and the great demand has brought very much worthless stuff into the market. The chief constituents of the tea-leaf are four:—(1) astringent matter, from 13 to 18 per cent, giving the rough flavour; (2) a small quantity of volatile oil, which confers the aroma; (3) tannin, a crystalline substance; and (4) extractive, which consists of matters soluble in water, some of which gives the well-known colour to the infusion. The amount of these constituents varies very much in different kinds of tea, and the quantity in the infusion depends considerably on the way in which it is made. The popular idea of good tea seems to be that it should be a dark brown fluid, with a roughish flavour, able to bite the palate, having considerable "body" in it, and that it should be taken nice and hot, with milk and sugar. In order to procure this kind of beverage the tea is placed in the teapot, boiling water is poured on the tea, and it is set aside to "draw," either on the hob or under a cosy, for ten minutes or more. Let us see what all this means. In the first place, the kind of tea which will furnish plenty of colour and astringent matter consists of old and coarse leaves, and often contains dust and sweepings of warehouses, or old tea-leaves recoloured. The finest teas are those which have most of the peculiar aroma, and these colour the water least of all; in fact, in some cases, the water is only of a pale straw-colour; this the Chinese will drink without milk or sugar. Many persons would despise such fine tea, and condemn it for its very appearance as "water bewitched," but, nevertheless, a delicious natural aroma is incompatible with a dark colour and a rough taste. In the next place, the method of making the tea would spoil the best that could be had. The boiling water extracts the volatile oil on which the aroma depends, and a good deal of the active principle of the tea, with a little of the astringent and extractive, in the course of three or four minutes, and the longer the leaf remains in soak after that, so much more of the astringent and extractive are dissolved, which tend to overpower the fragrance. Hence, the proper way to make tea is to heat a teapot or covered jug; then to place the tea, previously measured, quickly into it, and to pour on to the tea as much boiling water at once as will be required; let this stand for at least three, and not more than five, minutes, in a warm place; then pour off the tea into the hot teapot which
is to be on the table. If a large quantity is wanted, it will be possible to make this of three or four times the strength required, and dilute it with hot water as needed.

One word as to the water. Soft river-water will make the best tea; but it should not be too soft, since this will take up too much of the extractive. Boiling the water softens it in most cases sufficiently, but the water used in making tea should be freshly boiled and poured on as soon as it really does boil; if it be allowed to boil for some time all the air is boiled out of it, and it is made more flat and insipid.

What are the properties of tea as a beverage? Good green tea is more powerful than black by reason of its containing more volatile oil. This and the thein together exercise a powerful influence on the nervous system. They are anti-narcotic, and appear to act in directly the opposite way to alcohol on the higher nerve-centres. Tea is a stimulant to the will or voluntary power, producing, in moderately strong doses, a restlessness, which is the result of stimulation, and which makes the individual feel that he must go and do something and cannot rest quietly: in excess, it will also produce muscular tremblings—a sense of prostration, and palpitation of the heart. Dr. Edward Smith found that tea increased the amount of carbonic acid exhaled from the lungs (thus also contrasting with alcohol), and there was greater depth and freedom of respiration; he regarded it, therefore, as increasing the amount of tissue change: the action of the skin was augmented. It must also be noted as an important feature that, although, as with almost all drugs which affect the nervous system, tolerance of its action is established by constant use (that is to say, a person accustomed to drink tea can gradually increase the amount without any obviously ill effect, until he can take a quantity which would have seriously affected him at first), yet it does not establish an irresistible craving for itself in the same way that alcohol does, and can be abandoned with far greater ease.

To tell the truth, however, I have considerable doubt, looking at the matter simply as a physiologist, whether it is desirable to use habitually any of these drugs which thus affect the nerves, whether narcotics or anti-narcotics. Yet there can be no hesitation in choosing between these two, and I know of no facts which would condemn the use of a small quantity of good fragrant tea at one or, at most, two meals a-day. If these limits be transgressed, we see every now and then clear proofs of injury, and can reckon on much when the proof is not so clear. It may be an exaggeration that at a certain tea-meeting there was a person who, by her unbounded capacity for imbibing the “cups which cheer but not inebriate,” “swelled visibly before the very eyes” of the observer; but still there are cases not unknown in which an exact method would detect a perceptible enlargement. Half a pint of good tea is quite enough for any one, and, if more fluid is required, which is seldom the case, it should be diluted, or made up with other things. Then, again, the tea should not be too strong; made as I suggest, it will be all right, but if a coarse tea is left to brew for a long time the effects will be injurious, especially if this sort of drink be taken every day, and three or four times a-day. The clearness of head and activity of thought will be succeeded by reaction in the morning with a sense of exhaustion proportionate to the previous excitement. All these effects will be intensified if the tea is taken when very hot. Indigestion, in the form of atonic dyspepsia, is a common result of this frequent use of strong, hot tea, and is more likely to follow the use of the rough, astringent kinds, especially when these are taken with or soon after dinner, or a meal at which meat is taken: the tannin of the tea interferes with the production of gastric juice and its action on the food.

The finest teas have their delicious aroma injured by the addition of milk and sugar; to enjoy them they should be taken à la Russe—that is to say, a very thin slice, or part of a slice, of lemon should be put in each cup.
This forms also a delicate and delicious beverage when cold, and is intended to be sipped, and not taken in a draught.

If some warm fluid is required more frequently, there are, besides coffee and cocoa, the sage and thyme tea of our great-grandmothers, and other flavouring syrups of which they knew nothing. It is certainly best, however, to get out of the habit of drinking so much hot or warm liquid, especially between meals.

Coffee now claims our attention; the beverage of a hundred millions of people. Its home is Southern Abyssinia, whence it was transplanted to Arabia, thence to Persia in 875, and introduced into Europe, at Venice, in 1615, reaching England about forty years later. In Arabia and the East a decoction is made of the unroasted berries, and this is taken together with the grounds. Coffee contains (1) a volatile oil, which is developed by roasting, but which is less in amount than that present in tea; (2) astringent matter, allied to tannin, of which there is about 5 per cent, in the raw state; (3) caffeine, which is identical with the alkaloid thein in tea. In former times the beverage coffee used to be made by boiling the ground berries, but by this process most of the aroma is boiled away. The best plan is to pour boiling water on it, exactly in the same way as in making tea, then stir up, or pour out a cupful or two and pour them back into the pot, by which the particles of coffee, which tend to float are mixed up properly with the water. It should then stand a few minutes before use, straining it first, or as it is poured out. This plan, however, while furnishing the coffee with the whole of the aroma, does not extract all the virtue of the coffee. This can only be done by boiling it, and therefore the grounds left by the above process should be boiled in some more water afterwards, then strain the liquid, and set it aside to cool in an earthenware jug, and let this be boiled up on the next occasion and poured on fresh coffee instead of plain water. This plan secures both the aroma and the strength.

Coffee is more stimulating than tea, and increases the force and frequency of the pulse, which tea does not do. Dr. Edward Smith has shown that it also increases the amount of carbonic acid expired, and the quantity of air inspired, and the rate of respiration, thus favouring tissue change. It decreases the action of the skin, and usually tends to constipate. It acts on the nervous system in a similar manner to tea, but much less intensely, arousing the mental faculties, and disposing to wakefulness. It is much more suitable for the poor and ill-nourished than tea is, and when combined with plenty of milk, as café au lait, it furnishes a good deal of food, a pint and three-quarters of this representing five or six ounces of solid matter, of which about one and three quarter ounces are nitrogenous. Since it is much less astringent than tea, and stimulating instead of depressing to the circulation, it is more suited for use with or after a meal.

Chicory is often mixed with coffee, especially abroad, and is sometimes, as in some parts of Germany, taken alone. It is the roasted root of the wild succory or endive, and contains about twenty-five per cent. of watery bitter extractive matter. It adds, when mixed with coffee in small proportion, a bitterish taste, which is pleasant to most people, and it tends to counteract the constipating influence of coffee. There is no particular virtue or harm in this addition, and it may be left to taste to decide on its desirability.

Roasted acorns have been used as a cheap substitute for coffee, and there does not appear to be any objection on physiological grounds.

We have a far more important beverage in cocoa, which is derived from the seeds of the Theobroma Cacao, a plant indigenous to South America, Mexico, and the West Indies. It was introduced into Europe by the Spaniards, about the year 1520, and to England about the same time as tea and coffee, being sold in London coffee-houses about 1652. The constituents of cocoa are (1) volatile
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oil, giving the special flavour; (2) Theobromin, which is allied to theirn, but not quite identical with it; (3) fatty matter, called cacao butter, forming fifty per cent. of the nut; (4) albuminous matter, forming twenty per cent.; and (5) starch, ten per cent. It contains twice as much nitrogenous matter, and twenty-five times as much fatty matter as wheat, but less starch. This analysis refers to the roasted kernels deprived of their husks; if these kernels are roughly crushed they form the variety known as cocoa-nibs. To make flaked cocoa the nibs are ground to powder and this adheres in flakes by its natural oiliness. It is clear that cocoa-nibs contain a very large amount of nourishment, and if the most is to be made of them the grounds should be stirred up and drunk as well as the fluid. The chief objection to this form is the amount of fatty matter, which disagrees with some people. Hence this is often removed to a greater or less extent by the manufacturers, and its place is generally supplied by some form of starch, as a result of which the cocoa thickens when it is boiled. There is no objection to this if wholesome starch is used, but the customer should understand what he is buying. Thick cocoa is food as well as drink, and this should be recollected in arranging for a meal. On the whole, the thin or unstarched varieties of cocoa are more generally suitable than the thick sorts, and less likely to disagree. The action of cocoa on the nervous system seems to be less intense than that of tea or coffee, and this is a point in its favour. As a harvest drink the addition of some cocoa to the oatmeal and water is generally appreciated; the whole should be boiled together.

Milk is the beverage with which we were all once acquainted, and is both food and drink. It is possible to live on milk alone, since it supplies all that is required for the growth and repair of the body. One pint contains about two ounces of water-free food, and, therefore, an adult man with ordinary work would require rather more than eleven pints a-day to supply him with all the nourishment he needs. This is too much fluid. There are some persons who cannot digest milk in its pure condition, either because it is too quickly curdled, or because they take it on the top of a hearty meal when the stomach already has more to digest than it can comfortably manage. In some cases it is more easily digested when diluted with an equal quantity of water, or soda-water, or diluted, and then boiled with a very little corn-flour or arrowroot—not enough to make it set on cooling. Butter-milk is useful in some cases, and whey forms an agreeable drink, and is less likely to cause biliousness. As a rule, I think milk is better avoided as a beverage when animal food is being taken.

There is another kind of fluid provided by nature, which is very useful for quenching thirst, namely, the juice of ripe fruits. These are, of course, not always obtainable in their natural condition, but their juices clarified, and more or less diluted with syrup, are to be had under the style of fruit syrups. These are too luscious to be used in their concentrated form, and require dilution with hot or cold water, or with aerated water. When thus diluted they form very agreeable and wholesome drinks to most persons, but often do not agree with those troubled with acidity, and may be a means of introducing excess of hydrocarbonaceous matter into the system. They should, therefore, be taken sparingly. Lime and lemon-juice furnish the blood with necessary elements by which vital action is sustained, and, in the absence of which, scurvy is produced; other vegetables suffice for this purpose. I have tested samples of the lime-juice cordials commonly sold, such as Rose's and the Montserrat, and I find them all free from alcohol, so that they may be taken with confidence on this point.

While speaking of the juice of fruits it would be a great mistake to omit to mention, with the highest approbation, the pure blood of the grape, so well preserved by Mr. Frank Wright. There is a very considerable amount of nour-
ishment in his unfermented wine, and it can be had either in its natural state or sweetened by the addition of 5 per cent of loaf sugar.

The juice of the grape which used to be preserved in a thickened condition by boiling, and still is so preserved in the East, and diluted when required, is now, thanks to modern appliances, preserved in its natural state. It still, however, requires dilution, and in hot weather forms a very agreeable beverage.

As to the various imitations of this and other juices, the less we have to do with them the better. Some of them, no doubt, are perfectly harmless, but it would be much better to sweeten and colour the water ourselves; a little cream of tartar and carmine dissolved in boiling water and sweetened will furnish us with all we require for that purpose, and we can flavour this with essence of lemon, or peppermint, or other flavour, and know what we are taking. If we require a more solid drink, combining nourishment with drink, we can employ thin barley-water as the basis.

In addition to these we have all kinds of artificial mineral waters. Some of these, such as soda water, seltzer water, and Apollinaris water, consist chiefly or altogether of water charged with excess of carbonic acid, and sometimes contain an insignificant quantity of saline substances. The aerated water produced in the seltzogene is exactly the same as soda water. These are very harmless if they are not taken too rapidly, or in too great quantity, so as to distend the stomach with carbonic acid gas. The stronger mineral waters are not suitable for dietetic purposes in health.

Finally, there are at the present time several claimants for popular approval in the shape of bottled drinks, such as Zoedone, Hedozone, Sparkling Hygeia, Phosphade, Vin Santé, and many others. These have all a strong family likeness, being aerated acidulated drinks containing various amounts of soluble hypophosphites or phosphates, including those of iron and lime. There is reason to believe those containing iron may be useful in certain anemic conditions of the system, and there can be no objection to their occasional use by those who like them; but I cannot say that I consider such drinks, especially the more highly medicated ones, as suitable for habitual use. The constant use of ferruginous mineral waters has been found to derange the digestion, and to bring about the state of anemia and weakness which their temporary use so much benefits.

In addition to these we have the old-fashioned lemonade, and ginger beer old and new, that is, the old fermented ginger beer, which contains a small amount of alcohol, and the new, an aerated drink, entirely free from it. We have also ginger ale, orange champagne, Larmuth’s drinks, and several slightly bitter drinks, which remind one of water drunk out of a beery glass. All these are very innocent in themselves, although I can well imagine that the latter may revive a taste for a stronger and more palatable beverage which we should much deplore.

What, after all, then, is the best substitute for alcoholic liquors? I do not refer to substitutes for alcohol as a medicine, but as a beverage. Strictly speaking, since these drinks are only injurious, there can be no good substitute for them. If anything would do just what alcohol does, it would be just as bad. Yet ale and beer, which have long been taken with the meals, are often dreadfully missed. This is the result of habit, and such a bondage of the appetite is a slavery against which a man does well to rebel, apart from all question of the injury done by alcohol. Resolution must be summoned to give reason the mastery of appetite, for “the impulse of appetite is slavery; obedience to self-prescribed law alone is liberty.” If the will and moral power are so weak that the attempt to obtain freedom will not be made without something to drink besides pure water, coffee or thin cocoa are the best alternatives; milk and soda water may be taken, or fruit syrups diluted with water, or hop tea, or some of the bitter manufactured drinks; but
The Intemperance of Parents a predisposing cause, &c. 113

the sooner these drinks—and, indeed, all the rest—can be dispensed with, the better; and I should have more confidence in the teetotal stability of those who have recovered their natural relish for cold water. In case of fatigue or pressure of bodily or mental work the best substitute for alcohol as a stimulant is either hot coffee or cocoa, or Liebig’s extract of meat in hot water.

But after wandering through all the list of unalcoholic beverages, an unvitiated taste will return with fresh zest to the beverage which Nature provides, and which long ages since the omnipotent and all-bountiful One prepared for those beings which He made in His own image, and caused to flow from Horeb’s rocky side, as the fittest thing to drink with angels’ food. Happy is the man of simple habits and simple tastes who can appreciate a draught from the crystal spring. The virtue which abides therein is not often sufficiently valued. There is abundant evidence that life, in the absence of food, can be sustained far longer when water is taken than without it. Those only, perhaps, realise its value who are, for a time, unable to get it. The great secret of healthy dieting is to eat when we are hungry and to drink when we are thirsty, and he who is thirsty will not fail to appreciate the thirst-quenching and refreshing properties of cold water. Those who despise it may well excite our pity.

"'Tis a little thing
To give a cup of water; yet its draught
Of cool refreshment, drain’d by fevered lips,
May give a shock of pleasure to the frame
More exquisite than when Nectaran juice
Renews the life of joy in happiest hours."

THE INTEMPERANCE OF PARENTS A PREDISPOSING CAUSE OF IMBECILITY IN CHILDREN.*

By Fletcher Beach, M.B., M.R.C.P., Medical Superintendent of the Darenth Asylum, Kent.

The part which alcohol plays in the production of insanity has for some time past occupied the attention of the medical profession, and has been the subject of discussion at the Medico-Psychological Association, and the Medico-Psychological Branch of the British Medical Association. Three years ago, Dr. Shuttleworth, of the Royal Albert Asylum, Lancaster, read a paper on "Intemperance as a Cause of Idiocy," in which many important facts were set forth, and I should not have attempted to touch the subject were it not that my experience has led me to assign to parental intemperance a more important part in the production of imbecility than does the author of that paper. I have been led to this opinion, I think, from the fact that my patients are drawn from a different class of society from those with whom he, as well as other superintendents of public asylums for imbecile children in the United Kingdom are brought in contact. In these the patients are chiefly drawn from the middle classes, although some of the institutions contain a small proportion of the pauper element: but in the asylum over which I have the honour to preside, though there is a sprinkling of children of respectable parents, yet by far the largest proportion are drawn from the lowest classes of society, in whom, as is well known, intemperate habits largely prevail. In addition, I have no doubt there is less difficulty in arriving at the truth. By the middle classes intemperance is considered a mark of social degradation, and its presence in the family

* Read in the Psychology Section, British Medical Association, Cambridge, August 11, 1880.
The Intemperance of Parents a predisposing

will not be confessed; but the lower classes hold no such opinion, and a woman of that class will not only tell me that her husband is a drunken man, but will go on to say that he illuses her as well. I have found it necessary, in considering the subject of my paper, to treat it chiefly from the statistical point of view, and unavoidably so, for from statistics alone can a true conclusion be drawn. I am aware that an opinion exists that figures will prove anything, but I have endeavoured to use them fairly and without bias.

I believe that the first account of the part which parental intemperance plays in the production of imbecility in the offspring is to be found in a "Report on Idiocy made to the Legislature of Massachusetts by the Commissioners appointed to inquire into the condition of Idiots within the Commonwealth," published in 1848 by Dr. Howe, in which, among other causes, intemperance in the parents is alluded to. From this report we learn that of 300 idiots, 145 are reported as children of habitual drunkards. This, no doubt, is much too high a standard, and is so considered by the superintendents of American asylums for imbecile children, who are aware of the means by which such a result was obtained. In 1856 a Commission on Idiocy was appointed by the State of Connecticut, and the commissioners state that of 235 cases in which the habits of the parents are ascertained 76 were due to intemperance, an average of 32.3 per cent. Very lately the Association of Medical Officers of American Institutions for idiotic and feeble-minded persons have been examining into the antecedents of 100 idiotic and feeble-minded children, with the result that in 38 parental intemperance is given as an accessory, main, direct, or indirect cause, an average of 38 per cent.

For the last five years I have made a point of inquiring of the friends of my patients, from whom alone I am able to get the history of the case, whether intemperate habits existed in the parents or not, and I find that of 430 cases whose histories have been obtained, 136 had intemperate parents, an average of 31.6 per cent. In two other cases, though the parents were sober, the grandparents were intemperate. Altogether, 850 patients have come under my observation; so that the cases in whom parental intemperance has been ascertained will be 15.4 per cent. of the entire number. Practically, I have histories of half the number of cases that have come under my treatment, and since an average of 31.6 per cent obtains in these, I think I may fairly hold that the same average will exist in the remainder. This is a much larger average than that obtained by Dr. Shuttleworth, who out of 300 cases could trace a history of intemperance in only 16, an average of 5.3 per cent. On going further into the question, I find that of the 138 patients 72 are males and 66 females, the number in each sex being nearly equal. Classifying these, I find that with reference to the 72 males 47 are congenital and 25 acquired cases; of the 66 females, 44 are of congenital and 22 acquired origin, so that the number of congenital and acquired cases in each sex nearly correspond. Altogether, 91 patients are due to a congenital and 45 an acquired cause, those of the latter class being half the number of the former. Proceeding further, I found that in all the 47 male congenital cases the fathers were intemperate. Of the 25 acquired cases, 23 had intemperate fathers, and one an intemperate mother; in the remaining case the father was sober, but the paternal grandfather was intemperate. Of the 44 congenital females, 42 had intemperate fathers, one an intemperate mother; and in one the father and mother were both intemperate. Twenty-one of the 22 acquired females had intemperate fathers, the twenty-second having a paternal grandfather intemperate. It appears, then, that intemperance is far more common on the male than the female side. On inquiring into the amount of intemperance present, the following facts were elicited:—45 of the 47 intemperate fathers of
the congenital males were occasional drunkards, one was a hard drinker and one died of delirium tremens. With reference to the 23 intertemperate fathers of the 25 acquired males, 20 were occasional drunkards, one was a hard drinker, one died of delirium tremens, and one of the effects of drink. As to the remaining cases, in one the mother was an occasional drunkard, in the other the paternal grandfather was very intemperate. Of the 42 intertemperate fathers of the congenital females, 38 were occasional drunkards, 2 were very intemperate, 2 had had attacks of delirium tremens, and one of them had died of it. Of the two remaining cases, in one the mother was drunk during the whole period of pregnancy, and in the other, in which the father and mother were both intemperate, the father is said to have become insane from the effects of drink. As to the 21 intertemperate fathers of the 22 acquired female cases, 18 were occasional drinkers, two were very intemperate, and one was a heavy drinker. The paternal grandfather of the remaining case was very intemperate. From these figures we find that all degrees of intemperance, from occasional drunkenness up to delirium tremens, were present.

In a few cases it was found that drunkenness was a family failing. Thus in three cases the father's side of the family are described as intemperate, and in one of these the male side had been intemperate for many generations. In one case only was the mother's side given to drink, but here the result was very marked, for not only was the patient in the asylum an imbecile but her two cousins were imbecile also. Isolated cases of intemperance among relations of the family were much more common. Thus in four cases the paternal grandfathers were drunkards; in one case the maternal grandfather, in two cases the grandfathers and grandmothers both drank. In one case a paternal uncle, in one a paternal aunt, and in one a maternal aunt were intemperate. Curiously enough, in some cases the bad effects fell on the grandchildren only; the fathers of two patients were sober men, but the paternal grandfathers were intemperate. Some difficulty was experienced in attempting to ascertain the part which parental intemperance alone played, or appeared to play, in the production of imbecility, for in many cases intemperance was accompanied with hereditary predisposition and other predisposing causes; but the following classification was at length adopted:—(1) Intemperance alone apparently the only predisposing cause; (2) Intemperance accompanied with fright; (3) Intemperance associated with phthisis; (4) Intemperance complicated by insanity or imbecility; (5) Intemperance in conjunction with neuroses of different kinds; (6) Intemperance associated with insanity or neuroses and phthisis; (7) Intemperance complicated by several predisposing causes. On taking these classes in the above order, it was found that 27 cases were included in the first, 16 in the second, 22 in the third, 15 in the fourth, 17 in the fifth, 26 in the sixth, and 15 in the seventh class. Of the 27 patients in whom intemperance appeared to play the most important part, 13 were males and 14 females. Of the males six were of congenital and seven acquired origin; of the females, nine were due to a congenital, and five an acquired cause. It was found in some of these cases there was also a history of illness, fretting, worry, or desertion of the mother, and in two cases premature labour; but there was no doubt that such a condition of the mother was directly due to the father's intemperance. The next class is that of intemperance accompanied with fright of the mother, the fright not being directly due to the father's intemperance. Of the 16 patients in this class, the males, amounting to four, were all of congenital origin; of the females, 11 were congenital cases, and one was an acquired one. Passing on to the third class, comprising 22 patients, it was found that of the males nine were due to a congenital and four an acquired cause; of the females, five were congenital, and four acquired cases. In 10 of these patients fright, worry, or anxiety of
the mother not due to the father's intemperance was also present; in three cases fretting, illusage, and trouble directly due to it existed. In the fourth class, containing 15 patients, five of the males were congenital cases, and one was an acquired one; of the females, seven were congenital and two of acquired origin. In six of these cases there was also a history of fright or worry not due to the father's intemperance; in two cases worry and illusage of the mother was directly due to it. In the next class, of the 17 cases 12 were congenital males and four acquired males; two were congenital females, and three acquired females. In this case, fright, worry, or anxiety was present in six mothers of the patients, but not due to the fathers' drinking habits; in one case it was so due. In the sixth class, comprising 26 cases, 12 of the males were due to congenital and six to an acquired cause; four of the females were congenital and four acquired cases. Of the patients in this class, fright or worry was present in 11 mothers, such a condition not being due to the fathers' habits; in two cases trouble or worry was directly traced to them. In the seventh and last class of 15 cases, three were congenital males, and three acquired males; six were congenital females, and three acquired females. Fright was present in one mother, and trouble, anxiety, or worry in four. In two cases illusage was noted; in these two the illusage was directly due to the fathers' intemperance; in the other five it was not so. In this last class, the intemperance of the father was combined with insanity, imbecility, neuroses of different kinds, phthisis, consanguinity (three cases), intemperance, syphilis (one case), and cancer (one case) in his relatives. It should be mentioned that the insanity, imbecility, neuroses, phthisis, &c., present and complicating intemperance in all the classes were in many cases far removed from the patient, existing in his grandparents, uncles, aunts, and cousins. To make these statistics clear, I have drawn up the following table:

<table>
<thead>
<tr>
<th>Intemperance alone apparently the only predisposing cause.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males. Females. Total.</td>
</tr>
<tr>
<td>(c) 6 9 15</td>
</tr>
<tr>
<td>(a) 7 5 12</td>
</tr>
<tr>
<td>13 14 27</td>
</tr>
</tbody>
</table>

Intemperance accompanied with fright.

<table>
<thead>
<tr>
<th>Males. Females. Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) 4 11 15</td>
</tr>
<tr>
<td>(a) 0 1 1</td>
</tr>
<tr>
<td>4 12 16</td>
</tr>
</tbody>
</table>

Intemperance associated with phthisis.

<table>
<thead>
<tr>
<th>Males. Females. Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) 9 5 14</td>
</tr>
<tr>
<td>(a) 4 4 8</td>
</tr>
<tr>
<td>13 9 22</td>
</tr>
</tbody>
</table>

In three cases fretting, illusage, or trouble, due to fathers' intemperance.

In ten of these cases fright, worry, trouble or accident not due to fathers' intemperance.

Intemperance complicated by insanity or imbecility.

<table>
<thead>
<tr>
<th>Males. Females. Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) 5 7 12</td>
</tr>
<tr>
<td>(a) 1 2 3</td>
</tr>
<tr>
<td>6 9 15</td>
</tr>
</tbody>
</table>

In two of these cases worry or illusage, with bad living, due to father's intemperance.

In six of these cases fright or worry, not due to fathers' intemperance.

Intemperance in connecion with neuroses of different kinds.

<table>
<thead>
<tr>
<th>Males. Females. Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) 8 2 10</td>
</tr>
<tr>
<td>(a) 4 3 7</td>
</tr>
<tr>
<td>12 5 17</td>
</tr>
</tbody>
</table>

In one of these cases there was illusage due to fathers' intemperance.

In six of these cases fright, worry, or fretting, not due to fathers' intemperance.

Intemperance associated with insanity or neurosis and phthisis.

<table>
<thead>
<tr>
<th>Males. Females. Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) 12 4 16</td>
</tr>
<tr>
<td>(a) 6 4 10</td>
</tr>
<tr>
<td>18 8 26</td>
</tr>
</tbody>
</table>

In two of these cases trouble or anxiety, due to fathers' intemperance.
cause of Insanity in Children.

In nine of these cases fright or worry, not due to fathers' intemperance.

Intemperance complicated by several pre-disposing causes.

<table>
<thead>
<tr>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c)</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>(s)</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

\[6 \times 9 \times 15\]

In two of these cases there was ill-usage, due to fathers' intemperance.

In five of these cases, fright, trouble, anxiety, or worry, not due to fathers' intemperance.

From this table it appears that, excluding the first two classes, 10 were also complicated with fretting, worry, or ill-usage of the mother, due to the father's intemperance; while in 36 cases, fright, worry, trouble, or anxiety on her part could be traced to it.

As to the type of cases produced, I find that of the 47 congenital males, 24 are of low, 22 medium, and 1 high type. Of the 25 acquired males, 10 are low, 11 medium, and 4 high in type; of these 4, 3 have recovered. No recoveries have, of course, taken place in the congenital cases. The low type cases include imbeciles of the Mongolian type, cretins, microcephalous, and hydrocephalous cases. No especial type was found to be due to intemperance during connection, for though in two cases of cretinism such a history was given, on the other hand, in four cases it was denied. Such a condition was present in a few low-type cases, which presented no particular features, but in all the rest it was absent.

Some interesting facts presented themselves while going through the histories of the patients. In seven cases they were the only children, and one of them was born after 14 years' marriage. In one case the mother was married 10 years before the birth of the child; in another the mother had only two children during 21 years, and both were imbecile. Another point to which attention was directed was the number of patients in whom convulsions or epilepsy, complicating the imbecility, was present, or had existed, and it was found that in 47 of the 91 congenital cases, and 40 of the 47 acquired cases, such a complication had occurred, or was present at the time of admission. A comparison was then instituted between these patients and those in whom there was no history of intemperance, with this result:—In 85 of the 160 congenital and 95 of the 132 acquired cases remaining of the 430 whose histories could be ascertained, the complication above mentioned existed. The comparison showed that though the number of cases of imbecility, complicated by convulsions or epilepsy, in the latter class are absolutely larger, being more than double those of the former, yet the ratio of complicated to uncomplicated cases is much the same in both. In the former class we have 47 out of 91 congenital patients; in the latter 85 out of 166. In the former class, 40 out of 47 acquired cases; in the latter, 95 out of 132. The result is accounted for, I think, by the fact that, in a large proportion of cases, insanity, imbecility, or epilepsy, existed in the parents or relations of the children belonging to the latter class (where there was no parental intemperance), and so an unstable brain was produced. In the congenital cases it was found that the convulsions came on chiefly previously to or at the time of teething, the irritation of the tooth pressing on the gum being apparently sufficient to cause such a result. In the patients belonging to the acquired class, however, though the convulsions were in many cases so produced, yet by far the larger number of them were due to other causes, such as sunstroke, blows on the head or back, epidemic diseases, fright, &c., to which the child was subject at a later age. One of the congenital cases was especially interesting. Five weeks after the patient's birth the mother was suckling the child, and fretting at the time, in consequence of the intemperate habits of the husband. The child, while at the breast, had a fit, and convulsions have from time to
time occurred ever since. The fact that an unstable brain was occasionally present in the other children of the family was also noticed. In 35 cases, sometimes one and sometimes as many as seven children had died of convulsions. In six cases, other children—as many as six in the family of one patient—had died of convulsions. In six cases, other children—as many as six in the family of one patient—had had convulsions during teething. In seven cases, the other children were deficient or imbecile; in one, all the children were excitable; in two, spinal complaints existed; and in one, inflammation of the brain.

To sum up, the opinion which I hold as the result of a careful study of the figures contained in my paper is this:—That parental intemperance alone, in a few cases—27 out of 138, acts as a main or direct cause; but that, in the great majority of cases, it is only an indirect, accessory, or predisposing one. I do not believe it to be usually the chief cause, but I think it is one which we cannot afford to overlook.

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**STIMULANTS IN WORKHOUSES.**

(From the *Lancet*, Nov. 27.)

We have another contribution to the elucidation of the difficult question of the therapeutic use of alcohol in workhouses in a report by Mr. Anderson, to the guardians of West Derby, Liverpool, in reference to the patients in Walton workhouse. At the urgent request of many guardians, supported by statistical representations from other unions, Mr. Anderson resolved, in the treatment of hospital cases, to give stimulants only in the most urgent and severe cases. During eight weeks ending November, sixty-three patients died, with an outlay for stimulants of £31 17s. 7d., whereas in 1879, only twenty-three died, with a consumption of alcohol represented by £122 7s. 8d., and in 1878, twenty-two died, with an outlay of £85 19s. Mr. Anderson thinks these figures show the impolicy of the treatment, and, in particular, expresses his opinion that to withhold stimulants from the sick poor in Liverpool in illness is to prolong their convalescence, owing to the impoverished state in which the majority come into the workhouse. Undoubtedly they must require sustaining and feeding treatment. And Mr. Anderson's figures may have some interest. But we cannot attach much importance to them in the absence of many more details than are covered by a mere statement of the number of deaths and the bill for alcohol. This is obviously so bare a statement as to be without scientific value. What were the cases? and How far do the cases of one year bear comparison with those of another? What was the state of the weather? What of the employment of the people? What was the prevalent character of disease in Liverpool generally at each period? What food was given in the place of stimulants? &c. These questions and others must be answered before any comparison can be trusted. Mr. Anderson's own figures show that he is hanging too much on this one peg of stimulants. For example, between the years 1878-79 there was a difference of only one death, but there was a difference of £37 in the bill for alcohol. There was one death less in the year 1878, with an expenditure of £85 19s., than in the year 1879, with an expenditure of £122! Clearly we have something more to learn about the mortality in the Walton workhouse than is told us by the bill for stimulants.

The following letter has been ad-
dressed to the Right Hon. J. G. Dodson, President of the Local Government Board: —

Sir,—At the meeting held on Saturday last, 27th inst., of the council of the British Medical Temperance Association—an association consisting of a large number of medical men practising the profession of medicine in the United Kingdom—I was requested, as their President, to ask if, through the Local Government Board, a return of statement of facts could be had relative to the subjoined extract in the Times of November 19th: —

"At a meeting of the West Derby (Liverpool) guardians on Wednesday, the following report from Dr. Anderson, medical officer of the Walton workhouse, was read: 'At the urgent request of many guardians, supported by statistical returns from other unions, I was induced to put to practical test, as an experimental trial, the treatment of hospital patients with a minimum amount of alcoholic stimulants—that is, to order them only in the most urgent and severe cases. This system was adopted on September 7th, and continued until the present time. During the eight weeks ending November 2nd I find the total consumption of stimulants amounts to £31 17s. 7d., while the number of deaths during the same period had increased to sixty-three. During the corresponding period last year twenty-three deaths only occurred, with a consumption representing £122 7s. 6d., while 1878 is represented by twenty-two deaths and £85 19s. in stimulants. In the face of such figures, I feel certain the guardians will agree with me that it would be impolitic to continue the experiment. I would therefore beg to direct the attention of the guardians to the prolonged convalescence attending the non-stimulating treatment. Of this there is abundant evidence in the overcrowded condition of the hospitals with acute cases. The results of the experiment prove to me conclusively that paupers suffering from acute diseases, admitted here in a half-starved and impoverished condition (the physical state in which the majority are received), recover in a much shorter period when stimulants are freely but judiciously employed as an important part of the treatment."

From this extract it appears that Dr. Anderson, the medical officer of the Walton workhouse of the West Derby Union, has expressed an opinion that, owing to a reduction in the employment of alcoholic stimulants for the patients under his care, during a period of two months, a notable increase of mortality in some cases, and a prolonged convalescence in other cases, has been experienced.

This opinion is so opposed to other opinions on the same subject that have come under the cognisance of the members of this Council, that they feel it essential in the public interest that all the facts on which the said opinion of Dr. Anderson is based should be fully known and recorded.

The following are the necessary facts that require to be known: —

1. What was the nature of the disease in every case that terminated fatally during the time when the reduced amount of alcohol was being used by Dr. Anderson?

2. What were the ages, sex, and conditions of the persons who died under these circumstances?

3. What was the actual amount of alcohol daily administered to those who died under the circumstances named, and in what form of alcoholic stimulant was the alcohol supplied to them?

4. What has been the precise rate of mortality per month in relation to the number of patients during the past five years?

5. What has been the expenditure for alcoholic stimulants per head, per month, for the hospital patients of the workhouse during the past five years?

6. What was the expenditure for alcoholic stimulants per head during the two months in which the quantity of alcohol was reduced, and in which the excessive mortality supposed to follow from the reduction of stimulants occurred?

7. What length of time was each patient who died during the reduced administration of alcoholic stimulants under medical treatment?
8. What was the precise nature of the disease, and what was the condition of the patient in each case where the convalescence was prolonged by the reduction of alcohol, and how long was each such case under treatment?

9. What was the exact amount of alcoholic stimulant supplied to each case of prolonged convalescence as compared with the amount that would ordinarily have been supplied?

10. How many days in each case was the convalescence prolonged by the reduction of the stimulant?

The Medical Temperance Association, consisting of practitioners who abstain from alcoholic drinks as beverages, has no rule which prevents its members from judiciously employing alcohol for medicinal purposes. On the contrary, it wishes to know everything that can be learned as to the actual value of alcoholic stimulants in disease, in order that its own action may be unprejudiced and its influence be devoted to the establishment of the truth, whatever that may be. In this spirit it most respectfully approaches you on the important subject above-stated, in the hope that, under the direction of your authority, the simple and easily-rendered facts asked for may be obtained.

I remain, Sir,

Your most obedient servant,

Benjamin Ward Richardson,
M.D., F.R.S.

12, Hinde Street, W., Nov. 30, 1880.

THE RAPID ACTION OF ALCOHOL.

Dr. Alfred J. H. Crespi has favoured us with a letter on this subject, in which he says:—

When, some years ago, a letter from Dr. Edmunds informed me that the tinctures at the Temperance Hospital were prepared without any spirit of wine I fear I was wicked enough to smile. I could admit the great importance of not permitting alcohol, in any form or amount, to be admitted to the inmates of that institution, so that no objection could be urged by enemies of the temperance cause against the statistics which it was intended after a time to publish, but my scepticism was aroused by Dr. Edmunds' statement that the alcohol in ordinary tinctures was in itself often injurious, though I remember that I had heard the same objection urged by medical men whose views on temperance had little in common with those of this able, thoughtful, and accomplished physician. Time went on, and, according to my wont, I continued to prescribe tinctures and pharmacopoeial spirits with no sparing hand; their small bulk, and palatableness, and the great length of time they can be kept unchanged in warm rooms and in hot weather, seemed to me great recommendations. One so seldom meets with abstainers in practice, and so many people are accustomed to take liberally of what some of my clerical friends call one of God's good creatures, that my attention was not specially directed to the imprudence of such remedies. Well, a year or two ago some casual complaint from a patient startled me: the medicine, she said, had been too strong; it had made her giddy, and got into her head. Since then I have paid particular attention to the action of spirituous tinctures, and found that young girls, and particularly abstemious and weakly people advanced in life, were very sensitive to even small doses of alcoholic tinctures, essences, and spirits, and I have diminished the doses accordingly. Well, early one morning, last August, I had a few grapes—a pound or two—those tasteless bladders of water and suds we call hothouse grapes, and persuade ourselves are nicer than really ripe, fleshy, full-flavoured Peninsular and German grapes. In two hours or so I
had an uncomfortable attack of indigestion, which got worse as the day went on: now, on shore, this is a very rare occurrence with me, so rare that I can literally, and without inconvenience, eat anything, from half-a-pound of chocolate creams to a couple of pounds of figs, or half-a-pound of almonds; but at sea, or on a small island, I suffer much from indigestion. Well, I had a long round to go that afternoon, and many patients to visit, and feeling rather worse, if anything, after an early dinner, just before starting I poured a few drops of essence of cinnamon into a wineglassful of water, and drank it. Cinnamon is reputed good for indigestion, by the way. I could not have taken more than six or seven drops, less probably. Now, if essence of cinnamon is prepared like the official essences, five drops would represent less than four of absolute alcohol, hardly half the dose of alcohol I have prescribed hundreds of times to be taken three or four times a-day, in the shape of tincture or spirit of course.

To my astonishment, in three minutes the essence of cinnamon had coursed through me, and my face tingled again, while my hands were unpleasantly warm: in turning to a mirror I found my cheeks crimson, and though I immediately set off on my round I continued to feel hot and excited, and very far from comfortable, for half-an-hour, while, though the day was hot enough, every breeze felt unpleasantly cold. Unfortunately, too, my indigestion was none the better for the remedy. Now here is the point to which I wish to direct attention. I am a lifelong abstainer, and though I have tasted wines it is years since: moreover, singular though it will appear to people who know what good things medicines are, I cannot call to mind that I had ever before tasted one of the essences or spirits of the pharmacopoeia. I do not like to deprive my patients of such valuable remedies, and the less I take the more for them. I was probably, therefore, peculiarly susceptible to the action of alcohol, and the result, believe me, astonished me; not I mean that my indigestion was not cured, for we all know that medicines sometimes fail to do good, but that a dose of alcohol so small should at once have disagreeably affected me. Many a gentleman who passes for temperate, probably regularly takes more than a thousand times as much in the twenty-four hours. I commend the above facts to my professional brethren, and it will teach them that even small doses of alcoholic tincture may prejudicially affect young girls and sickly and infirm people not used to alcohol.

At the time I was in good health; but though it does not at any time take much to overdo me, I have not kept my bed a day for sixteen years, and then only for two days. I have very few blood relations living, but they are not peculiarly susceptible to alcohol; one or two, indeed, are able to drink as freely as the generality of men, without apparent inconvenience, so that there is no hereditary intolerance of drugs or alcohol. Dr. Edmunds may depend upon it that I shall not again smile at non-alcoholic tinctures, or deny the prudence of withholding alcohol in every form.

How important it becomes not to prescribe alcohol for the aged and infirm: you will recall to mind those memorable lines in Boswell’s Life of Johnson, when the latter was very near the end of his pilgrimage: his life had been one long illness, his temptations and trials many, and his surroundings had often been far from good, while the customs of the age permitted, perhaps encouraged, greater license and self-indulgence than are common now. “Then,” said Johnson, when his physician had told him that death was near, “I will take no more physic—not even my opiates, for I have prayed that I may render up my soul to God unclouded.” In this resolution he persevered, and at the same time used only the weakest kinds of sustenance. Being pressed by Mr. Windham to take somewhat more generous nourishment lest too low a diet should have the very effect he dreaded, by debilitating his mind, he said, “I will take anything but debilitating sustenances.” And thus that
great and holy man—for assuredly he was both, despite some warring of the flesh against the spirit—passed away, his mind clear, his heart at rest, the fear of death, which for many years had haunted him, mercifully dispelled at the last, and the peace of God—for which he had yearned so long, prayed so passionately, but, as it seemed, so ineffectually—granted him in large measure, when most needed. Cheerfully and calmly he went to his rest, not soaked by opiates, nor stupefied by alcohol, and we may truly believe that in quiet pastures beside the still waters he has reaped his reward. It is interesting to remember that at one time he had for many years been a strong enemy of wine, and that he was, in his latter years, loud in his praises of water. "As we drove back to Ashbourne," says Boswell, "Dr. Johnson recommended to me, as he had often done, to drink water only." "For," said he, "you are then sure not to get drunk; whereas if you drink wine you are never sure." And this was not the only matter on which he went far beyond his contemporaries, and far beyond most of ours, too.

ALCOHOL IN ENTERIC FEVER.

DR. JOHN S. BRISTOWE, F.R.C.P., Senior Physician to St. Thomas's Hospital, read a paper on the treatment of enteric fever, on Wednesday, November 10th, at a meeting of the South Metropolitan Branch of the British Medical Association. He was in favour of milk diet, and in regard to alcohol said:

"It is impossible to discuss the subject of the treatment of fevers without referring to the question of the use of alcohol in relation to them. In the early part of this century, when blood-letting was the fashion of the day, stimulants were seldom employed in the treatment of febrile disorders. Of late years, however, alcohol has not only been regarded by most physicians as an essential element in the treatment of fevers, but by many has been esteemed our sheet-anchor, and has been administered sometimes in appalling quantities. The reason, however, for giving it thus was not simply to obtain its stimulating effect, but in the belief that it was an article of food, and that it was assimilated by the patient at a time when other kinds of food could not be taken or were inadmissible. I see no reason to doubt that alcohol is a food; at any rate it contains the same elements as starch and sugar, which are undoubted foods; and the experiments of Thudichum and Dupré show that, when once taken into the system, it is in some way used up in the system, and escapes in very minute proportion through the emunctories. But we have, doubtless, many foods that are more valuable as foods than alcohol; and in milk, at any rate, we have one which is generally well suited for invalids. It is rarely necessary, therefore, to have recourse to alcohol as food; and its use in fevers depends mainly on its primary or stimulating—its medicinal—influence. I have never used alcohol indiscriminately in any kinds of fever cases; and, indeed, ever since I have had the care of patients in St. Thomas's Hospital, I have been very sparing in my use of it. In the year 1863, when typhus was prevalent in London, I carried out an experiment, which I never published, and which Dr. Murchison carried out independently on a larger scale, a few years later at the Fever Hospital, with similar results to those I had also obtained. I treated, without selecting them, half my typhus patients with alcohol from the beginning to the end, half my typhus patients without alcohol, also
from the beginning to the end, and found no appreciable difference in the result. From that time I have never regarded alcohol as the essential item in the treatment of either typhus or enteric fever; and I have seldom given it, unless special circumstances indicated it to my mind the need of stimulation. Many typhoid cases, and even severe cases, have recovered under my care without having tasted a drop of alcohol. Many no doubt have had it; but the circumstances under which I have given it have been: the presence of extreme debility, indicated by a feeble heart and rapid pulse; the superintervention of typhoid symptoms; the occurrence of pulmonary complications; and the debility of prolonged convalescence. My friend Dr. Ord, in an interesting paper on Enteric Fever, in the eighth volume of the 'St. Thomas's Hospital Reports,' based upon sixty cases (of which twenty-four were my own) received into the hospital from the end of July, 1877, to the end of March, 1878, observes that 'twenty-four patients received no stimulants at all; six only a small quantity during convalescence; eight not any till after the tenth day of admission; twenty-two received them within the first ten days of stay in the hospital, or while the fever was in activity, but very few indeed received them till after the end of the first week's illness.' The quantity of stimulants varied from a glass of wine or a glass of beer up to sixteen ounces of wine daily in one case, and eight ounces of brandy in another.' Of these cases, eight were fatal, the mortality being at the rate of 13\% per cent. The remarks above made, while they tend, on the one hand, to show that alcohol is less valuable than many persons suppose in the treatment of fever, tend, on the other hand, to demonstrate that alcohol is not injurious in fevers. Indeed, I never recollect to have seen a case in which, even under physicians who have used it largely, alcohol has clearly acted injuriously. My main reason for withholding it has not been for the fear of doing mischief, but simply because I have not thought it necessary; and, not finding it necessary, I have allowed economical considerations to weigh with me. I am satisfied that there are many occasions in enteric fever when alcoholic stimulants are of the greatest value; and whoever then neglects to have recourse to them imperils his patient's life.'

In the discussion which followed Dr. Bristowe's address few of the speakers spoke on alcohol. Dr. Broadbent would be sorry to be treated in a temperance hospital. Dr. Dow believed alcohol to be of use only in the later stages of typhoid fever. Dr. Norman Kerr admitted he had seen cases that in his opinion required some stimulant. He believed he had seen alcohol reduce tissue waste when that was so excessive as to threaten a fatal termination, and avert collapse when that appeared imminent. But even when alcohol was indicated, the danger of reaction was so great that the remedy was so apt to become worse than the disease, that the administration of intoxicants demanded due deliberation and close watching. When such could be procured, he preferred digitalis and ammonia, flying sinapisms, and other non-alcoholic stimulants. Where alcohol was prescribed it ought always to be discontinued the moment the occasion for its use had passed. When he had suffered from enteric fever himself he took no alcohol, but drank very freely of water and milk. Dr. Collie, of Homerton Fever Hospital would, give stimulants of the stronger kinds to those accustomed to drink them in health, and to others claret and the lighter wines.
A DUKE AMONGST THE DOCTORS.—
The Duke of Northumberland delivered an address at the opening of the "Newcastle College of Medicine, in connection with the Durham University," in October last, when he recommended his hearers to be patient of new ideas in regard to medical treatment, and told them "That those who advocate the exhibition of alcoholic compounds now, and laugh to scorn the non-alcoholists, will, in a succeeding generation, be as much held up to ridicule as the Sangrados of the past."

TEMPERANCE AMONGST NURSES.—
In the Worcester Institution for supplying trained nurses, one of the regulations for nurses and probationers is as follows:—"They shall not take wine or spirits unless ordered to do so by a medical attendant. And with a view to encourage total abstinence, those nurses and probationers who are willing to bind themselves to abstain entirely from alcoholic beverages (except when ordered as above) shall receive an allowance in money from the funds of the institution not exceeding 15s. 6d. per week in lieu thereof, both while attending cases and while unemployed at the Home."

AN UNPROVED STATEMENT.—
Among the answers to correspondents in a recent issue of the British Medical Journal is the following:—"Mr. Folker (Hanley).—The statement that teetotalers would rather let patients die than break their teetotalism is an extraordinary one. We have never heard of such an incident, and we are inclined to doubt whether the statement has any foundation." It appears that Mr. Folker recently gave public utterance to the above accusation against total abstainers, when relating the case of a girl on whom he had operated for a diseased knee-joint, and to whom he had given very large doses of spirits. Several correspondents of the local newspapers called on Mr. Folker for proof. Hence, we infer, Mr. Folker was speaking without the book, and wrote to the British Medical Journal for confirmation of his assertion, which still remains unproved.

ALCOHOLIC SOLUTIONS OF PEPsin.
—M. Petit (Journal de Thérapeutique, June and July, 1880) has made a series of careful researches on pepsin which confirm the conclusions previously arrived at by Professor Liebreich, of Berlin, on the value of slightly alcoholised glycerine extracts of pepsin, such as that which is now well known in medicine as Liebreich's pepsin-essenzen. The value of pepsin, he points out, depends upon its power, not only of dissolving fibrine, but of transforming it into peptones; and a slightly alcoholised solution not only preserves its activity permanently, but its efficiency is in no way interfered with, provided its alcoholic strength, when diluted in the stomach, does not exceed 5 per cent.—British Medical Journal.

STIMULANTS IN IRISH WORKHOUSES.—The Cork Board of Guardians recently requested the Local Government Board to sanction an arrangement by which all stimulants used in the workhouse hospitals might be regarded as drugs, be placed in charge of the workhouse apothecary for administration under the orders of the medical officers, and be charged like other medicines on the Parliamentary grant. In reply, the Local Government Board now state that they are not prepared to acquiesce in the proposal that the stimulants used in the workhouse be included in the list of medicines provided for the establishment. The issue of stimulants to pauper inmates of the workhouses, they remark, is already restricted by the regulation (Article 20) to cases in which the medical officer of the workhouse may give directions in writing for their use in individual cases. The guardians are also requested to bear in mind that no part of the cost of stimulants, such as wines and spirits, can be defrayed out of the Parliamentary grant for medical purposes.—British Medical Journal.
ALCOHOLIC DRINKS NOT NECESSARIES OF LIFE, 
AND OUGHT NOT TO BE TAKEN FOR DAILY USE.*

By Alfred Carpenter, Esq., M.D. Lond., J.P.,
President of Council of the British Medical Association.

I have undertaken to prove two propositions, which have much 
importance in connection with the subject of Temperance. They 
are not new; they have been frequently brought forward, and are 
considered to be fully proved by unprejudiced scientific investi-
gators. But their truth is denied by interested observers, who 
do not like their personal application, and who refuse to look at 
the facts by which the propositions are supported. They are 
like the men of pseudo-science of Galileo's time, who, when they 
were invited to look at Jupiter's satellites, shut their eyes, and 
then declared that they could not see the moons. These men 
see, however, that if the propositions I submit to you are 
thoroughly established in the popular mind, they would do much 

to overthrow the throne of drunkenness and vice, and therefore 
of that source from whence their employers draw a great portion 
of their revenues. The great men who hold their sway by means 
of intoxicating liquor, have scientific men deeply skilled in 
chemistry and physiology attached to their court, who, like 
Galileo's monks, are blind to the facts which are opposed to 
their interests, and naturally leave the bearing of those facts out 
of the problem.

If the propositions which I now submit to you, together with 
the evidence which supports them, could be thoroughly popu-
larised, and become well understood by the public, the result

* Read at a meeting of the British Women's Temperance Association, 
February 24, 1881.
would tend to hasten the time when Great Britain would be a sober nation; when the judgment of her great men would be guided by strictly righteous motives, and her women cleared from the stain which rests upon their characters. The women of England now furnish a large part of the contingent of drunkards who are committed every day to the care of prison warders, and also of those who are made to pay a fine in the police courts of our country for some offence, of which drunkenness forms a part of the charge which is made against them. The women of England are in a great measure responsible for these results. They not only provide for the manufacture of the army of drunkards which, day by day, is recruited from the moderate drinking section of the people, but they also assist to provide a class of persons who, from the very nature of things, are so built up that they must become drunkards in spite of themselves, unless they keep away from all contact with strong drink. Those who have had the misfortune to be the offspring of parents under the influence of alcohol, can only be kept from the drunkard's fate by a life-long abstinence from all intoxicating liquors. It is comparatively easy to check this when the suspicions to drunken tendencies show themselves in the child of parents who have not themselves transgressed. I say comparatively easy; for those only who have tried to check the downward career of any drunkard—those who have tried to rescue him from his fate—know how hard is the task which they have undertaken. But let that drunkard be the child of a man or woman who has allowed the appetite to be their master, and then it will be easier for a camel to go through the eye of a needle than to rescue that individual from his ultimate doom, unless he can be persuaded to be once and for ever a total abstainer. Without the aid of women it is quite out of the power of man to bring about the result. There is not only the present temptation, but there is the growing fruits of hereditary tendencies, which are day by day becoming more marked in their results, and more dreadful in their consequences. You ask the question as to how the great work is to be performed? How can hereditary tendencies as well as present tastes be got rid of? I answer, By thoroughly popularising the propositions which I submit to you to-day, by teaching our little ones in their early life what is right upon this matter by making the propositions themselves articles of faith in the nursery, and by the women of England determining that the children they have borne, or which they have to educate, shall be thoroughly imbued with the maxims I wish to inculcate; that to depart from them would be something worse than a crime. These maxims are simple, they are easily understood, their acceptance by the masses would go far to alter those
social customs which are the bane of the poor man, the scourge and the curse of the rich. The propositions are (1) That alcoholic drinks are not necessaries of life; (2) That they are injurious if habitually taken for daily use; and I would also add a third, (3) That disease may be treated in a great majority of cases more successfully by not using them as remedies, and then if not so frequently used, the stain which is now sought to be cast upon the doctor for having insisted upon their necessity could not be continued. It has been held by most people that alcoholic drinks, like bread, meat, and vegetables, are real necessaries of life. This idea is still maintained by large masses of people: they think that they must form a part of the midday and evening meal, and that those people who put them aside run the risk of suffering from mental and muscular damage. It is considered that muscular and mental forces are brought into being and then strengthened by their daily employment. This was thought to be scientific teaching fifty years ago. It is yet strongly insisted upon by most persons interested in the trade and manufacture of alcoholic drinks, and who will ignore the facts collated by my great namesake and teacher, W. B. Carpenter. It is still feebly uttered by the scientific adherents of the manufacturer. Women, by the support they give to the dogma, have encouraged it by instilling a belief of its truth into the minds of the boys and girls who have been naturally left to their care in the first years of their life. The establishment of this article of belief in the minds of young people has been a great impediment to the formation of habits of temperance, and the promotion of those good works of which temperance is but a part. I hail therefore the establishment of the British Women's Temperance Association with the greatest satisfaction, as being a necessary step in the right direction. It is one which the friends of temperance must especially promote. Without the aid of women generally we should be quite unable to get rid of those articles of belief which are even now instilled into the minds of the young, as soon almost as they can talk. The dogma that father's beer or mother's gin is as necessary to them as meat, and of more consequence by far than bread and milk and vegetables, is yet an established article of faith. Some at any rate of all classes of society still think that daily life cannot be endured without the daily portion of beer, or wine, or spirit, and that no festive event can be celebrated with propriety, unless there is alcoholic liquor of some kind in abundance on the table.

I shall try to avoid the ground as far as I can which has been already occupied by those who have preceded me in this course of lectures, and shall only recapitulate those points which are necessary to prove the truth of my propositions. You may
perhaps remark that you have already heard the points which I shall adduce. I started, however, by telling you that I was not about to put anything absolutely new before you, but only to reiterate the facts which science teaches us, and to try to put them into popular language.

My first proposition is, that *They are not necessaries of life.* It is assumed by a portion of our antagonists that they are necessary, and the result of the assumption is shown in the terrible scenes which have so frequently to be described in our police courts, and the still more agonising results upon the affectionate and very often uncomplaining relatives of the victims. If the proposition could be conceded and recognised as a great fact in the public mind, if it should come to be a sincere article of belief among the masses of the people, a great part of the struggle against intemperance would be gained. The manufacturing interests already are standing aghast at this teaching, and are trying by scientific evidence to show (but without success) that alcohol is a food. That it is not, however, a necessary of life, is a self-evident truism: millions of people never touch it, and are none the worse for its absence. If we keep people from sugar and bread, fat, or vegetables, nature rebels, and there is soon a manifestation of disease, the known result which always follows from the continued absence of such articles from the diet table. No such results happen to total abstainers from intoxicating liquors. But, per contra, it is a thoroughly established fact that the habitual consumers of strong drink are among the most unhealthy of all Her Majesty’s subjects, and yet the very same class of persons have only to commit some crime by means of which they are removed to one of the Government convict prisons, when they become, as soon as abstinence has had time to renovate their exhausted frames, not only the healthiest but also the hardest of men. Appeals are being made to men of science by the manufacturers of strong drink, asking them to prove that this is not so. The latter know full well that if this view should become a sincere article of belief among the masses, their occupation would dwindle to a small business, instead of being that powerful and wealthy combination which it now is. The drink interest is already raising the cry of “Great is Diana of the Ephesians.” There are many coppersmiths who are now uttering that cry with their utmost powers, and trying to drown the still small voice of science, which is however day by day pointing out to those who really wish to know the truth that alcohol and all its combinations have very little claim to be considered in the light of food. They are learning that it is similar in its application to that of a whip, entirely unnecessary for the willing and working animal, but when used upon the tired
Alcoholic Drinks not necessaries of life. 129

horse it makes the poor creature go faster for a short time, with the certainty that the breakdown will come all the sooner.

I must, however, state that alcohol is something more than a whip. In addition it is like to a pair of bellows, it adds nothing to the quantity of fuel, but it blows up the fire, and causes it to burn all the fiercer for a short time; like the bellows it may lead to a rapid consumption of fuel without putting any more material into the grate, and produces a larger mass of ashes in consequence.

Keep these three points fully in your mind: It is not a food; life cannot be prolonged beyond a very short and definite term, when a person is restricted to its use alone; it is a combination of whip and bellows, useful it may be to tide over a difficulty and save a patient from untoward consequences, occasionally in a life time, but if habitually used the fuel is burnt up earlier than it should have been, until, like the well-whipped ass, at length both the animal and the man refuse to respond to its application. When alcoholic drinks are taken there is increased action, and with that increased action some material is changed in its character. Let me impress upon you the fact that food is taken only for the purpose of bringing about actions which are the evidence of life, and which in man prove an intelligent existence. The effect of alcohol is to arrest those changes in the food before they are completed. This is often seen in other ways. Cherries are put into brandy to preserve them from total and early destruction. Tinctures are made with spirit to extract matter which water will not touch, or which if kept in water would soon decay. Many materials are hardened by it or changed in their physical condition, and are kept from complete decomposition by alcohol. It produces its ordinary effect in the human economy as well as in the laboratory of the chemist. It arrests actions in the body which ought to go on, it stops the complete separation of organic particles into more simple elements. These changes, when properly performed, make matters more soluble in the fluids of the body, by which they may become expelled from the system by the different emunctories or excreting glands which nature has provided in the body. This material, when its final change is not perfected, is unable to escape from the organ which was about to complete its dismemberment, and the function of that particular organ is rendered imperfect by the presence of material foreign to its mission, which material is not soluble or cannot enter into union with its other secretions, and which has no business there. The more the organ is stimulated by the alcoholic whip the more it becomes impeded in its function, the half-altered débris is unable to travel further, for the lymphatics and veins which ought to deal with it cannot properly touch it. It no longer responds to the
invitations which those organs are able to address to it, for it is not that with which they are accustomed to deal. It is well understood by the chemist and the physiologist that the most virulent poisons which nature can produce are not easily separated from their matrix by water alone. By the aid of alcohol and its ally, ether, the chemist is able to get most of these alkaloids, which are, even in very small doses, the most deadly poison. It is in this way that strychnine is obtained, and the much more valuable material called quinine. The matrix is digested in combinations of spirit and water, and the alkaloids ultimately separated. So also there are poisonous materials which are precipitated from their combinations by the agency of alcohol, and their presence is made manifest when required for the arts. There are poisons of a similar character manufactured in the human economy, as well as in the strychnine and the upas trees. Nature has provided that some of these matters shall not remain in the system, but shall be excreted as rapidly as they are formed. There are several of those which are well known to the physician and the pathologist, and which if kept in the blood are as deadly in their action on the human system as is strychnine or curara. They are formed in excessively minute quantities, and fortunately it is not easy to check their complete expulsion or manufacture sufficient to produce an immediate effect. It requires a sudden and total cessation of excretion to immediately set up the recognised poisonous action of each. When this sudden and total cessation does take place the result is necessarily a rapidly fatal issue.

It is one of the powers which belong to alcohol to arrest the removal of every one of these deadly poisons from the human economy. Not suddenly in a general way, it is true, but by infinitely small degrees, and then to gradually deprive the body of the purifying power which nature provides. When strong drinks are taken habitually, day by day, they successively break up the power of a few of those marvellous machines which abound in the blood, which are our safeguards and our benefactors; and although it is possible for the body to do without some of them, nay, it may even be requisite for other reasons that their numbers should be arrested, yet it is certain from analogy that the limits of destruction are moderate, and that they cannot be greatly altered with impunity.

I will now try and point out to you the way in which alcohol arrests the removal from the body of these self-manufactured poisons. The great emunctories, by means of which excretions are removed, are the lungs, the liver, the kidneys, the glands connected with the bowels and the skin. Science has not yet told us in what form the two latter get rid of active poisons, or
of their precise nature, but analogy tells us, and experiment corroborates the view, that they have the power. I shall, on this occasion, restrict my observations to the lungs, the liver, and the kidneys. Each has a particular purifying action to perform, and each has to relieve the fluids of the blood, and the blood corpuscles of some material which has been used up elsewhere, and has been brought from some other part of the human economy. You have been told by Dr. Kerr that the most important function which the blood corpuscle has to perform is that of carrying oxygen, which it has absorbed (during the act of inspiration) in the lungs, and to take it from thence to the periphery of the body and the glandular organs—there to render it up in exchange for other material. The matters which it obtains in exchange are the remains of that which has been already utilised in performing the various prerogatives which belong in some way or other to each and every part of our system. They are of the nature of débris, or used-up material, and are more or less injurious if left in situ, or if they are taken to some other part, and are not discharged from the body, or if, being in situ, they are not precisely the kind which nature intended. Like to the ashes in a stove, if the housemaid does not clear them away, the fire burns dimly, and there is not the same amount of heat developed. So if the housemaids or carriers which nature has provided for us in the blood are unable to perform their work, débris is left where it ought not to be. The blood corpuscle takes in oxygen and gives out carbonic acid, and some deadly nitrogenous compounds are also expelled at the same time. This fact is well known to those who have examined the air of a room in which a large number of persons have been kept for some time without there being any proper ventilation. The air becomes ammoniacal, and contains poisonous exhalations in addition to the carbonic acid. The latter in itself for each individual amounts to from at least twelve to sixteen cubic feet in the twenty-four hours. If the air of a room is allowed to remain unventilated, the quantity of carbonic acid and organic matter exhaled increases in it, so much that the action of the heart decreases, whilst the frequency of inspiration increases. It is established by the experiments of Dr. Angus that the smallest diminution of oxygen in the breathed air affects animal life if its place is supplied by carbonic acid; that the quantity of carbonic acid given off into the lungs increases or diminishes according to the amount of that gas which is actually present in the lungs. The more carbonic acid there is in the blood, the more difficult it will be for the blood to keep up the requisite excess of oxygen. It follows therefore that the carbonic acid which forms in the tissues of the body must be discharged by the lining membrane of the air cells of the lungs as rapidly as
it is brought there, or there is excess in the part, and the purifica-
tion of the blood is interfered with and morbid matter kept back.

Let us now see how this purification is checked. The blood

corpuscle is an excessively minute flattened sphere, consisting of

an albumenoid membrane enclosing a liquid. The investing

membrane has a property belonging to it upon which its function

depends. When brought into contact with gases, having different
densities or weights, as you may consider them, the heavier
gas passes out, and the lighter into the contained liquid, provided
the physical and vital conditions of the membrane are intact, and
arranged for that particular transfer. Carbonic acid passes out,
oxxygen passes in. If the physical condition of the membrane is
altered, this interchange does not take place. The action of
alcohol on membrane is well known. It may be seen in various
ways in the laboratory, and is well understood by the chemist
and the manufacturer. The membrane, which is the envelope of
the blood corpuscle, is easily acted upon. Alcohol has a special
attraction for the water which is contained in the substance of
the membrane, and the physical condition of the latter is altered
by contact with it. Every atom of alcohol, therefore, which finds
entrance into the circulation, and comes into contact with cor-
puscles ready for its reception, tends to spoil one or more of these
active carriers, to damage the function which they have to perform
by impeding the exit of carbonic acid, whilst the oxygen which they
may happen to contain is used up by the alcohol in its own
oxidation. When the blood, therefore, reaches the lungs, these
corpuscles, which are thus damaged, retain the débris which
they already have within their capsule, they are carried on back
again into the arterial circulation, unable to do anything for the
organ to which they in their turn are conveyed. They lose their
beautifully circular contour, do not get the florid colour which
belongs to properly oxygenated blood, and have a tendency to
lag behind in a very unsatisfactory manner, in a way which is
frequently shown in the face and nose of the toper. Every man
who habitually takes alcohol, except it be in a highly diluted
form, and then at once is mixed with albumenoid matter in the
stomach, there becoming itself somewhat changed before it is
absorbed; that man deprives some of the blood corpuscles of their
proper power, and retains within his own circulation some débris,
which is undoubtedly of a poisonous character. It is one of the
established facts connected with the building up and renovation
of the human body that all used-up matter and effete products are
injurious to all parts of the body to which they are foreign, and to
which they do not belong. Membrane, which has been acted upon by
alcohol, is no longer able to perform its physical duty and the transfer
of gases and of organic matter from within the body to the outside
is interfered with. Keep this point in mind, for I shall again revert to it. A blood corpuscle cannot come into direct contact with an atom of alcohol, without the function of the former being spoilt, and not only is it spoilt, but the effete matter which it has within its capsule cannot be exchanged for the necessary oxygen, and if the corpuscle has oxygen already within its capsule, that oxygen is used up in oxidising the alcohol itself, and is therefore no longer available for other and healthier purposes. The breath of the drunken man does not give out the quantity of carbonic acid which that of the healthy man does, and the ammoniacal compounds are in a great measure absent. Some of the carbon and effete nitrogenous matter is kept back. The retention of these poisonous matters within the body is highly injurious to the interests of the owner. This injury is very manifest whenever the habitual user of intoxicating liquor is subject, to injury of another kind. Let the drinker suffer from a lacerated, or even any wound or injury, and the material which has been kept in his blood is a kind of touchpaper, ready at a moment’s notice to prepare and set up actions called inflammatory, or erysipelatous, or some other kind; by means of which too often the drinker is hurried into eternity, although, perhaps, he may have been regarded as a perfectly sober man, and have never been drunk in his life.

Let me now consider another action which alcohol sets up. We are accustomed to speak of animals as being more or less highly organised according to their endowments. The more numerous and complex their functions and powers are, the higher they are said to be in the scale of creation. Man stands at the top of the list. Man is placed there because his mental power enables him to rule over the inhabitants of the earth. His superior endowments are connected with his brain, and in his brain and the nerve centres connected therewith we find the most complete and most highly endowed parts of the body. The first dawn of life is a minute, a microscopical, particle of organised matter which develops into a cell. The advance of development carries this organised material into a higher stage of existence, until it may arrive at brain substance itself. But the most highly endowed particle of matter in all creation is still a cell. It is the most wonderful endowment which any organic substance can possess, and upon it all the intellectual superiority of man depends.

What, however, is the effect of alcohol upon the human frame, when sufficient has been taken to show its action? The wonderfully endowed nerve cell is the first to experience it; there is a change in the manifestation of its activity. The nerve cell is at once seized upon by alcohol when a potent dose has been taken,
an action is set up in the cell, which is not a natural one. It
takes effect at once upon this highly endowed part of the human
body. Here it exerts its primary influence, and intoxication
results. It is a curious, and yet a striking and significant fact,
that the true effect is signified in the word Intoxication. The
meaning of this word is poisoning, and such is actually the effect
of the imbibition of alcohol when sufficient has been taken to
produce the manifestation of its power upon nerve matter. Every
act of the body, every expression of the will, every thought of the
mind, is brought about by the utilisation of nerve cells. When-
ever a nerve cell is used there is the natural result; the nerve
cell, which has developed power, is imperfect until the used-up
matter is removed. The effete matter which is the result of the
act of the will, of thought, or even of the nutrition of the nerve
itself, becomes an impediment to the continuance of perfect
action, and is a poison to its companions. We see the same
result in the vegetable kingdom, and it is one of the reasons why
a rotation of crops is so necessary in farming land with success.
The exuvia from one class of plants is injurious to the nutrition
and perfection of specimens of the same class, and the analogy
is true throughout creation, and is expressed in the proverb of
"What is meat to one is poison to another." One result of the
production of nerve force, is the formation of a substance which
is in some way connected with cholesterine. It is the duty of
certain vessels to remove this from its place of production, and
carry it to the gland which nature has specially provided to deal
with it. Now we feel sure that an atom of alcohol cannot come
into immediate contact with a nerve cell without the current of
nerve force (which it is the duty of the force battery to set
free) being altered in its quality and perhaps sent in the wrong
direction. We have already seen that some of the blood
cells may be incompetent to perform their functions, so that
there is first the chance that the débris which is the result of
the production of the nerve force, may be left in situ, in conse-
quence of the blood-vessels being unequal to their work and
cholesterine may remain in excess, and then the next action of the
nerve battery is impeded, or, from the direct application of the
alcohol to the nerve cell, there may be a misapplication of change,
and the organic matter, which is the natural result of that change
is not of the usual character, and thus the first stage of nerve
decay commences. Fortunately for humanity there is a power
of removal if the interference with proper function is not con-
tinually renewed. If the application is excessive the power of
the individual to continue the application is absolutely taken
away, and time is given for outraged Nature to reassert her
healthy sway, and the newly-made drunkard cannot go on in his
course. There is a chance for him if the man is warned by the consequences of his first excesses. His downward path may be arrested, but if the warning be not taken, if he allows his lusts to overcome his better reason, the time comes when the action of the alcohol blunts the judgment of the owner, and he is no longer capable of exercising his free will, or of forming a righteous judgment upon things in general, and regarding strong drinks in particular. He has reached the stage which St. Paul describes as, "The base things of the world which are despised hath God chosen, yea and things which are not hath God chosen to bring to nought things that are" (1 Cor. i. 28). The machine upon which the act of judgment depends is itself imperfect. If the lens of the microscope or of the telescope be blurred, how can it give a perfect figure of the object which is viewed through it? The nerve cell and the nerve-tube in this case corresponds to the lens in the instrument, and the result must be untrue. It is this imperfection of the battery of thought which probably accounts for the reason why so many otherwise good and thoughtful men are unable to see the damage which results to society from the daily moderate use of alcohol, and it is often a great reason for failure in business, failure in legislation, failure in all things temporal, because those who have to decide upon the course to be followed have been addicted to a free or at least a daily use of strong drink. Who shall say until the great day of account comes how many battle-fields have been lost, nay, still worse, how many wars have been precipitated and how much slaughter has resulted from this daily habit? When the judgment has been specially required to be clear and the head cool, the actor has thought to steady himself by a glass of wine or other alcoholic drink; but by means of which his mental powers have been really dimmed, and the course pursued has led to wars and its accompaniments, to disaster and defeat. I am not asserting that this has been caused by the act of the decided drunkard, though far too many instances crowd upon one’s memory for me not to be able to say it has sometimes happened; but I assert that it is the steady and moderate drinker who is liable to this irregular and imperfect judgment, and the possibility of its occasion is a great reason for abstinence.

It is known that the use of brain matter and other nerve substances in the exercise of its endowment tends to produce the material called cholesterine. This substance is removed by the circulatory organs, and is conveyed to the liver, and should be there excreted, and thrown out of the system as a component part of the bile. If the brain action is imperfect this does not result, and some other unknown changes do or do not take place. One thing is certain, that the action of alcohol leads
to a so-called fatty degeneration of tissue, which arises sooner or later in the brain substance as well as in every other part of the body. The nervous system is the first to suffer from the immediate effect of alcohol. So no doubt it is also the first to feel the influence of the changes which alcohol effects, or of those which it hinders. Let me impress a very important point upon your notice. Fatty degeneration is not the production of fat as one generally understands by the term "getting fat," it is not the production of layers of fat among the tissues of the body, or as animals do when they are over-fed, but the grains of fat take the place of the tissues which make up the organ. It is not an addition to the organ, but in the place of it. Keep this point fully in mind, otherwise you may think that if alcohol will produce fat it must be an advantage. The organ consists of millions of cells. Let daily doses of strong drink be taken regularly every day, and you risk the chance that a few of these are changed from healthy nerve cells to fatty nerve cells, and sooner or later, according as the alcohol affects one part or another of the body, some part of the machine becomes unable to do its duty, and there is more or less disturbance in the whole fabric, so many of the rank and file upon which that duty depends have been put hors de combat in consequence of the non-removal of their dust. There is fat instead of the ordinary débris, and the fatty matter thus formed in the cell remains there until there is sufficient of certain other products to dissolve and to remove it. Its removal may be slow, its production may be a rapid one, and in the meantime the organ controlled by the damaged part is out of gear. Keep this point in mind—fatty matter in the wrong place, cholesterine either not formed, or if formed not removed, and in consequence of this effect there is an absence in the blood of one of the materials which is required for the proper formation of healthy bile, for cholesterine is a part and parcel of the bile secretion. Thus, you see, there are wheels within wheels, and damaged nerve cells cause defects in other organs, and one of the earliest is the difficulty which arises to digestion from the defect in the component parts of the bile. Thus you see the intimate relationship which exists between the brain, the stomach, and the liver. The latter organ is influenced in various ways by brain disturbance. It will be nothing new for you to be told that the most frequent result of too much alcohol is liver disease, and there is no doubt but that this disease is greatly on the increase.

We have managed to diminish the incidents of some diseases by the inculcation of sanitary precepts, but diseases of different organs of the body continue to become more and more fatal in the middle ages of life, and to fill up the gaps in the sum of figures which sanitary science is making in the death-roll of the
Alcoholic Drinks not necessaries of life.

country. The liver has to do several things; a considerable part of its duty is to purify the blood from débris, to filter out some things, to break up and alter others, and to expel them from the body in the form of bile. There are certain diseases in which the liver suddenly declines to do any more work: perhaps it receives no orders from head quarters. Acute atrophy of the liver is the name of this disease, and when it does arise death rapidly results from a suppression of the secretion of bile. It brings about a condition called acholia, the patient is actually poisoned by the non-removal of those ingredients from the blood which it is the duty of the liver to remove. A state of things is rapidly brought about which corresponds in effect to the condition which alcohol can bring about by slow degrees, and which some forms of alcohol will bring about sooner or later if they be indulged in, and if their effects happen to fall first upon the liver. The bile, like all other secretions, is formed by cell action.

Excess of food has a tendency to form fat in the liver, and to produce disturbances which are called bilious. Alcohol has a similar effect in its tendency to form fat cells, and their production in quantity impedes the work which the liver cells have to do; we know that excess in both food and drink brings on such states as are called bilious, and leads to a rebellious liver. It is, however, one of the prerogatives of alcohol, and one which does not belong to true food, that it blunts the source of nerve force by preventing a correct manifestation of nerve-action, by means of which those usually watchful sentinels are unable to respond in a right way. As a consequence there is a lax discipline; the so-called bilious condition does not come on, more of the enemy is admitted to the citadel, and he works his way by damaging the excretory organ more and more until some considerable quantity of that which ought to be excreted is kept back, and small instalments of alcoholic or bile poisoning are set up, not however sufficient to produce death, but enough to cause headaches, and other pains, sleeplessness, restlessness, and to lay the foundation but too often of nerve disorders, which, if not removed, will land the unfortunate victim in the madhouse, the prison, or the hospital.

The continual production of nerve force, a production which belongs to the act of living, and accompanies every act of the body and mind, whether right or wrong, produces changes which result in the formation of cholesterine, which finds its way into the blood. The cells of the liver have to remove this matter. If they are fatty they cannot do it. Even if they do remove it, it may be in such imperfect combination that it separates in the gall bladder. The liver of the habitual user of alcoholic liquors,
even in moderation, always has some fatty liver cells, and some of his machinery is not quite up to its proper duty. His blood is not pure, loss of appetite arises. Perhaps the man is said to be bilious, and he still farther maltreats his digestive organs by taking irritating doses of active medicines, to compel the removal of some of the offending matter by other channels, and he thus enables himself to go on still further in the wrong direction. It is abstinence and exercise, not physic, which will remove the effects of fatty liver. There is, however, another action which is set up in the liver by alcohol, and which arises from its direct application to the vessels which nourish the organ, and which the pathologist has good reason to associate with gin drinking. The immediate effect of alcohol is upon the blood-vessels. The power of the nerves which preside over the nutrition of the body, and which are distributed everywhere, at once feel the influence of the imbibed spirit. Those nerves are especially abundant in the blood-vessels which supply the liver. The consequence of the action of alcohol on those nerves is to produce a semi-paralysed state, in consequence of which the blood-vessels dilate—that is, become larger. This state is called congestion, the vessels contain more blood than they are usually accustomed to carry. This happens at the very moment when their nutrition is interfered with by the action of the spirit upon the sources of their power. The ultimate result of this stretching of blood tubes is a so-called state of chronic inflammation, which, in the end, ties down the structure of the liver, stops the proper circulation, and starves the structure, so that having in the first instance been increased in size, it afterwards shrinks and wastes away. There is no longer a proper removal of the débris from the blood. There is no longer a proper removal of the waste of nerve matter, or of the used-up blood discs, neither is there a proper power to form the material which, when acted upon in other parts of the body is the source of animal heat. Ultimately the owner becomes the victim of one or other of the diseases which these defaults set up, although it may be possible for that individual to have been regarded as a jolly good fellow, and not one in ten of the victims ever finds himself inside a police court, or transgresses the laws of propriety. They do, however, cut short their own lives by their own acts, and to my mind are as properly classed with suicides as those who more rapidly poison themselves by becoming habitual drunkards. There is a slow poison left behind, which but too surely produces a fatal result, if the habitual use of strong drink be continued.

Men, and even medical men, are accustomed to deceive themselves by thinking that it is only when the results are manifest to common observation that there is decided damage, but does it not
stand to reason that an organ containing millions of cells, and quantities of fine tubing in which those cells are contained, and when there are also miles of fine conduits for the conveyance of nourishment to those cells, that it is by the damage of these cells and the destruction of these tubes and conduits that mischief results? Does it not stand to reason that mischief commences as soon as a few of them are destroyed? Destruction is not a natural result, it goes on in an unnatural direction, and when any part of the gland is interfered with something is kept back which ought not to be retained, and there is at once a foundation for evil. Immediately alcohol gets into the circulation it passes on in a most rapid manner, some atoms directly into the liver, some reach the brain, others affect the nerves of nutrition; a portion, it is true, seizes upon albuminous matter before it enters, and does comparatively little damage, for its own powers are interfered with, which is the reason why it is much less hurtful when taken upon the full stomach than upon the empty one; but in every case its volatility enables some of it to escape and diffuse itself to the different organs of the body, doing mischief to every part; but, as too often is the case in this world, making black white, and leading the actor into the belief that he is all the better for the arrests of actions which have taken place. In reality, the reason why it appears to do him good is that there has been some unhealthy process at work previously to the imbibition of the alcohol, and which action is delayed in its manifestation. Its effect is like to a merchant who has a great number of bills becoming due, and which it is impossible for him to pay off, or even to renew if they come all at once; but alcohol defers the account, and enables the acceptor to postpone their payment by adding the interest and renewing them for another period, and so he puts off the evil day, only, however, to make the account all the heavier when it has to be met.

Let us now pass on to consider the next great purifying organs of the body, viz., the kidneys. I will not trouble you with a mass of statistics bearing upon the mortality from the diseases of this organ, but it is a very striking fact, that just as the observance of sanitary laws tends to remove those classes of disease from our midst which are caused by filth and overcrowding, so we find their places filled up by increased mortality from other complaints. This seems to be especially the case with those which arise from diseases of the kidney. Comparative immunity from the results of infectious disease allows of greater length of life, but the arrest comes before its time nevertheless, and diseases of liver, of brain, of heart, and especially of the kidneys, are alarmingly on the increase. Great part of this increase is undoubtedly due to the habitual use of strong drink. If the lives of the young
are saved from the fatal effects of fevers and other epidemic disorders it seem as if the victory was only to be followed by defeat, in detail, from other causes. I am of opinion that every child born into the world has the chance of living to be a hundred years old. It first runs the risk of destruction from parental ignorance or neglect; to this is added the mischief which follows from ignorance, too often wilful, as to the laws of health, which ought to be observed by the parents or enforced by the State. If the individual escapes these dangers he falls a victim either to inherent weakness, the result of his forefathers' misconduct, or he commits slow suicide by his own acts, and so diminishes his average length of life to a little above forty-one years. Let me impress upon you the fact that a child has a birthright. That birthright is health. If he is deprived of it by parental sin committed previous to the birth of that child the responsibility rests upon the parents as the murderers of their offspring. If it is deprived of it by ignorance, the responsibility rests upon the governing body, who have allowed that ignorance to be possible. It may be deprived of it by the neglect of the governing body to do its own duty. Up to this point there is no responsibility upon the individual, but not so in a later stage of existence. When the acts of the individual are the result of other people's teaching, and before he reached to years of discretion, the result is partly to be borne by the teachers, and hence an enormous responsibility rests upon parents and teachers who allow to young people the possibility of having their years shortened by indulgence in liquor, and paving the way for that perverseness of intellect which shows itself in later life, and which must come when they see no evil in the daily use of intoxicating drinks. The drink is very often given to the child under the mistaken notion that it will do him good. It is taken at first as a medicine. Then comes the time when the child begins to like it, gets a will of its own, and takes it because he likes it. This goes on for a season, but it soon comes to pass that he is no longer a free agent, he takes it because he thinks that he cannot exist without it. The craving which shows morbid nutrition comes on, and then there is no help in this world for that individual except to so keep him that it shall be impossible for him to come within the influence of strong drink, until all the tissues in his body which have been maltreated shall be used up and removed from their place. It is probable that the class of persons who become habitual drunkards have a defective filter in the kidneys or the skin, something is left behind which the kidneys or other organs should remove, which is attracted to the cells of these organs and retained there just as we see in the arts, when certain materials are used for the purpose of discharging a colour. There is an attraction for
the material, and a pattern is fixed upon the cloth to be dyed or figured. It is probable that some of the improperly formed matter which results from the action of alcohol on brain and other nerve cells produces some material which is similar in its action to dyes, and this matter at once takes possession of the cells in the kidney, or in other organs, in its passage out of the body, and prevents their acting in the way that nature intends them to do, and there is an arrest in the formation of another deadly poison which it is the duty of the kidneys to pass out of the body. This is a material called urea, and a salt called uric acid. It sometimes happens that the kidneys suddenly refuse to do their duty, and then death is certain to follow in a very few hours. There cannot be any possible good in keeping back in the blood any of the four poisons I have mentioned. The ammoniacal compounds which are excreted by the breath; the carbonic acid, which passes from the lung cells; the cholesterine, which it is the duty of the liver to separate from the blood; the urea, which ought to be removed by the kidneys, are all outside the pale of medicines even. No possible good can result from their detention, and no single cell can be damaged in any organ of the body without there be more or less a certainty that some of these poisonous matters will be held back, and be kept so as to be nuisances and injurious to the health of the producer. In no way can it be shown that the usual physical and chemical actions of alcohol differ in their course in the body as compared with similar actions out of it, and however men may deceive themselves, and think that they prefer the alcohol to the abstinence, they have no right to teach men that it is right to shorten life and to lay the foundation of disease. Disease is not a necessary part of existence. It is not a necessary part of death itself. The cereal does not die from disease when its mission is completed; and some men depart this life without a sign of disease in any one organ. That which is true of some might be true of all if the laws of health were obeyed. I shall be met here by the statement that men can and do take alcohol, and live to a great age, and do not die of disease induced by alcohol. I will, however, challenge any one to bring forward a single person who, as a child, has been accustomed to drink stimulants, and who has continued their use during upward growth to manhood, ever reaching old age at all, unless it has been by passing through the fire of ill-health and abstinence. I have in my mind now a number of families whose children have been brought up almost from infancy with daily doses of alcohol. I have seen several of those families become all but extinct by early deaths. They are worked up by the whip and bellows until the effete matter left behind has destroyed their power altogether, and if on others it has not
caused an early fatal result it has laid the foundation for diseases which have made the owner a permanent invalid. There are many such instances within my experience as a medical practitioner, which has extended now over a period of more than thirty years. It is true that there are many anomalies not fully understood at present. Some people do take great quantities of alcohol without suffering from its immediate effect, or even from those which I have indicated as most likely to follow. Scotchmen, for instance, in Highland districts, may take much whisky without succumbing to its influence; although the exceptions are not so numerous as are reported. I need not, however, dwell upon the exceptions. It may be that changes have been produced by the alcohol itself, which steels the possessors to the consequence of their own acts. Opium, for instance, may be taken so as to lose its toxic character, and may be given continuously in immense doses; but no one would be so insane as to argue from this that opium is not a poison, and no one on similar premises ought to argue that alcohol is harmless. The consumer of opium has a damaged mental nervous system, and the habitual consumer of large quantities of alcohol is not the man he would have been if he had let the habitual use of alcohol alone, and there is a break down in the long run.

But, say some of my friends, "How is it that ill-health and early death take place in the young, in those who have never tasted alcoholic liquors, and who certainly are not the children of the habitual users of strong drink. Let me be quite clear upon this point. I do not assert that all disease is due to alcohol, and that total abstainers do not suffer from disease as well as other people. There are many things besides alcohol to produce disease. Gluttony and lust, temper and poverty, the cupidity of men in selling unwholesome food, and the ignorance of men or their neglect of sanitary law, all claim their victims. I told you that every action of the body or mind produces a result in the physical and chemical condition of the body. The débris thus produced if not removed properly from the system, is a mass of ignitable material, ready at hand for evil purposes. Some constitutions habitually find difficulty in expelling these excreta, they are hereditarily more susceptible of outside influences than others; this is especially the case with those who are the descendants of the free livers of olden days. This is not the place to enter into the causes of these hereditary tendencies, but they are clearly due to parental influence. The children of men who have depended upon the whip and the bellows for daily "go" will not be able to stand against those influences which the progeny of the healthy man will scarcely feel at all.

It is time that I reverted to my propositions, viz., that alcoholic
drinks are not necessaries of life. Their action being, as I have detailed, it must be evident that their daily use is hurtful. I have been in the habit of treating disease for the past ten or twelve years without prescribing more than has been absolutely necessary in consequence of the habits of my patients, and I can most truly say that I have never had reason to regret the advice which has been given, but I can look back to the time when I thought a more free use of stimulants was necessary, and can feel regret at the damage which I now believe they caused to the best interests of my patients. Useful at times they may be as medicines, just as a mustard bath may be at times of the greatest service; but let the mustard bath be taken every day, and in the end nature rebels at the treatment. So it is with alcohol, a grand medicine in skilful hands, but, like the sharp knife in the hand of the young child, will only produce mischief if used by the unskilled and the ignorant man. Women of England I charge you in the name of God, and as you must answer for it at the Great Day of account, to determine that you will not be a party to the mischief which must follow from its daily use.

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THE MEDICAL PROFESSION AND INTEMPERANCE IN ALCOHOL.

BY A MEDICAL MAN.

During the last few months there have appeared in the correspondence columns of the British Medical Journal a considerable number of letters on the responsibility of the Medical Profession for the prevailing intemperance, especially among women. The discussion originated through the reception by Mr. Baker, of Brentwood, of a printed tract, entitled "A Woman's Appeal to the Medical Profession." The authoress of that appeal, Miss Hellena Richardson, is well known in the city of Bristol, and by temperance workers throughout the country, as an ardent supporter of total abstinence. That our readers may be enabled to judge for themselves as to the worth of the appeal, we give it entire.

"A WOMAN'S APPEAL TO THE MEDICAL PROFESSION."

"If you are about to prescribe alcohol, in any form, to ladies, as a convenient and pleasant remedy, stay a moment, and consider the probable consequences. Would you wish to give fresh justification to the general assertion—only too well founded—that it is the doctors who teach women to drink?"

"Will you deliberately, by your prescription, teach any one woman the habit of drinking?"
Do you think it right to prescribe what you believe may relieve the present malady, but is very likely to produce a far worse disease—even the liking for, and, by-and-by, the craving for strong drink?

Have you any right—if I may venture to ask you so strong a question—have you any right to lead the women who entrust their health to your care out upon the slippery path down which so many have gone, and are going, into disgrace and shame and death?

You know, as I do, that the woman who takes stimulants to relieve a sinking, is walking into a quicksand in which she may soon sink.

I earnestly beg you to study the other remedies which may answer the purposes of alcohol, and with no such dreadful risks, and to prescribe such instead; thus doing away, in your own case, at least, with the reproach justly cast upon your profession.

A physician lately said to me, ‘We are more blamed in this matter than we deserve. Women come to me at the hospital, and ask, “Please sir, may I take my glass of beer?” I see no especial reason for discontinuing it, and I reply, “Yes, you may.” And they go straightway to their charitable friends, and beg money to buy the beer and the porter which they say the doctor has ordered them to take!'

No doubt this is often done; but there is an easy remedy. When asked such a question, reply, ‘No! drink no beer, nor porter, nor spirits; they are sure to do you harm in one way or another. Drink water; nothing purifies the blood like water. Take cocoa, coffee, or tea, if you like; but for health and strength drink cold water.'

Had this always been the advice given to women when sick, hundreds and thousands now dying of drink, denouncing the doctor who brought them to such a fearful death, would be living—healthy, happy, and respectable.

When shall we cease to hear the despairing cry, ‘It was the doctor who first taught me to drink, and now I cannot resist the thirst; I must die a drunkard!’

And here there lies in the background another responsibility. It is pretty well proved that children inherit the tastes and tendencies of their parents, as well as their constitutions and diseases. Idiocy, madness, and that still more terrible disease, the craving for stimulants, will be the frightful inheritance which these unhappy women must bequeath to their children.

Shall this be so? It is for you, our medical men, to reply. It is you who possess the greatest power to influence in matters of health and diet. It lies in your power to decide the fate of thousands of the women of England.

Hellen Richardson.

It will not surprise our readers much that such pointed remarks as these should have given offence to some members of the profession. We are not greatly concerned to maintain the literal accuracy of every word in this highly rhetorical appeal; but this is very different from charging the authoress with uttering "transparent falsehoods," and from describing the publication as one "whose only characteristics are its virulence and mendacity." This, however, was the style in which Mr. Baker, writing, apparently in hot haste, on the same day as he received the appeal, chose to reply, or, rather, to repudiate it. The expression in the appeal, "that it is the doctors who teach women to drink," which seems to have specially aroused Mr. Baker's ire, is certainly, it seems to us, open to criticism. As it stands, it would imply that the drinking habits of women are wholly due
to the doctors. We are convinced that this is neither correct in itself, nor the correct meaning of the writer. The context shows that that meaning would be fully expressed by the words, "that the doctors (often) teach women to drink," and this statement can be abundantly proved. Mr. Baker also ridicules the assertion, that "hundreds and thousands are now dying of drink, denouncing the doctor," &c. This, again, is not literally accurate, but though it lays the writer open to a charge of exaggeration, yet it can mislead no one as to the facts of the case, or as to the intention of the writer. No one can imagine that, at any given moment, at least two or three thousand women are dying, all, in some set formula or other, denouncing the doctor, &c. But that large numbers of women, once respectable, have died through drink, are dying, or will die, and that many of these will in their secret hearts, or more openly, curse the day when they first sought relief from alcohol under medical advice, does not make much demand upon our imagination or credulity.

It would be absurd to suppose that in all cases of habitual drunkenness the origin or progress has been the same. But there is this feature in common, namely, that in all of them the effect of alcohol on the nervous system has been such that a craving for the drink has been established, and that the will-power has been so impaired in confirmed cases that no consideration of morality will prevent the inebriate from endeavouring to obtain it. Every medical man has come across such cases, and there can be no question whatever but that many of them have arisen from resorting to alcoholic drinks for the cure or relief of all kinds of complaints, and that this has often been under medical advice.

Miss Richardson has furnished cases, under the challenge of Mr. Baker, which certainly prove that such medical advice has had disastrous results. Strictly speaking they do not meet the demand of Mr. Baker, who will be satisfied apparently with nothing less than the production of the names and addresses of "hundreds and thousands of dying women, denouncing the doctor, &c." But they are quite sufficient to show to every candid mind that the recommendation of alcohol is a very different thing from the recommendation of cocoa or beef-tea, and that there is a danger attached to alcoholic liquors which does not pertain to non-intoxicants. Dr. J. J. Ridge furnishes two other cases of a similar kind, one of them that of a lady, who, alas! though dying a drunkard, did not denounce the doctor who started her on her fatal course, but loved her enemy to the last, apparently bereft of even that last spark of right feeling and common sense which might show itself in bitter, though vain, regret for the first false step. Dr. J. C. Reid very courageously furnishes other
cases from his own long experience. If, then, we reflect that these cases can be guaranteed by only three individuals, we may well believe that a vast number of sad histories of a similar kind are written in that book to be opened at the last great day alone.

Moreover, such cases are peculiarly difficult of demonstration. The mouths of those who could testify are often sacredly sealed; others who could "a tale unfold" maintain a studied silence; others, verily guilty, are sublimely unconscious of the after-result of their thoughtless recommendation—the very fact may have passed from the minds both of physician and patient.

We contend that while intoxicating drinks are used by a number of individuals that some of that number will become habitual drunkards. (This is not the whole of the evil, but that with which alone we are at present concerned.) Which particular persons will become the drunkards we cannot possibly tell beforehand: if we could we do not believe that anyone would deliberately start them on that career. In this case, however, we might recommend alcohol to those who never are to be drunkards with a clear conscience. Just in the same way we know that if a crowd is drenched with water from a fire-engine, some will catch cold, and this cold will in some cases result in inflammation and death, though no one could predict beforehand which those cases would be. For anyone to play such a practical joke with the knowledge that such a fatal result was certain or even probable, would be to make himself responsible for that result. The plea of ignorance will not avail, especially when previous experience has demonstrated the fact. The intention of the joker will certainly not modify the consequences in the slightest degree, and our moral sense cannot but regard his indifference as more or less culpable. The refusal to admit the probability of the consequence does not alter the fact, and though no one, except Omniscience, can gauge the degree of blame which any such wilfully blind person may deserve, yet we feel that in such a case "might have known" means also "ought to have known," and that all responsibility is not lightly to be repudiated thus.

Any one can or may understand that the indiscriminate recommendation of intoxicants is certain to manufacture some drunkards. The only plea, therefore, which can bar condemnation is, not ignorance, but necessity. What constitutes necessity different minds will differently determine. But we believe that there are few medical men who would undertake to say that they are infallibly certain that any particular case requires the administration of alcoholic liquors for the preservation of life. There may be a greater or less probability of its value for that purpose, but in the vast majority there would be alternative measures of equal value. Not that these cases of life and death are the chief, or, indeed,
frequent occasions of intemperance. In them the drug is adminis-
tered during the crisis, and may be abandoned immediately after,
whether it may have been of any use or not. But the danger
arises principally in those minor cases of malaise and ill-health
during convalescence, and for the relief of “sinking sensations” (as
Miss Richardson justly observes) and slight pains, in which the
alcoholic drink appears to give so much temporary relief, and is,
therefore, resorted to more and more frequently, until it has per-
verted the nervous system in its characteristic way. It is true
that a careful recommendation to observe rules as to time and
quantity will obviate some of the danger, but it will not totally
prevent it. The minimum, however, consistent with the use of
alcohol at all, can only be reached by the patient’s being supplied
with it in the form of medicine, of the nature of which she must
be in ignorance, and of which, of course, she must not be able to
get an unlimited supply.

Nevertheless, there are medical men who assert that they have
nothing to do with the moral aspect of their advice; that their
only duty is to recommend that which they consider best for the
recovery of the patient, who must bear all the blame of any abuse
of the remedy. We cannot admit this disclaimer. A medical
man does not escape from his duty to his neighbour by the fact
that he has acquired special knowledge of disease and drugs. On
the contrary, his responsibility is thereby tremendously increased.
His knowledge of the insidious action of alcohol should make him
far more cautious than any outside the profession, and his desire
for the material benefit of his patient can never give him liberty
to disregard his moral and spiritual welfare, to say nothing of his
remoter prospects in this life.

These considerations were well urged by Dr. Branson, who,
very pertinently, says—

“Do we not believe that if an epidemic disease were to break out and
destroy a fiftieth part of the number that are destroyed by alcoholic liquors
that the medical forces would be speedily in action to relieve and remove it.
“Finally, do medical men sufficiently recognise the moral aspect of this
question, or feel their true responsibility as the guardians of the public health?
and do we honestly believe that the questionable therapeutical value of alcohol
in any degree compensates for the unquestionable amount of evil wrought by
it; or, in other words, should we contend for the medicinal use of arsenic if its
wide-spread abuse and results were so painfully evident as is the case from
alcohol?”

We believe that this view of the subject must commend itself
to the mind and conscience of every thoughtful physician. No one
will contend that the medical profession is responsible for all the
prevalent drunkenness; but if the large majority of the profession
had condemned the habitual use of alcohol, both by precept and
example; even if they had only encouraged and assisted total ab-
stainers to persevere instead of ordering them to drink at the first opportunity, under the fear of death, the prevalence of total abstinence, and the consequent absence of drunkenness, would be vastly greater. To take but one case; how many thousands of young women have been induced to abandon total abstinence on having to perform the duties of a mother! And all these have been lost to the cause, and have, therefore, too often never influenced their children to abstain, while not a few have themselves become inebriates from this beginning. Yet, at the present day, eminent authorities condemn most strongly the employment of alcoholic liquors during lactation! Thus, Dr. King Chambers, an advocate of the moderate use of alcohol, in his book on diet, advises nursing mothers who are moderate drinkers that the less alcohol they take during this period the better for them. Shall we not have to admit, then, that in this one particular alone, the mistaken advice of the medical profession has been (and, we fear, in part still is) responsible for the value which the public attach to alcohol, and for some of the consequent intemperance?

We would fain hope that many medical men will lay this matter seriously to heart, and that they will realise the tremendous influence they possess in this question for good or evil, and decide to avoid all risk of the latter, by giving no uncertain sound on the use of intoxicating drinks. Even the non-abstainer may surely join Dr. Chambers, and say of alcohol, the less the better, not only during lactation, but at all other times also.

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ALCOHOLIC HEREDITY AS A CAUSE OF DIPSOMANIA.*

By Norman Kerr, M.D., F.L.S.

It is true that, in the words of Lord Althorp, “the cause of drunkenness is drinking,” and that if no one drank fermented wine or other intoxicating liquor there could be no such phenomenon as a drunkard. But there is no royal road to immunity from intemperance—no short cut to universal temperance by the absolute exclusion of alcohol from the world. This potent chemical agent has its legitimate uses in the arts, in science, and in therapeutics. We cannot get rid of it if we would.

We must, therefore—though we may by the spread of total

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Alcoholic Heredity as a Cause of Dipsomania.

abstinence, and the successful operation of sound prohibitory legislation, greatly lessen its power for evil—accept the presence of alcohol in our midst as an inevitable condition of modern civilised life.

It being beyond our power to wholly banish from our shores the powerful irritant narcotic which is the active agent in the production of the habitual inebriety which is so deep a stain on our character as a nation, the imperative duty lies on us to trace to their original source all the causes contributing to our national reproach.

Dipsomania has, it must be admitted, a moral and a religious aspect. It is as truly a sin against God as it is the terrible penalty of disobedience to the natural laws of temperance and health.

But dipsomania is something more. In some cases it may be the result of purely selfish indulgence—the unbridled gratification of acquired vicious tastes. In some, the dread infliction of confirmed drunkenness has insensibly stolen upon a highly nervous temperament, soothed by the beguiling strains of the syren—drink. In some, a debilitated morale has slowly, yet surely, succumbed to the powerful spell of the enchantress—alcohol. In some, a wearied brain and an overtaxed intellect have quickly fallen prostrate before the false hopes and fictitious strength vainly trusted in as the reward of devotion at the shrine of Bacchus. In short, a hundred different abnormal conditions of body and brain may tempt one to trust to the illusory hygienic and restorative protestations of the mightiest and falsest magician of modern or ancient time,

"The magic cup
Of rosy, red, life-giving wine,"

with the sad sequel we, as practitioners of medicine, are so often, in these days, called helplessly to behold—confirmed inebriety.

We must go farther back still to track the stream of intemperance to its remote source; we must pass by the present generation and extend our inquiry into the habits of our ancestors.

In many forms of disease we must look beyond the patient under treatment for the

"Fons et origo mali."

Cancer, phthisis, scrofula, and rheumatoid disorders, are well known as frequent heirlooms handed down from generation to generation. Physical, nervous, and mental ailments are all liable to descend from parents and grandparents to the hapless offspring. Special features, alike of body and of mind, are characteristic of individual families and races. In like manner, corporeal cerebral and mental diseases, induced by indulgence in alcohol, are seen to be transmitted as an hereditary possession.
But sad as is all this plenteous crop of inherited alcoholic disease, it is as nothing compared to the still sadder and more intense transmission of the drink-crave itself. Many a brilliant and high-toned man, towering above his fellows by the depth of his intellect and the loftiness of his purpose, has, after waging a hand-to-hand struggle with his hereditary tendency to excess in alcohol, fallen at last a victim to the tremendous might of his ancestral foe. Not a few there are of those who have kept themselves scathless, and have passed through the fiery ordeal unharmed, who have achieved their undeniable temperance only by a life-long warfare to the knife with the latent hereditary enemy which was ever ready, on the slightest provocation, to spring upon them and fold them in a fatal embrace.

Whatever their rank or their accomplishments, the subjects of the inherited drink-crave can totally abstain, or can drink to excess, but drink temperately they cannot. With such the moderate use of intoxicating drinks is a simple impossibility. So irresistible is the might of the hereditary alcoholic taint—all the more dangerous that it lies hidden within their very being—that even the thoughtless medical prescription of an intoxicant by a physician, and a slight sip of fermented wine at a sacred service on the injunction of a conscientious but uninformed priest, have been known to ensnare the hereditary legatee of alcohol and thrust him from his high estate of abstinence and safety. On a review of even a victorious career, the human partner in the indissoluble union between hereditary alcoholism and weak human nature can truly say in the language of Wallenstein's Duchess:

"In this unhappy marriage what have I
Not suffer'd, not endured? For even as if
I had been link'd on to some wheel of fire
That restless, ceaseless, whirls impetuous onward,
I have pass'd a life of frights and horrors with him,
And ever to the brink of some abyss,
With dizzy headlong violence he whirl'd me."

Many dipsomaniac patients have been under my care, who have been indebted for their besetting trouble—whether you call it vice or disease matters not—mainly to the selfish conviviality of their progenitors. In one instance, where every member of the family was a dipsomaniac, the father, mother, and grandfather had been conspicuous devotees to Bacchus. Verily the sins of the fathers are visited even unto the second and third generation!

Another lamentable family history presents itself to my mind. The father died from alcoholic softening of the brain. The six children all became habitual drunkards. In one of the most painful cases with which I have had to deal, that of an educated, intellectual, and accomplished lady, the family failing was shared
Alcoholic Heredity as a Cause of Dipsomania.

by all her sisters. The father and grandfather were both addicted to drink.

To me there is nothing, in the whole range of medicine, clearer than the hereditary transmission, not only of mental and bodily disease, resulting from intemperance, but of the veritable drink crave itself. As Plutarch puts it, "one drunkard begets another;" and it has been in cases of inherited dipsomania that I have found it most difficult to effect a cure, or even to succeed in mitigating the severity of the paroxysms. Perhaps the most painful duty in my professional life has been to helplessly stand by and sadly witness, with no power to save, the whole mournful tragedy of heredity in alcohol:

"Where sense ran savage, broke from reason's chain,
And sung false peace, till smothered by the pall."

It should never be forgotten that the overpowering and almost irresistible craving for strong waters may descend to children from parents who may not have been noted for riotous excess. Some human beings are so constituted that they can consume immense quantities of even the strongest alcoholic drinks with apparent sobriety. I have known "seasoned casks" take daily three, four, or six tumblers of whiskey toddy after dinner, in addition to wine during the meal and sundry nips in the earlier part of the day, and yet never appear in the least intoxicated. But these "judicious bottleholders" may have children whose nervous system is more impressionable and susceptible; and the so-called "moderation" of the sire may blossom into confirmed inebriety in the son. Of this development of the alcohol drink craving I have seen several typical examples.

The straits to which the subjects of the inherited drink taint are, by the conditions of their fell birthright, subjected from their earliest years, appeal to us in the most imperative terms for wise and just legislative action. Whether it be right to throw the sanction of the law over the public temptations to drinking which abound throughout the kingdom, or even to allow the continuance in our midst of these licensed traps for the snaring of the heavily handicapped subjects of the law of heredity in alcohol, is not for us to discuss to-night. But I cannot refrain from the expression of the opinion, that such an act of righteous legislation as the effectual prohibition of the liquor traffic would be as advantageous to the common weal as it would be just and merciful to the struggling ones whose piteous case we are now considering.

Meanwhile, however, while the narcotic poison which causes all our inebriety is almost everywhere openly exposed for sale, can we not do something for the shattered and the wrecked dipsomaniac himself? The Habitual Drunkards Act of 1879,
inefficient as it undoubtedly is, has not yet had a fair trial. There is but one licensed retreat I can conscientiously send an inebriate to, and that one is only for the wealthy. For the poor (and how many of our confirmed inebriates have reduced themselves to poverty!), as well as for the drunkard of moderate means, there is at present no place of refuge where he can make an honest attempt at reformation or cure, free from the seductive and all-powerful influence of his invertere foe.

In the establishment, on a sound and permanent basis, of the Dalrymple Retreat, all can cordially unite. The brewer, the distiller, the wine-merchant, the publican, and the abstainer should all alike welcome so hopeful an effort at the restoration to health, both of body and mind, of those unhappy weak brethren who have fallen under the dominion of the slavery of drink. Let us, as members of a profession whose proudest boast is their special concern for the feeble and the helpless, do everything in our power to make the proposed institution, bearing an honoured name, such a success, that, by its means, cases of so apparent hopelessness may be cured, as will convince the legislature and the country of the propriety of conceding more extended and more adequate compulsory powers.

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HEALTHY HOMES.*

There are few more useful methods of improving the health of the masses than the conveyance of instruction in sanitation in simple and easily-comprehended language. In this valuable department of practical sanitary work Dr. Stanley Haynes has done good service. The brochure before us comprises the extended notes of a lecture delivered to the inhabitants of the healthful and invigorating districts of Malvern. There is much sound teaching on the true principles of sanitary reform in this unpretending pamphlet, and the judicious inquirer will find in it very important and invaluable hints.

Whilst thus unstintingly commending the general sanitary teaching of Dr. Haynes, it is incumbent on us to point out his halting opinion on intoxicating drink, and the unsoundness of his deliverance on "nourishing stout." Dr. Haynes very justly reprobates the too-common practice of men pouring more or less undiluted spirits down their throats, as "destroying their diges-

tion.” He, in another place, in insisting on alcohol, “if taken at all, being taken in a weak form,” enforces the necessity for this dilution on the ground that “alcohol checks digestion.”

Yet with this thorough knowledge of the anti-digestive action of alcohol, Dr. Haynes, while holding that water, cocoa, coffee, and tea are the best drinks, teaches that, as a beverage to follow a solid meal, beer may sometimes be taken, or, exceptionally, a little spirit added to the water! Does not physiological research clearly show that, for the purpose for which this beer and spirit allowance is recommended—the reduction of solid food to a fluid form to promote absorption—the one essential liquid is water, and, as Professor A. Buchanan has well put it, every addition of alcohol is simply an adulteration? We may go further, and aver that the beneficial soluble properties of “the water of life” are only impaired by any alcoholic adulteration.

Again, what warrant has our author for the assertion that “alcohol is most advantageous to many of those who have been brought up to its moderate use”? We know of none. Alcohol is not an element of our physical or mental organisation, and we have yet to learn that the highest state of health is incompatible with total abstinence. Science has adduced no proof of the usefulness of alcohol as a beverage; but, on the contrary, bears witness that intoxicating liquors are neither necessary nor useful as an ordinary article of diet. The experience of an innumerable array of witnesses, in every rank and condition of life, and in all circumstances, affords ample confirmation of the verdict of true science. At the best alcohol is but a luxury, as Sir Henry Thompson says, “always to be paid for.”

Will it be credited that, after all the light thrown by chemistry and physiology in recent years on the properties and action of alcohol, Dr. Haynes, while prohibiting spirits, allows intoxicating liquors to the nursing mother. “If necessary, she can have stout or ale, but not more than half a pint of either twice a day.” The only useful element in malt liquors, in such a condition, lies in the diastase they contain. Would it not have been wiser, as well as more accurate, if Dr. Haynes had stated that in so far as fermented malt liquors contained alcohol they were injurious, and that their useful constituent—diastase—could be had, at much less cost, in combination with other valuable food elements, and without the dangerous narcotic, in maltine and the various non-alcoholic malt extracts?

Dr. Haynes is too lax in his dealing with fermented wines. While he admits that sherry is often injurious from its acidity, and port from its astringency and sweetness, he apparently approves of the use of clarets, hocks, Rhenish, Hungarian, and Australian wines, as he says these latter are usually free from
the stated drawbacks of sherry and port. This loose semi-approval of a large group of wines, among which are to be met many heady and strongly alcoholic varieties, is, in our judgment, unworthy alike of the profession and the reputation of our author.

The impression on the mind after a perusal of the pamphlet is that, in the author's opinion, ardent spirits are powerful articles, their use involving very often the risk of excessive indulgence, which, when taken, should be largely diluted with water, and which ought to be resorted to "only when required." But with regard to wine, there is a different impression left on the reader's mind, viz.: that though port and sherry are apt to cause indigestion and other physical disorders, fermented wines in general are, in moderation, harmless and useful. That this is sound doctrine few modern physiologists will affirm. Very different was the emphatic declaration of the leading physicians and surgeons of this country thirty years ago, when they boldly characterised the use of all intoxicating drinks as unnecessary, and deliberately stated it as their belief that total abstinence from all intoxicants would greatly promote the health, prosperity, morality, and happiness of the human race. The conclusions of modern physiological inquirers are to the same purport. As Mrs. Ernest Hart wisely said, in a recent lecture, "Alcohol is not food but physic; it is a useless luxury and extravagance—a potent medicine and poison, and a dangerous article of daily diet."

While we have reluctantly discharged the painful but imperative duty of exposing the error and unsoundness of some of Dr. Haynes' observations on strong drink, we gladly acknowledge the candour and impartiality which he has displayed in dealing with the question of stimulants. Most cordially do we commend his advice to keep alcohol from children. His remarks on this important head are so true and apposite that we owe our readers no apology for an extract:—"I believe children ought to be reared without the taking of alcohol in any form. No kind of cordial, spirits, or other nostrum should be given by the mother or nurse to make the child sleep." Dr. Haynes bears ungrudging testimony to the "vast good" achieved by temperance societies, and also unreservedly confesses that those adults "who can do without, are better without alcohol, because the amount of stimulation produced by it is followed by a corresponding amount of depression of vital force." From these and other admissions we judge that Dr. Haynes is thoughtfully considering the whole question, and we have a strong hope that he will, ere long, see his way to the only definite solution of the drink problem—total abstinence. That the spirit in which his most interesting and instructive work
is written indicates an advance in the general medical mind, there can be little doubt. He is too ardent a philanthropist, and too impartial an inquirer, to willfully shut his eyes to the true teaching of science and experience, and we cannot doubt that he will speedily discern the truth about alcohol. When the scales fall from his eyes, the cause of temperance will have no doughtier champion; under our bloodless banner will fight no worthier soldier than the accomplished author of the popular little treatise now before us.

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**Proceedings of the British Medical Temperance Association.**

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The Quarterly General Meeting of the Association was held in the rooms of the Medical Society of London, on Friday, February 11th, 1881. Dr. Richardson presided. The minutes of the previous meeting having been read and confirmed, Dr. G. B. Clark gave an address on "Ava, the Polynesian Intoxicant: its Physiological Action and Therapeutical Uses." A discussion ensued, in which the comparative action of various intoxicants was reviewed by Drs. Richardson, Clark, Drysdale, Gray, Kerr, and Ridge, after which a vote of thanks was unanimously accorded to Dr. Clark.

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NOTICE.

The Annual General Meeting will be held towards the end of May.

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NEW MEMBERS.

D. De Vere Hunt, Esq., Bolton. Dr. Pullin, Sidmouth.

NEW ASSOCIATES.

B. G. Pullin, Esq. St. Bartholomew's Hospital.
P. M. Scatiff, Esq. St. George's Hospital.

Enfield, March, 1881. J. J. RIDGE, M.D., Hon. Sec.


The Use and Abuse of Alcoholic Stimulants.

Miscellaneous Communications.

THE USE AND ABUSE OF ALCOHOLIC STIMULANTS.*

By Professor Thomas R. Fraser.

By "stimulants" I think we all mean beverages that are capable of producing in large quantities intoxicating effects. I do not think, when we use this word, we generally mean such substances as tea and coffee, though they also may be correctly spoken of under the same designation. The stimulants I wish to say a few words about tonight, are such beverages as whisky, wine, and beer, all of which owe their leading properties to a liquid contained in them called alcohol, which you may know in its nearly pure form of "spirits of wine." For this reason, they are spoken of as alcoholic stimulants. In whisky, wine, and beer, the alcohol is mixed with water, and, accordingly, the alcoholic strength of these beverages varies considerably, as you will see from the table:

Table I.—Percentage by volume of absolute Alcohol in several common Alcoholic Beverages, with the quantity of the Beverage representing about one ounce of absolute Alcohol.

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<td>Madeira</td>
<td>... ... ...</td>
<td>16 ″ 22</td>
<td></td>
</tr>
<tr>
<td>Marsala</td>
<td>... ... ...</td>
<td>15 ″ 25</td>
<td></td>
</tr>
<tr>
<td>Light Wines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bordeaux (Clarets)</td>
<td>6 · 8 ″ 13</td>
<td>10</td>
<td>10 ounces, or 4 wine glasses.</td>
</tr>
<tr>
<td>Rhone</td>
<td>... ... ...</td>
<td>8 · 7 ″ 13 ″ 70</td>
<td></td>
</tr>
<tr>
<td>Champagne</td>
<td>... ... ...</td>
<td>5 · 8 ″ 13</td>
<td></td>
</tr>
<tr>
<td>Malt Liquors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beer</td>
<td>... ... ...</td>
<td>1 · 2 ″ 10</td>
<td>20 ounces, or 2 tumblers.</td>
</tr>
<tr>
<td>Ale</td>
<td>... ... ...</td>
<td></td>
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</tr>
<tr>
<td>Stout</td>
<td>... ... ...</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Porter</td>
<td>... ... ...</td>
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They may also contain sugar, acids, and other substances which produce some differences in their effects. Their chief effects, however, depend on the

* From a Lecture "On the Use and Abuse of Stimulants and Tobacco," delivered in the Free Assembly Hall, Edinburgh, January 29, 1881.
The Use and Abuse of Alcoholic Stimulants.

alcohol they contain, and for the sake of simplicity, therefore, we may ignore the other substances, and consider only the effects of the alcohol.

Let us consider these effects; but before doing so in detail, I should first point out that they vary greatly according to the quantity that is taken. This is so obvious, I need scarcely dwell upon it. We know that with everything that produces effects the quantity that is taken modifies the degree and apparently even the kind of the effects. A small pinch of salt is a pleasant and almost indispensable addition to the meat or potatoes we eat; but one or two tablespoonsfuls of it produce very quickly sickness and vomiting. A very little whisky and water makes one feel warm, and perhaps a little light in the head; a wine glassful of whisky will make many people intoxicated and unable to walk steadily or speak distinctly; and a tumblerful will soon render them insensible, and probably act so decidedly as a poison that it will quickly produce death.

In speaking, therefore, of the effects of alcoholic stimulants, we must bear in mind the differences in the effects that are due merely to the differences in the quantity taken.

First let me speak of the effects or action upon the stomach and digestion. When a small quantity is taken, the juices which are poured out from the stomach walls, and which are necessary for the digestion of food, are increased, and the food is more rapidly and thoroughly digested. This occurs only if the small quantity is mixed with much water — is well diluted, in short — and unless it be well diluted, digestion is not made more rapid, but it is impeded and less perfectly performed than it should be. Heartburn, pain, and other signs of dyspepsia follow, and they become uncomfortable and only too familiar monitors, whose hints are, however, very frequently neglected by those who habitually partake of undiluted or insufficiently diluted spirits when there is little or no food in the stomach. If the insufficiently diluted spirit, or even if sufficiently diluted spirit, be often taken, then the structure of the stomach becomes changed. It becomes inflamed and thickened, and incapable of producing a large enough quantity, or a proper quality, of gastric juice to digest food; and from this it follows that dyspepsia of a lasting or chronic kind is caused.

When the alcohol is introduced into the stomach, however, it does not remain there. Part of it at once passes into the blood-vessels in the walls of the stomach, and is in that way carried through the whole body. Many other parts of the body besides the stomach are consequently affected by it. Even a small dram, for instance, makes the face, neck, and hands redder than they previously were; showing that the state of the circulation has been modified. If we examine the circulation a little more, we will find that the pulse at the wrist beats faster, and becomes larger and more full, and that the strokes of the heart are stronger. When these changes take place, we know that the blood is flowing more quickly and in larger amount; and that this implies an increase in the supply of blood to the different organs of the body. Such an increase in the supply of blood to the different organs of the body. Such an increased supply is very likely to be followed by an increase in the activity of the organs receiving the blood, for their activity depends partly upon the quantity of blood they receive. I wish to direct your attention particularly to this action of alcohol, for it is the action which has led chiefly to the reputation alcohol has gained as a stimulant; as a substance which stimulates or excites, for example, the appetite, or the digestion, or the brain, and which makes it remove the general state of the body which we speak of as fatigue. Now, I think there can be no doubt that it does all this; but you are not to think that it is the only substance which can do it, and much less are you to think that it can be used for this stimulating purpose without risk. The conditions in which it may be employed are those in which the parts of the body I have referred to are in an abnormal or not perfectly healthy state, and accordingly it should be used as a stimulant only in those states. In a healthy state, the
stimulating action results in the production of injurious rather than of beneficial changes, even if only a moderate quantity be taken, and much more if a large quantity be taken; or if any quantity able to produce distinct stimulation be frequently taken. If, indeed, a large quantity be taken, stimulation is not observed, but an opposite effect. The large quantity undoubtedly acts as a poison, quite as distinctly as arsenic or prussic acid: and in books on poison, instances are recorded in which death has followed a short time after the drinking of large quantities of alcohol in the form, for example, of whisky.

The stimulating effect upon the circulation is, in other respects also, of an undesirable description, and it is not generally productive of real benefit to the individual. For example, it has led to the notion that alcohol is able to make one warm, that it is a substance that raises the temperature of the body. This notion is very much due to the sensation of heat, to the glow which results from the blood-vessels of the skin becoming dilated. It prompts the street porter to make frequent visits to the convenient public-house during cold weather, and the driver of the stage-coach to take "a glass" at each inn before whose door his coach draws up. But it is entirely erroneous for them to suppose that each glass of whisky actually increases the temperature of their bodies. The dilated blood-vessels which suggest to them that alcohol is a warming substance, in reality cause a reduction of temperature, by permitting a rapid cooling of the blood when the surface is exposed to cold; and therefore the street porter soon fancies that another glass of whisky would do him good, and the coachman is only too impatient to see the sign-post of the next inn. The dilated blood-vessels also permit a sudden cooling of the blood to take place; and so it is that diseases of the kidneys, of the liver, and of the brain, which are of frequent occurrence in those exposed to vicissitudes of climate, are not altogether to be explained by climatic influences.

This dangerous or bad effect of alcoholic stimulants has, I have little doubt, been productive of much injury during the Arctic winter which I trust has now left us. We know that it actually does so in the Arctic regions. Travelers have found that in any shape they are not only completely useless, but positively injurious. They stimulate for a short time, and make one feel warm for a short time, but exhaustion occurs more quickly, and the cold becomes more difficult to bear when they are used. The last Arctic Expedition from this country—that of Sir George Nares—was not so successful, you may remember, as everyone wished; and the committee which inquired into the causes of its failure had a great deal of evidence brought before it by the officers and sailors who took part in the expedition, and also by many former Arctic travellers, as to the value of stimulants and different foods in cold climates. I see that Admiral Inglefield—with whom I served as a member of the committee—has written a letter in which the result of that evidence is very fairly stated. It was that to take alcoholic stimulants to keep out cold is a fallacy, and that nothing was more useful for that purpose than a good fatty diet, with hot tea or coffee, and not spirits, as a drink.

This was also the experience of the leaders of Napoleon's campaign into Russia, and the monks of St. Bernard find that death from cold is hastened by alcoholic drinks.

Let us now consider if the nutrition of the body is in any obvious manner affected by alcohol. It is every day observed that many drinkers of alcohol grow stout, and even uncomfortably fat. The explanation of this is to be found in the fact that alcohol lessens the weight of substances in the body, whether these be of the nature of food or of formed tissues, and also somewhat facilitates the absorption of the fatty portions of the food from the stomach. We accordingly see why those who drink alcohol even moderately, especially if at the same time they consume food rich in fat (or, what leads to the same result, in sugar or starch), are apt to become stout from
a deposit of fat taking place under the skin; and why those who take alcoholic stimulants immoderately are, in addition, very likely to have fat deposited in some of the organs of the body where its presence constitutes the disease, fatty degeneration.

We are, also, able to understand why stimulants, which not only stimulate, but also lessen the changes in the constituents of the body and of food, are for this reason specially injurious to young persons. The forming of the tissues and structures of which the body is composed requires that the constituents of these tissues, and the foods from which they are made, should be allowed actively to rearrange themselves into appropriate forms and compounds, and everything which interferes with these rearrangements retards growth and nutrition. As growth and nutrition should be allowed to proceed unchecked in persons whose bodies are growing, alcoholic beverages must act most injuriously on young persons, and, apart from every other reason, their frequent use, and much more their use as daily articles of consumption by children who are not suffering from illnesses which may require them to be given medicinally, is undoubtedly prejudicial to their physical development.

It is, however, commonly asserted that alcoholic stimulants are foods. A great deal of trouble has been taken to find out if this is the case or not. I think some of the most satisfactory, because eminently practical, observations that exist to assist us in deciding this very important question have been made by a distinguished physiologist and physician of America, Dr. Hammond. He tested the food value of alcohol upon himself in this way: During a few days he lived on a diet that was sufficient to maintain the body at the usual weight. During each of these three series of days he daily took the same, and only a moderate quantity of alcohol in the form of wine. He found that the addition of alcohol had the effect of increasing the weight of the body, whether the food was sufficient, insufficient, or more than sufficient in amount—a result which you are not unprepared to learn from what I have already told you of the effects of alcoholic stimulants upon nutrition. He found, however, more than this, for while the alcohol seemed to supplement the sufficiency of food when an insufficient diet was taken, it produced disturbances in health when the food was either sufficient, or excessive in amount—such disturbances, for example, as palpitation, rapid pulse, dyspepsia, laziness, and indisposition for mental or physical exertion; the disturbance of health being greatest during the days in which an excessive amount of food was taken.

There is one lesson, at any rate, which these experiments most emphatically teach, and that is that alcoholic stimulants are altogether unnecessary as foods where a sufficient quantity of ordinary food is being taken. When the food is sufficient, or more than sufficient, they produce disturbances in health, some of which I have told you of. They were produced within the very few days during which Dr. Hammond’s experiments were continued. But in the numerous experiments for objects totally unconnected with science, which are being made on all sides, and by all classes, the use of the alcoholic stimulants is not restricted to a few days or even weeks, and the effects produced are not the mere temporary ones that I have mentioned. These temporary effects are to be explained by the alcohol acting directly upon the stomach, and then, after it is absorbed into the blood, acting upon the heart and blood-vessels, the brain, liver, and many other important organs. If such consequences can follow an action restricted to a few days, it would be foolish to suppose that more serious and more perma-
ment effects will not follow on an action extending over months and even years. It would also be contrary to the facts daily brought under notice to make this statement. We physicians have, unfortunately, only too good reason to know that the stomach becomes unable properly to digest food, that the brain becomes enfeebled, that the liver and kidneys become unable to perform their necessary functions, and that the heart and blood-vessels become unfitted to circulate the blood, as a result of disease in the structure of each of these organs, directly caused by the habitual use of alcoholic stimulants in excessive quantities, and even in quantities which many persons would not regard as excessive.

One of the series of experiments I have referred to indicates that alcohol may act as a food. Its applications as a food are very limited. It may supplement an insufficient dietary, where insufficiency is an unavoidable condition; and illustrations of this use of it are to be found in the record of sieges, as in that of Paris during the Franco-German war. It is to be recollected that it is an expensive food, and also that, while it acts as a food, it at the same time lessens the activity of nutrition, upon which the production of force depends. Men undergoing great and prolonged physical exertions work as well, if not better, without alcohol as they do with it. The experience of recent campaigns which have been successfully conducted on total abstinence principles, have proved that men in a healthy condition, and supplied with a sufficient amount of food, retain their health, and are capable of performing the most arduous labour, in every variety of climate, without alcohol. And further, in some of these campaigns opportunities were afforded for observing that the addition of alcohol to the diet may actually diminish the capability for prolonged physical exertion.

When we direct our attention to mental work, I believe the same conclusion must be arrived at. The stimulating action on the brain of quantities far short of intoxicating, is accompanied with a paralysing action which seems most rapidly and powerfully to involve the higher faculties. Mental work may seem to be rendered more easy, but ease is gained at the expense of quality. The editor of a newspaper will tell you that, if he has been dining out, he cannot with confidence write a leading article until he has allowed sufficient time to elapse for the effect of the wine he has drunk in moderation, to pass away; and even the novelist, whose brain-work is in the regions of imagination, will relate a similar experience.

Now, ladies and gentlemen, I have to some extent illustrated the results that follow the use of alcohol and the injurious consequences that follow its abuse. The latter, as we have seen, include the production of several diseases; and, as you might expect, these diseases have an effect upon the duration of life. Let me now direct your attention to some tables in which this effect is plainly shown:

| Table II.—Ratio per cent. from the undermentioned Causes to Deaths from all Causes. |
|---|---|---|---|
| Head diseases | 9710 | 15176 | 20720 | 2710 |
| Digestive organs (especially the liver) | 6240 | 8377 | 11994 | 233 |
| Respiratory organs | 33150 | 27843 | 23676 | 2298 |
| Total of the above three classes | 49100 | 51396 | 56390 | 7338 |
TABLE III.—Expectation of Life among the Temperate and Intemperate.
(Derived from rather limited data.)

<table>
<thead>
<tr>
<th>A Temperate person's chance of living is—</th>
<th>An Intemperate person's chance of living is—</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 20 = 44’2 years.</td>
<td>At 20 = 15’6 years.</td>
</tr>
<tr>
<td>“ 30 = 36’5 ”</td>
<td>“ 30 = 13’8 ”</td>
</tr>
<tr>
<td>“ 40 = 28’8 ”</td>
<td>“ 40 = 11’6 ”</td>
</tr>
<tr>
<td>“ 50 = 21’25 ”</td>
<td>“ 50 = 10’8 ”</td>
</tr>
<tr>
<td>“ 60 = 14’285 ”</td>
<td>“ 60 = 8’9 ”</td>
</tr>
</tbody>
</table>

TABLE IV.—Mortality among Intemperate Spirit and Beer Drinkers.

| Spirit drinkers ... | ... | 5’996 per cent. (nearly 60 per 1000). |
| Beer drinkers ...   | ... | 4’597  ” (nearly 46 per 1000).       |
| Spirits and beer drinkers ... | 6’194  ” (nearly 62 per 1000).       |

This effect upon the duration is also shown when a comparison is made between the expected and actual claims in the temperance and general sections of insurance companies. In the case of one insurance company, the results of such a comparison have been communicated to me through the kind interest of one of my colleagues, Professor Calderwood. It shows that while the claims in the temperance section are 30’5 per cent. below the expected claims, in the general section they are only 0’7 per cent. below the expected claims.

The statements I have now laid before you are sufficient to show that the use of alcohol is very limited, while its abuse is productive of many injurious consequences. Its employment as a daily beverage cannot be justified on the ground that it increases the capacity for work, that it makes the body warm, or that it acts in ordinary conditions as a food. We are entitled to assert that the chief justification that can be advanced is that it is a luxury. No doubt, to many, the reprehensible pleasure of intoxication, in some of its degrees, is the main inducement that leads to abusive indulgence in it. In that case, it certainly leads to, if it be not a mere evidence of, mental and physical degradation. But, whatever be the inducements to immoderation, we must not conceal from ourselves that it is often originated and strengthened by erroneous notions regarding the effects of alcoholic stimulants, and by the condition in which many persons exist.

Too often a craving for alcohol is originated and encouraged by insufficient and badly cooked food, and by the overcrowding and the defective ventilation of dwelling-houses. The removal of the erroneous notions to which I have referred will probably effect much good; and a great reduction in the amount of intemperance may be expected to follow the improvements which are now being carried out in the sanitary condition of our large cities.

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ALCOHOL IN MEDICAL PRACTICE.
—Dr. J. James Ridge, the hon. sec. of the British Medical Temperance Association, has republished in cheap pamphlet form a paper he read at a conference in Bristol in October last, in which he deals with the question: "What are medical men to say about alcoholic beverages?" Without entirely following Dr. Ridge in all that his deductions lead to, we are prepared to grant that he has very much evidence on the side he supports; and, further, that an altogether unjustifiable amount of indiscriminate stimulant-ordering is indulged in by physicians.—Medical Press and Circular.
DEFECTIVE NERVE-POWER AS A PRIMARY CAUSE OF DISEASE, WITH ITS SPECIAL RELATION TO DIPSOMANIA.*

By Stephen S. Alford, Esq., F.R.C.S.

Much of my time of late has been devoted to efforts for promoting the recovery of dipsomaniacs. Those lapsing into dipsomania are generally of a highly nervous, sensitive, lively temperament. This condition often has its commencement in mistaken efforts to sustain exhausted nerve-power, arising from continued overstrain, and irregular work at high pressure; or from hereditary inability to endure the ordinary stress and troubles of life; or from a system exhausted by indulgences and late and irregular hours; or even by indolence and ennui, each and all being modified by circumstances of society and atmospheric and climatic conditions. In studying these cases and their etiology my attention has been directed to the harmful effect produced by the above causes acting on defective nerve-power.

As an old practitioner I do not pretend to enter into the new physiological or pathological researches as to molecular disarrangements, but trust the few practical observations I can make may lead to a discussion on this subject. Surely the effect of low nerve-power is not sufficiently recognised as a primary cause of disease. If the nervous system, including the cerebral, spinal and sympathetic centres, with the sensorial and motor nerves distributed over the body, form its working, regulating, and protecting power, it is evident that their defect, or disarrangement, more or less interfere with the functions depending upon them. We know for instance that even when the nerve-power is only temporarily defective, the controlling influence of the vaso-motor nerves may so fail that the smaller blood-vessels lose their elasticity, and, becoming distended with blood, produce the appearance seen in blushing. We further see this in the face of the drunkard, as the effect of repeated stimulation; the vessels, from being frequently dilated, become at length, permanently enlarged.

Does not deficient nerve-power, as exhibited in the form of insufficient control over the vaso-motor nerves, cause the first dilatation of the smaller blood-vessels, which by being intensified, or frequently repeated, may pass into inflammation? Or, further, by producing a modified, increased flow of the vivifying stream may not this defective nerve-power so interfere with the nutritive processes as to cause perverted deposits and dangerous structural changes, as exemplified in tuberculosis, cancer, and other destructive formations, which occur in an asthenic condition of the system? Thus what is ordinarily a healthy reparative process becomes in our system, by defective controlling nerve action, a destructive power which may end in death.

The effect of defective, or irregular nerve-power is also evident in glandular secretions, on which depend the functions of important organs, the natural secretion being either increased, diminished, or perverted. This is exemplified by the action of the nervous system in producing a deficiency or superabundance of bile, or in the formation of an excess of sugar, as in diabetes. Similar disarrangements of healthy action may occur in any of the secreting organs when the exciting, controlling nerve-power is out of gear. Most of the ailments from which we suffer seem to depend, in the first place on defective nerve action.

As preservers of health it behoves us to endeavour to arrest the evil at its source; we must not treat symptoms alone: much time and suffering may be saved by tracing a disease back to its primary cause, so as to have reliable principles of action.

* A Paper read before the North District of the Metropolitan Branch of the British Medical Association, March 24th, 1881.
Defective Nerve-Power as a Primary cause of Disease.

By thus recognising the primary disturbing cause, and preventing the first run down of nerve-power, much may be done to arrest disease.

The neurasthenic or low nerve condition is first recognised by lassitude, as even in a more marked form in the utter prostration which precedes acute attacks of disease. Whenever we feel tired and overdone, Nature plainly tells us she is exhausted, and will not be neglected with impunity. To force her by stimulants to continue work is a dangerous experiment, which, if often repeated, will sooner or later end in a complete break-down. But while yielding to this needed repose, other functional derangements may need attending to.

Insomnia, with drowsiness and gaping, is a distressing condition arising from cerebral exhaustion; it does not so much produce special local affections as a miserable misanthropic state. The true restorer from this condition is rest, with a carefully regulated diet, avoidance of stimulants, and general attention to the secretions; these may be beneficially supplemented by mild nerve tonics.

Sick headache is an early symptom of nerve exhaustion, and the rest which it enforces upon us often prevents other dangerous attacks. Sick headaches chiefly prevail during the more anxious and active period of life—between the ages of fifteen and fifty.

Hay fever is another nervous idio-syncrasy attacking those whose nerve powers are on the stretch; barristers and other close mental workers being especially liable to it.

There are numerous morbid fears arising from deficient nerve-power, such as fear of places, fear of society, dread of being alone, apprehensions of various kinds—causeless, but real and distressing; fear of everything and everybody. Any function may be more or less disturbed, simulating real disease, and in this respect resembling hysteria, although hysteria generally arises from some special local cause. Spinal exhaustion is manifested by restlessness and physical excitement.

Dr Beard, of New York, has devoted special attention to this subject. For its fuller treatment I refer you to his numerous publications. He calls this nervous exhaustion neurasthenia.

The past neglect of this negative nerve condition has resulted in much erroneous treatment, and often the aggravation, rather than the alleviation, of disease.

Exhausted nerve-power may arise either from excessive, late, or irregular mental work, unhealthy employments, contaminated air, intemperance in any form, indolence or ennui, climatic influences, or the exactions of society, and other apparently unavoidable artificial conditions of life. It frequently arises from hereditary causes. Unless brought under early and careful treatment, neurasthenia may lead to melancholia, dipsomania, epilepsy, insanity, and other distressing conditions. The treatment must be chiefly directed to general regimen, aided by mild nerve tonics and electricity.

Dipsomania, or inebriety, is defined by Dr. Beard as "a fundamental disease of the nervous system, primarily of a functional character."

Dipsomania, as well as insanity, chorea, neuralgia, and other diseases of the nervous system, must be considered scientifically as belonging to the departments of neurology and psychology. It is associated with periodic mental depression insomnia general nervousness, tremors, mental irritability, hallucinations, moral decline, and, in some cases, trance, any or all of which conditions may precede, accompany, or follow an attack. These symptoms, however, are not found in all cases, nor in the same case at all times, but each paroxysm is invariably connected with an irresistible craving for stimulants opium, or chloral.

Dipsomania and mere drunkenness are two distinct conditions. The former is irresistible, independent of the ordinary efforts of the will, often quite unconnected with temptation, and arises from an individual condition; whereas drunkenness depends more on outside allurements. Like neuralgia, hay fever, and insanity,
dipsomania is periodic; whilst the vice drunkenness is constant, or only modified, by external circumstances, dipsomania may be either hereditary or the result of an inherited nervous diathesis, and transmitted like other family diseases. Drunkenness, it is true, may arise from an inherited vicious temperament, but can be distinguished by the character of the individual.

Dipsomania or inebriety may be sudden in its attacks following—

The action of physical injury, direct or indirect, such as blows on the head, concussions of the brain, or spinal cord, sun-stroke and its effects, any traumatic injury that disturbs the harmony of the organism; diseases of both a local and constitutional character which affect the system also react in this way; hemorrhage, typhoid fever, rheumatism, and nearly all disorders of the stomach and liver, which break up and pervert healthy nerve power, are liable to react in inebriety. After severe injury or disease the natural nerve vigour is lowered, and departure from health comes on quickly. Neurasthenia or asthenic nerve-power is the common indication in these cases of the departure from health. Neurasthenia is to the nervous system what anaemia is to the blood.

Inebriety also results from psychological causes, as in depressing disappointments, hereditary nervous susceptibility, malformations of organs, or defective powers, either in function or structure, which may be diverted into inebriety from the slightest exciting cause, or the desire to relieve exhaustion. Inebriety may be the result of long-continued painful emotions, either of fear or joy, bad company, exhausting indulgences, or the mysterious effects of mind over body, all forms of suspension, alteration, and change in action of mental functions. Whenever the strain in the nerves and brain is beyond a certain stage exhaustion follows, for which stimulants are taken. Inebriety is a craving to satisfy this want, and the greatest effort of will is powerless to resist the infatuation for stimulants.

It is important to diagnose between dipsomania and drunkenness, since the efforts for the treatment and recovery of dipsomania do not apply to the mere drunkard, and may be even of little avail for him. The man who drinks recklessly from companionship and sociability is very different from one who, in spite of most earnest striving to avoid drinking, is irresistibly impelled to do so. We can no more draw distinctly the line of demarcation between drunkenness and dipsomania than we can determine precisely where day ends and night begins. Inebriates generally have a strong desire to overcome their failing, although, when unaided, they are powerless to do so.

As in other nervous diseases the mind can be made to act on the body, so that when stimulants are withdrawn, it then forms an important element in assisting the recovery.

An inebriate, during the intervals, has no desire for alcohol. This is not the case with the drunkard, who is always ready for his beverage. The inheritance of inebriety follows the same laws as other nervous diseases. Drunkenness and inebriety are allied to each other much as eccentricity is allied to insanity, the former often passing into the latter.

One of the chief predisposing causes of inebriety is civilisation, entailing, as it does, in its modern development, so great an expenditure of nerve force, and its action in this way is seen more amongst the higher and middle class, and those who live by brain and indoor occupations.

Inebriety has arisen amongst us and progressed, pari passu, with other nervous diseases, to which class it belongs. The exciting causes of inebriety are stimulants, opiates, and chloral, which, by acting in a secondary manner upon low nerve power, produce the diseased condition known as dipsomania.

In America an apparent paradox exists, for, while there is less excessive drinking and more total abstinence than in any country of the world, still there is more inebriety. The explanation of this is found in the fact that from climatic and other surrounding
circumstances stimulants can scarcely be taken by a nervous temperament, even in moderation, without inducing inebriety. There is universally an absence of stimulants at all meals in the United States.

Atmospheric influence is another undoubted exciting cause of this affection, as sometimes indicated by the production of a paroxysm from exposure to sea air, easterly winds, and other similar changes.

The treatment of inebriety must be carried out on the same general principles as for all other nervous diseases. Firstly, by the removal of the exciting causes, and, secondly, by fortifying the system with sedatives and tonics. The exciting cause can only be effectually removed by confinement in a retreat, thus separating the patient from alcohol, opium, or chloral. The necessary period of restraint varies from a few months in mild cases, to even years in the more confirmed cases. When the care and treatment of inebriates are more generally recognised, and effectual opportunities exist, so that cases can be treated in early stages, greater success will be obtained. In America it is estimated that one-third of inebriates under treatment recover, another third are restored for a time, and the remainder are unaffected by treatment. This is as large a proportion of recoveries as we find in any other class of disease; in insanity only one-tenth of those under treatment are restored to health.

As special treatment we find that while the patients are under the alcoholic influence, bromides, in large doses of 3 to 32, freely given, are of decided use. Diluents of barley-water with lemon-juice, butter-milk, or similar drinks, form an important feature of treatment in the early stages, acting as diaphoretics and diuretics, and thus clearing the system. Vapour-baths have a useful and soothing effect, and divert and occupy the attention. Cannabis indica is useful to promote sleep and soothe the patient. As soon as the restless craving has abated we must order exercise and light occupation, together with a mild diet, including a free use of fruit, but avoiding butcher's meat. The red cinchona bark is certainly useful in restoring nerve-power, while caffein and coca can be taken when special nerve exhaustion arises. The various nerve tonics—as quinine, arsenic, and strychnine—can be given with benefit. Iron is not so useful unless in the presence of anaemia. Total and constant abstention from stimulants is essential.

After recovery, to prevent a relapse, as well as in the course of treatment, religion certainly has a fortifying influence in aiding the resistance to the craving which will return from time to time. It is also important to avoid old associations and habits. My observations in America have convinced me that, under judicious management, a large proportion of dipsomaniacs may be recovered.

At present no sufficient opportunity exists for their treatment. Efforts are being made to establish a pattern inebriate home in this country, and a meeting is to be held at the Mansion House, on the 17th May, at three p.m., to start such an institution, to be called the Dalrymple Retreat for Inebriates.

ALCOHOLISM IN SWEDEN.

The fourth number of volume xii. of the Nordisk Medicinsk Arkiv contains a summary of a paper, read by Dr. Gerhard Westfelt, before the Swedish Medical Society, and published in the Svenska Läkareällskapets nya Handlingar, Series 2, vol. vii., on the statistics of alcoholic abuse and its results in Sweden during the years 1861 to 1877.

The author says that, about fifty years ago, when the excessive use of strong drink was at its height, the quantity consumed during the year was
Alcoholism in Sweden.

about 50,000,000 kannor * (28,801,500 gallons) in the whole kingdom, or nearly ten gallons for each individual of the population. After this there was a further increase. In 1855, legislation on the subject took place; and from that year to 1860 the average yearly amount was thirteen to fourteen millions of kannor (6,488,390 to 8,064,420 gallons).

Comparing the amount of alcoholic drinks used with the results of intemperance as shown in the statistics of disease and mortality for the several years 1861 to 1877, the author finds a close proportion between the figures. This is shown in a table; and the average result for the seventeen years is as follows:—

Average amount of alcoholic liquor (containing 50 per cent. of alcohol) consumed by each individual = 4'02 kannor = 2'3 gallons.

Average ratio of alcoholic disease in each 100,000 of the population of the kingdom = 14.

Average mortality from alcohol in towns in 100,000 of the town population = 19.

During the years 1867-68-69, the average amount of alcohol consumed and the rates of disease and death therefrom were at the minimum (viz. 3'11, 2'85, and 3'03 kannor of alcohol; 11, 6, and 7 cases of disease; and 11, 9, and 14 deaths). After this there was an increase, and in 1874, the amount of alcohol consumed was the greatest in any of the seventeen years, being at the rate of 5'14 kannor for each individual; while the disease-rate, calculated as above, was 21 (the greatest in any year except 1869), and the death-rate in the towns 30 per 100,000 or 3 above any other year, and more than three times as great as in 1868.

A comparison with other countries shows that the average yearly consumption of alcohol by each individual during the years 1872-76 was as follows: in Denmark, 7'4 kannor; Sweden, 4'6; Russia in Europe, 3'8; North Germany, 3'7; Holland, 3'5; Belgium, 2'7; Great Britain and Ireland, 2'4; Norway, 2'3; Finland, 2'2; France, 2.

The statistics of sudden death after the abuse of alcohol, which in Sweden go back as far as 1802, show a marked decrease since 1852, when the maximum of 94 deaths was reached. From 1841 to 1850 the yearly average was 67'1; from 1851 to 1860, 59'5; from 1861 to 1870, 28'6; and from 1871 to 1877, 22'7.

According to official reports obtained from all the civil and military hospitals in the kingdom, the total number of cases of chronic alcoholism and delirium tremens admitted during the years 1861-77 was 10,287, and the number of deaths 700; the yearly averages being 605 and 41 respectively. The minimum of cases both of disease and of death was met with in 1868 (244 of disease, and 18 of death); the maximum of disease (1,067) in 1867; and the maximum (67) in 1874. These numbers, however, represent only a small proportion of the cases occurring in the whole kingdom, and have, therefore, only a relative value. In Stockholm during the period under notice, there were 6,371 cases of alcoholic disease, or a yearly average of 375 (the maximum being 692 in 1876, and the minimum 100 in 1868). As regards sex, it appears that during the years 1874-77, the percentage of males among the cases of alcoholic disease was 96, and of females 4. As regards age, the percentage between the age of 21 and 40 was 55'6; between 41 and 60, 41; above 60, 3; and under 21, 0'4.

The certified deaths from alcoholic diseases in the whole kingdom during the seventeen years were 1,742, or a yearly average of 102; the minimum being 49 in 1868, and the maximum 179 in 1874. The average death-rate among the urban populations was 19 per 100,000: being in Upsala, 25; in Helsingborg, 25; in Stockholm, 26; in Sundsvall, 31; in Malmö, 33; and in Södertelje, 60. The proportion among the sexes was 96 males to 4 females. As regards age, the percentages were—85 between 25 and 55.

* The Swedish Kannis is = 576 English gallon.
Alcoholism in Sweden.

10 between 55 and 65, 3 above 65, and 2 between 20 and 25.

In Stockholm during 1874, about one-twentieth, and in 1875 about one-sixteenth, of the deaths among the male population between the ages of 25 and 55, were due to alcoholism and delirium tremens. These numbers, which express only the immediate results of the abuse of alcohol, give no indication of the entire extent of the influence of alcohol on mortality; for a number of deaths from disease arising from excess in alcohol are certified under various names, such as cirrhosis of the liver, chronic nephritis, Bright’s disease, fatty degeneration of the heart and blood-vessels, cerebral haemorrhage, &c.; moreover, the abuse of alcohol has a great share in the fatal issue of several diseases—for example, pneumonia, which, when complicated with delirium tremens, is three times as fatal as otherwise. How great this share is may with probability be inferred from the fact that the number of deaths of males from the most usual and prevalent diseases, between the ages of 25 and 55, is very considerable, and, indeed, may be said to greatly exceed that among females; while at other ages, the deaths among women exceed those among men. Of 7,354 deaths between the ages of 25 and 55 recorded in Stockholm from 1869 to 1875 as having occurred from the most usual diseases, such as phthisis, pneumonia, typhoid fever, typhus, small-pox, apoplexy, cerebritis, Bright’s disease, alcoholic diseases, and accidents, 68 per cent. were in men and 32 per cent. in women; while of 8,879 deaths from the same diseases at other ages 49 per cent. were in men and 51 in women. The importance of this fact is increased by the circumstance that the number of males in Stockholm between the ages of 25 and 55 is not remarkably less than that of females; and that this inference is correct is shown by the fact that the proportionate excess of mortality of males over that of females within the above-mentioned ages in all the towns of the kingdom during the several years agrees exactly with the proportion of deaths from alcohol and with the fluctuations in the amount of drink consumed. A year with a great consumption of alcohol shows not only a large number of deaths from alcoholic diseases, but also a great excess of deaths of males in general within the ages mentioned, and vice versa.

The influence of the abuse of alcohol on the mortality from violence and from accident is less distinctly shown by the statistics; but the maxima and minima of these agree with the corresponding variations in the use of alcohol. On the other hand, there does not appear to be any similar parallelism in Sweden between alcoholic abuse and suicide. Regarding the frequency of mental diseases, Dr. Westfelt calculates that at least from 7 to 12 or 13 per cent. among males, and from 1 to 2 per cent. among females, of all cases of acquired insanity in the kingdom, are due to the abuse of alcohol. Of the influence of alcoholic abuse on the progeny and race, a statistical proof is afforded in the increase and decrease of the population in certain parts of Swedish Lapland. A steady diminution of the population of the Laplandish part of Norrland commenced in 1825, and was coincident with a period when drunkenness was at its greatest height. At the end of 1840, there was a temperance movement, which exercised a widely spread influence for the better; and, in the latter half of 1850, an increase of the population commenced, and continued year by year until 1870. The proportion of males to females was influenced by the abuse of alcohol. Formerly the census always showed for the whole of Lapland a great excess of females over males; and this condition prevailed generally throughout the kingdom. In 1870, the census showed that the number of male Lapps had greatly increased, there being 1,000 to 1,039 females; while the numbers in the whole kingdom were 1,000 to 1,067 females. In the several parts of the province of Norrland there was an absolute excess of males over females.
Habitual Drunkards in New Zealand.

The conclusions which the author considers himself justified in drawing from the statistics collected by him are the following. About the year 1855, a comprehensive measure of reform produced a considerable reduction in the number of cases of disease and death due to the abuse of alcohol; but this reduction was for the first time distinctly evident in the first half of the decennial period commencing with 1860. In the latter years of that decennial period there was a very distinct improvement, which reached its height in 1868, when the abuse of alcohol and its evil consequences were less than at any other time during the whole period of seventeen years. From 1872, drunkenness again increased, and during 1874 and 1875 was greater than at any previous time since 1855. Again, in 1876, signs of diminution in the use of alcohol began to show themselves; and finally, in 1877, improvement had set in anew. These fluctuations, he says, must obviously have their source in varying economical conditions.—British Medical Journal.

HABITUAL DRUNKARDS IN NEW ZEALAND.

Dr. Frederick Skae, who, as Commissioner in Lunacy in New Zealand, is ably maintaining the distinction won for his name in connection with the treatment of the insane by his accomplished father in the days when the Royal Edinburgh Asylum at Morningside was the nursery of medical psychologists, refers in his report, presented to the Houses of General Assembly in the month of July last, to the treatment of habitual drunkards in the asylum at Christchurch, into which they are received under the provisions of the 21st section of the Lunatics' Act of New Zealand. Three habitual drunkards of each sex were in the asylum at the commencement of 1879; and two males and three females were admitted for the first time, and one female was readmitted, during the course of the year, making twelve in all under treatment. Two males and four females were discharged recovered, and two males and one female not improved, leaving one male and two females still inmates of the asylum at the beginning of 1880. In every case but one the judge's order of committal directed that the patient should be detained in the asylum for twelve months (the full time allowed by the Act) unless ordered to be discharged before the expiration of that term. Only one, however, of those discharged during the year had remained for that time; one stayed under two months, three under four months, two under six months, and one under seven months. It can hardly be supposed that, when the moral powers have so completely broken down under the influence of drink as to justify confinement in an asylum, two or three days of repentance, or a few months of rebellious grumbling, are likely to secure recovery. A year's seclusion is not, in Dr. Skae's opinion, a day too long; but the practical difficulty is that the patient is not often of this way of thinking. The immediate effects of the alcoholic poisoning soon pass off, and no outward and visible sign of the inward and spiritual weakness remains. And when this is so, unwarrantable self-confidence speedily returns, and impatience waxes hot. The patient bewails the misery and loss that prolonged detention is entailing, and fervently proclaims an unalterable resolve to drink no more. The husband or wife of the patient, as the case may be, believes the protests made, and the doctors on whose evidence the committal was granted are sent to review the case. The chances are that they fail to find anything the matter, and charitably
Hab. Drunkards in New Zealand.

not yet solved the problem of the best way of dealing with habitual drunkards, and that its legislation on the subject has been of a halting and timid description. A lunatic asylum is not the place for habitual drunkards; and, if they are to be confined at all, they must be confined for a sufficient length of time, and under regulations of sufficient stringency, to insure their good behaviour, and their full participation in that most valuable species of moral treatment—hard labour.

It is a significant fact that, notwithstanding the very unsatisfactory state of matters which he reports, Dr. Skae is still unwilling to abandon the shred of control over habitual drunkards which the present law of his colony confers. "Great as are the annoyances," he says, "which result from the reception of habitual drunkards into asylums, and small as may be the benefits derived from it, it does not seem desirable altogether to rescind the law which provides the only means of recovery to a class of people who are a misery to themselves and others; many of whom are undoubtedly anxious to get rid of their infirmity, and some of whom succeed in doing so, and through these means. A few years of the experience of the 'retreats' for inebriates which are about to be established in England may justify the adoption of a similar plan of treatment here." We should recommend New Zealand not to wait for experience from England, but to lead the way in this important matter; and show the mother country that it is possible to restore habitual drunkards to self-respect and habitual temperance without jeopardizing the liberty of the sober population, or incurring those other risks which have been predicted whenever an effective measure has been proposed here. Under the existing law but little encouragement is given to the establishment of retreats in this country; and the experience of such of them as are started can scarcely yet be expected to be of an instructive kind.—*British Medical Journal.*

give credit to good intentions, and so the patient is discharged when the morbid appetite is not extinguished; but only smouldering, and ready to flare forth once more whenever the wet blanket of restraint is taken off it. In all cases of habitual drunkards committed to asylums in New Zealand—and some have been sent to the Dunedin Asylum as well as to that at Christchurch—the patient's maintenance is ordered to be paid at a certain weekly rate, ranging from twenty shillings to forty shillings. In seven cases, Dr. Skae intimates, the payments have been made as ordered; in one the money is expected, but in four cases no payments have been made, nor are any likely to be forthcoming. It can hardly have been the intention of the Act, Dr. Skae justly observes, that habitual drunkards should be maintained in asylums gratuitously, and, at the same time, be at liberty to pass their days in absolute idleness. Yet this is the effect when, as often happens, there are no funds to meet the payments ordered. These patients will rarely work of their own accord—they are not working men, to begin with—and they object to do anything inconsistent with their dignity as habitual drunkards, or that might reduce them to the level of ordinary lunatics, who are generally industrious. Even when their maintenance is paid for, their presence in the asylum has, as Dr. Skae declares, an injurious influence on all around them. They spend all their time in amusements or grumbling; and, with that hypertrophy of self-esteem which often accompanies an atrophy of moral character, give themselves superior airs, which are offensive to their insane companions, whom they demoralize by setting them an example of idleness, and in other ways. But in the case of those habitual drunkards who pay nothing, and who are mere broadcloth paupers, this lordly idleness is peculiarly obnoxious to the other patients, and to the officers of the asylum.

It is clear that New Zealand has
INTOXICATION AS A PREVENTIVE OF SHOCK.

(From the Medical Times and Gazette.)

In a clinical lecture delivered by Dr. Stephen Smith at the Bellevue Hospital, and published in the New York Medical Record of December 25th, under the heading “On the Value of Partial Intoxication in the Prevention of Shock during Operations,” that surgeon brought before his class a young woman from whose hip-joint he was about to extract some diseased bone. She was in the condition known as “half-seas-over,” the result of the administration of six ounces of whisky in the course of the preceding five hours. Naturally she was a very sensitive person, in great dread of the operation and its publicity; but under the influence of the alcohol she had become talkative and agreeably excited, insensible to danger, &c., “in the most hopeful state of mind and body, and in good condition for the operation.” Dr. Smith bases this treatment on no inconsiderable experience of the benefits that attend it, and points to the not infrequent occurrence of alarming symptoms following the administration of anaesthetics, which in some cases are followed by the fatal termination that no treatment prevents; while, if the patient do recover from the alarming depression, convalescence is slow and tedious, and the wound from the operation heals slowly and with unusual tendency to suppuration.

“An attack of this kind is not narcosis from anaesthetics, but shock, and generally in its most aggravated form. It occurs especially in those of great nervous susceptibility, or who have already suffered severely from the shock of the injury, or who are prostrated by the exhaustion consequent upon long-continued illness, suppuration, or other cause. As a preventive measure against shock in these cases during an operation, partial intoxication of the patient with whisky, brandy or rum, will be found safe and reliable, and far preferable to quinine, opium, &c. The patient who has been labouring under great excitement in anticipation of the operation, gradually becomes quite indifferent, or even bold and daring. The pulse is full and slow, the respiration undisturbed; the ether is quietly inhaled, but little, comparatively, being required; the stage of excitement is brief, or is passed without a struggle. During the operation, however prolonged, the pulse varies but slightly, unless there is considerable loss of blood, and even in that case it retains sufficient force to allow the operation to proceed to its completion. After the operation the pulse maintains its vigour, there is slight (if any) reaction, and the temperature remains nearly normal for the first twenty-four hours.”

Dr. Smith refers to the fact, familiar to all surgeons prior to the introduction of anaesthetics, that patients partially intoxicated bear operations with slight evidence of pain or shock, and make remarkably good recoveries. The first case in which he resorted to this alcoholic treatment occurred many years ago in the person of a young woman, who, upon two occasions on which it was sought to administer an anaesthetic prior to the performance of amputation, exhibited such alarming symptoms that the operation was abandoned. On the third occasion stimulants were administered several hours beforehand, until she became decidedly intoxicated, and when she had taken eight ounces she had become quite indifferent to the operation; her pulse was 96 and full, and her respiration tranquil. A very small quantity of ether was required for the completion of the amputation, during which and for twenty-four hours afterwards there was no variation in her pulse and respiration. Her recovery was rapid.

“There is another class of cases
that is very favourably affected by stimulants so administered. They are persons suffering from enfeebled condition of the heart, and are noticeably overloaded with fat. They are very liable to succumb to even a very slight shock of the operation, when combined with the effects of the anaesthetics. The face rapidly becomes dusky, the lips purple, the respiration embarrassed, and the pulse feeble and irregular. Efforts at resuscitation sometimes prove unavailing, and the patient dies upon the table. As a preventive measure we usually give an ounce or two of whisky just preceding the operation, and doubtless this often does prevent disaster by arousing the heart and invigorating the circulatory organs. But such results are far more likely to be obtained if the stimulus is steadily given, in quantities suited to the conditions and habits, for several hours preceding the operation. . . . The plan which I pursue is to commence the intoxicant five or six hours before the operation, and give one, two, or three ounces every hour, according to the habits and condition of the patient. This patient required six ounces of whisky to bring her to her present state, the first ounce having been taken six hours ago. A few days since an old drinker required sixteen ounces to induce the condition of this young woman. I have always used whisky, and have occasionally used it in the form of milk-punch."

During the operation this patient required but little ether; the pulse continued 90, soft and full; and the respiration was undisturbed. After the operation the pulse and respiration continued unaffected; there was no evidence of shock; no fever supervened; suppuration rapidly subsided; her general condition improved surprisingly; and in two weeks she resumed her hip splint.

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**Notes and Extracts.**

**ALCOHOL IN THE WORKHOUSE.**—Few subjects crop up more frequently at the meetings of Boards of Guardians than the alcohol question, and we are glad to note that the Local Government Board is enforcing its regulations against the practice of allowing beer to indoor paupers except on medical grounds. The *Medical Press and Circular* commenced on March 16 the publication of a valuable series of papers on this subject, from the pen of Dr. Norman Kerr.

**THE LONDON TEMPERANCE HOSPITAL.**—Last week the London Temperance Hospital was formally opened by the Lord Mayor. According to the statement read, the hospital was first opened at 112, Gower Street, on the 3rd of October, 1873, and had since relieved 954 in-patients and 8,006 out-patients. It was established to give a scientific trial to the non-alcoholic treatment of disease; and although provision was made for the use of alcohol, should the medical staff deem it necessary in any special case, yet, in point of fact, this provision had been acted upon but once, and that without benefit to the patient herself. Many severe cases, both medical and surgical, had been treated on the non-alcoholic system with marked success, and the Board had thus been encouraged to provide the larger field of hospital practice inaugurated that day.

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**British Medical Journal, March 12.**

**ADMINISTERING ALCOHOL TO CHILDREN.**—We believe it is not an uncommon custom in the country to administer spirits in various forms to infants and children. It is, we think, very objectionable in the absence of medical advice, and little better than the administration of opium. Two cases of death in one night—that of
twin children—are before us, both dying suddenly, at Tenby, without being seen by a doctor. They were only eight months old, and the mother’s chief idea of treatment seems to have been beef-tea with brandy or sherry—very doubtful dietetics at eight months. Death from natural causes was the ready verdict, which we would slightly amend thus: Death from natural and unnatural causes. The kindness of the parents was not at fault so much as their intelligence. The medical man examined said he could not account for the death, but is afterwards reported as saying that teething was enough to explain death.


The Use of Alcohol in Hospitals.—The most rigid teetotaler may well be satisfied with the growing tendency in physicians to use it strictly and to be satisfied only with distinct proofs of its utility, and the most generous believer in the medicinal virtues of alcohol must know that the public and individual patients are taking a keener interest in this question than they ever did before, and are making very shrewd personal experiments on the subject. Our own opinion concerning it has been freely expressed, and we have not concealed our conviction that good health is most consistent with very little alcohol, or with none; that he who uses alcohol freely or frequently, or by itself and apart from food, is surely laying up disease and degeneration for himself, and probably for his descendants.—Lancet.

Cui bono?—For the last twelve-month two French savants have been keeping nine pigs in a state of habitual drunkenness. This has been done with the view of testing the effects of different kinds of alcohol on these animals. The Prefect of the Seine, last year, put some stybes and a yard in the municipal slaughterhouses at La Villetta at the disposal of the savants, in order that they might conduct their experiment at the smallest cost to themselves. We learn that the pig who takes absinthe is first gay, then excitable, irritable, combative, and finally drowsy; the pig who has brandy mixed with his food is cheerful all through till he falls to sleep; the rum-swilling pig becomes sad and somnolent almost at once; while the pig who takes gin conducts himself in eccentric ways, grunting, squealing, tilting his head against the sty door, and rising on his hind legs as if to sniff the wind. Dr. Ducaisne, writing on these intoxicated swine in La France, remarks that they are none of them the worse for their year’s tippling.—Medical Times and Gazette.

A Much-needed Reform.—The physicians of Boston, United States, have inaugurated a measure of internal reform which the medical profession in England would do wisely to imitate forthwith. They have formulated a provision of their ethical code to the effect that “a physician should not append his name, or permit it to be appended, to certificates in laudation of speculative health resorts, health excursions, nutritive or dietetic preparations, proprietary formulae, wines, mineral waters, beverages of real or supposed medical efficiency, or other hygienic materials.” This is a sweeping and practical, but highly necessary, act of self-purgation that the body to which we belong, and in the name of which we claim to speak, sorely needs, and which would sensibly enhance its social and scientific status. The growing practice of attaching the names of members of our cloth to articles sold to the public has reflected no little discredit on the profession in general, and on the individuals who have lent themselves to the more than equivocal practice at which this timely resolution has been aimed. What the physicians of Boston have done, the physicians of the United Kingdom can do. Let those who have sinned in this matter sin no more, and let those who have not as flagrantly offended resolve to avoid offence. It will be well for the profession, and for the interests of commerce too, when the practice of giving and vaunting medical testimonials, and parading the names of physicians and practitioners in the manner denounced by our brethren across the Atlantic, is finally abandoned.—Lancet, Feb. 19.
THE
MEDICAL TEMPERANCE JOURNAL.
July, 1881.

Original Contributions.

THE PRACTICAL TREATMENT OF DIPSOMANIA.*

By Stephen S. Alford, F.R.C.S.

Before considering the practical treatment of dipsomania I will make a few remarks upon its predisposing and exciting causes, since no disease can be intelligently treated unless these are ascertained.

True dipsomania is undoubtedly a disordered condition of the nervous system, manifesting itself at first by functional derangements. Dipsomania must not be confused with mere drunkenness; for it soon becomes irresistible and beyond the control of the ordinary will, often quite unconnected with temptation and arising from a special individual condition, whereas drunkenness depends to a great extent on accidental outside allurements.

Dipsomania may be hereditary, or the result of an inherited nervous temperament, and transmitted like other family diseases. It is allied to such nervous complaints as insanity, hay-fever, or sick-headache; and like them is periodic in its attacks, and often accompanied by hallucinations, delusions, sleeplessness, tremors, and nervous exhaustion.

Civilisation tends to produce this condition by causing nerve-power to be prematurely used up.

Among savage and half-civilised communities, though excessive drinking is often prevalent, the disease of inebriety has scarcely been manifested.

The exciting causes may be purely accidental, as from brain-exhaustion, following loss of property, or bereavement, or from

* Read before the British Medical Temperance Association, May 27, 1881.
physical injury, as in the case of sunstroke, or railway accident. The attack may be suddenly induced by certain climatic conditions, such as sea air, east wind, dryness of the atmosphere, extremes of heat or cold, or in fact by anything disturbing the harmony of the organisation, and thus arousing a hitherto dormant hereditary tendency. It may also be inadvertently lapsed into by a frequent resort to alcohol to sustain exhausted energy, and restore used-up nerve-power. All diseases, whether of a local or constitutional character, which affect the system by perverting or lowering healthy nerve-power, are liable to react in inebriety. The effort to relieve exhaustion, and remove a miserable depending condition, leads to a craving for alcohol, which at the time cannot be restrained.

The successful treatment of dipsomania depends on a clear estimation of all circumstances and conditions connected with the case, as family antecedents, temperament, and personal history. Hereditary inebriety is difficult to control. The paroxysmal craving is never completely lost, and can only be kept under by constant watchfulness, and rigid abstinence from all alcoholic drinks. Voluntary effort on the part of the individual is necessary for the successful treatment of this class of inebriates, and they are generally anxious to conquer their inherited infatuation for alcohol, and will readily co-operate in any plan likely to ensure their emancipation.

Those who unwittingly lapse into inebriety, and whose susceptible nervous temperament has an intolerance of alcoholic drinks, if they really wish to conquer this habit can easily be treated successfully; especially if taken in an early stage. This class is not, however, so eager for recovery as the class in which inebriety is hereditary, since the nerve exhaustion is greater, and the will-power in abeyance, as if paralyzed. But even these—when, after a few weeks of kind and judicious treatment, the immediate effect of the alcohol has passed off—gratefully consent to assist the efforts made to restore them, and willingly submit to all necessary restrictions. It is for this class particularly that compulsory powers are required, to place them under control from the first, for while still suffering from the miseries of alcoholic depression they are unwilling to entirely abandon its use.

When inebriety arises from external causes, such as accidents, sunstroke, shocks, &c., the maniacal condition is most marked. Patients thus attacked are incapable of acting and judging for themselves, and need early restraint, not only for their own safety, but also for that of those associated with them. This unfortunate class of inebriates, as well as those whose disposition when under the influence of alcohol is naturally fierce, are not responsible for their actions; their natural uncontrollable ferocity
The Practical Treatment of Dipsomania.

making them dangerous to themselves and others. Much of the quarrelling and violence in this country arises from persons highly susceptible, and easily made incapable by alcohol, and really in an irresponsible state. Instead of punishing such for so-called crimes, a paternal government should take care of them, and protect the community from the disastrous effects of their wild actions.

Those who have become inebriates from companionship, and the habits and allurements of society, are allied to the mere drunkard, and are seldom willing to stop their drunken career unless compelled: disease, the result of their intemperance, may arrest their course, but often too late to restore what might have been a useful life. In all cases there must be the power of restraining the inebriate from alcohol, otherwise all efforts are futile.

The want of this power has baulked medical men in their efforts to treat inebriates; the infatuation is so intense, and the cunning efforts to obtain alcohol so persistent, that, without positive power of control, it is impossible to keep them from it. Hence, to secure success, individual liberty of action must, for the time, be sacrificed.

The imperfect "Habitual Drunkards Act," of 1879, permits this power to be exercised, provided the inebriate consents voluntarily before two justices to submit himself to be placed under control in a licensed house, subject to Government inspection. Most hereditary inebriates will do this, as will also some from all classes of inebriates; but many are left uncared for, and allowed to ruin their families, and destroy themselves. These, in their mad paroxysms commit, unconsciously, all kinds of so-called crimes, including murder; and, if in this country, they are liable to suffer capital punishment. What is needed, is to obtain sufficient legislative power to commit all such incapable dipsomaniacs to a well-managed Home.

As soon as an inebriate is received into such a home, and until the alcoholic effects have passed off, he should be kept in bed under medical treatment. All alcoholic drinks should be at once withheld. No harm will result from this total and sudden suspension of stimulants, not even in delirium tremens. The letting-down system by gradually discontinuing alcohol is unwise, as it feeds the craving and hinders the recovery. The morbid craving will soon abate; but, to relieve the intolerable sinking and nervous prostration, acidulated drinks, barley-water, buttermilk, and such like diluents, should be freely given for a few days; even if sickness occurs, these drinks should be persevered with, for the sickness will tend to cleanse the stomach. These drinks also act freely on the skin and kidneys, and thus have a beneficial effect on the secretions. Russian vapour-baths, if they can be obtained, will
promote this, and tend to soothe and allay the distressing restlessness, and to divert and occupy the attention. After a few days a little light solid food can be given, such as toast with beef-tea, or some farinaceous preparation; but butchers' meat should be for a time avoided. It would, perhaps, be better for confirmed inebriates only to take butchers' meat moderately, since it taxes the stomach and creates a sinking feeling. Liebig considers that vegetarians, from chemical and physiological causes, would necessarily dislike and avoid alcohol.

During the early stage of treatment, if accompanied by wakefulness and delusions, bromide of potassium in large doses, with capsicum, frequently repeated, has a beneficial effect. The bromide soothes the agitated nervous system, and the capsicum allays the gastric craving. The ordinary anodynes, especially chloral hydrate, should be avoided. As soon as the alcoholic contamination has passed off, which it will require three or four weeks fully to effect, exercise and light occupation will be beneficial. At this stage general moral treatment must be brought to bear. Harshness will cause sullenness and obstinacy; kindness and sympathy must therefore be shown, and an effort made to arouse the better feelings, create a desire for recovery, and inspire a confidence that they can be restored if they will exert themselves and second the efforts made on their behalf. The better part of the man being thus aroused, the alcoholic contamination eradicated, and the nervous system rallied, the influence of restored inmates, with whom they should now be allowed to associate, will be useful in helping to confirm a determination to throw off the old habits. Under judicious management and religious influence this improved condition may become permanent; in most cases nine or twelve months, in confirmed cases even some years, may be required to strengthen and confirm these habits. By degrees full liberty can be allowed the patients to go about as they like, at first only in company with a tried inmate, but on parole as regards alcoholic drinks. The habit of denial under temptation is thus practised and becomes confirmed, and so valuable lives may be restored to their families and to society. Such I believe to be the most successful plan for the treatment of the inebriate.

To carry this out it is absolutely necessary to have sufficient power of restraint during a paroxysm, as well as from the first, to put the inebriate under control, voluntarily or otherwise. No one will be more thankful afterwards for this suspension of his mad career. During convalescence red cinchona bark strengthens and sustains nerve power; when attacks of exhaustion and sinking arise, caffein or coca, generally afford relief: various nerve tonics, as quinine, arsenic, and strychnine, may also be given with
benefit. The preparations of iron are not adapted for these cases except where there is anaemia. To prevent relapses a life-long abstinence from alcohol is absolutely necessary.

In America it is estimated that one-third of the inebriates under judicious treatment recover; a third are restored for a time, and the remaining third are unaffected by treatment. My experience convinces me that if the care and treatment of inebriates were more generally recognised, and effectual opportunities existed for their treatment in the early stages, a much larger proportion might be recovered. As it is, the percentage of recoveries will bear comparison with those from other diseases. In this country, for instance, it is estimated that only 10 per cent. of those under treatment for insanity are restored to health. We must not so much depend on purely medical treatment as on judicious management and kindness.

Religious influence is important in the second and subsequent stages of treatment, and to sustain the constant watchfulness necessary to maintain the total abstinence that must be rigidly observed under all circumstances through life. This conquest of self, and keeping the morbid craving in subjection, few men can accomplish. At times, even after years of abstinence, the desire will be most distressing and overpowering. It is refreshing under such trying circumstances to recognise and experience the existence of a higher Power, who will give the necessary help to all who really believe, and earnestly ask for it. Permanent recoveries are uncertain without this Divine help.

Recognising the fact that cravings for alcohol will arise from time to time, it is important to remove every opportunity of temptation, therefore no inmate of an Inebriate Home should be allowed to possess money, or any valuables, without the express permission of the superintendent. As soon as they are able the patients should join in systematic occupations and amusements, for which purpose every Inebriate Home should have workshops and opportunities for games and sports, and these as far as possible should be systematically arranged. Much of the benefit of hydropathic establishments depends on the systematic bathings and exercises. Inebriate Homes would do well to adopt some of their plans. It is important that the treatment of inebriety should be commenced before the habit becomes too confirmed, and the physical and moral natures thoroughly contaminated. If compulsory powers of control existed, it would lead many, voluntarily, to place themselves early under restraint. These, knowing their inability to overcome their habit of inebriety, and that, sooner or later, they must submit to restraint, would adopt the more private plan of voluntary submission, rather than run the risk of public exposure, particularly when they knew that at the most the restraint
could not exist for more than twelve months. In America 94 per cent. of the inmates of Inebriate Homes have thus voluntarily given up their liberty. No doubt in many cases the knowledge of the compulsory powers possessed by the State has led to this. But even in this country many have voluntarily submitted to control, recognising their inability to manage themselves; well-managed Homes find no difficulty in obtaining inmates, although they often have no legal power of detention. Yet thousands not having the means to pay high terms are left uncared for. Many clergymen, and other professional men, have applied to me for the opportunity of being admitted into a licensed Inebriate Home at a moderate charge; there is still the lower class, the source of most of the misery we find amongst us, who fill our workhouses, prisons, and to recover whom such persevering efforts are being made by temperance advocates. Are they to be left to destroy our country, and spread around them misery and distress, which a kind, firm control might prevent?

What is needed is to disprove by a practical demonstration the erroneous opinion held by many that Inebriety is not a disease amenable to treatment. For this purpose efforts are being made to establish in this country a Model Inebriate Home, at a moderate charge to the inmates, so that while restoring many of this neglected class, the public may be convinced that inebriety is a diseased condition, from which recovery can be obtained under proper management.

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THE SCIENTIFIC ASPECTS OF TEMPERANCE.

In contributing our quota to a Journal devoted to the discussion of the Temperance question in its especial bearing upon the medical profession, and its scientific aspect, we are conscious both of the responsibility of the task which we have undertaken—of its magnitude, and of the high intelligence and education of our readers. Necessity called us into existence; we have been sustained in our work by the warmest help and succour from a profession whose philanthropy, self-sacrifice, and beneficence know no limit. Closely allied with its clerical sister-profession, it works for the common good in the cause of suffering humanity—the one in a spiritual sense, the other in a physical; and when the two go hand in hand, as they did in the Divine Author of Christianity, great indeed must be the blessing. We are sustained by a deep sense of the truth of the cause whose advocacy we
undertake, of its vital importance and necessity in the present age, where alcohol is so actively at work, alluring its victims by thousands, under specious, hollow, and false pretences of doing good, whilst, in reality, as too many find out when too late, it has only spread its withering and blighting influence upon all who were unwise enough, or specially uneducated enough, to weigh exactly its pretensions. For years before this serial was called into existence we were struck and appalled to find the great lack that then existed amongst medical men, both in their student days and in their subsequent career in special education in the alcohol question. The Temperance question had made rapid strides; literature, facts, experiments, and experience had accumulated, which were never suspected before, until a terrible accumulation of indictments against alcohol had been collected. Refutation was impossible. Facts increased to such an extent that the subject could only be mastered by special study. What could be done? Alcohol had friends enough who would have taken up its cause—fought for it through evil report and through good report, if they could; but power and truth were lacking upon their side, and a bad cause in the hands of ever so eloquent an advocate is worse off than the truth without one. If alcohol had possessed a tithe of the virtues which have been assigned to it, there would have been no need of advocacy; it would have sustained its own in spite of opposition. But the virtues of alcohol, imaginary, shifting, and untrue as they have ever been, have rested upon a foundation which may be described in the expressive Yorkshire sentence—"Nowt but lees." All conceivable virtues have been assigned to it, and yet in reality what good has it done? Simply none. In its whole history, and in its unholy alliance with medicine, it has not cured a single disease per se; it is an antidote for nothing, a specific for nothing, a cure for nothing, a preventive of nothing. Alcoholic education in connection with medicine has been ignored by the whole of the medical universities, corporations, and authorities of this kingdom. It is one of the most important questions of therapeutics, one which lies at the very root of the medical art; and whilst the most intricate and collateral questions bearing upon medicine are elucidated with a minuteness which is really wearying to the medical student, the alcohol question is left practically untouched. Some of the finest and best trained students of our universities issue forth ignorant of the question, whilst they are educated upon infinitely less important matters to a point which is never likely to be wanted, or to be of use to them if their lives were six times as long as in the nature of things they ever will be. And this omission is a serious defect in medical education, calling loudly for attention and alteration. Before dealing with a dangerous
and treacherous thing like alcohol, used as it is by every one upon every occasion, by all means let the medical man know its full history, so that he may not be blind to its dangers, magnify its supposed virtues, or handle an edged tool which is sure, without the greatest care, to cut in the wrong direction. Mind that, under the plausible name of a stimulant, alcohol (instead of sustaining vital power) only calls it forth, prematurely exhausts it, and so diminishes the chances of life where they are nicely hanging in the balance. The use of such a thing demands the greatest nicety and knowledge; and where these are not possessed, safety and wisdom, prudence and humanity, point to their non-employment, especially where, to use a sporting phrase, the chances are a million to one that they will do harm; a million to one against their doing any good. The good that alcohol has ever done in the gross aggregate is infinitely small; the harm that it has done is written in letters of blood in the history of every nation under the sun. From the times of Noah and Lot, Samson and the Philistines, the "Ephraimites," the Babylonians, the Ninevites, the Macedonians, the Thracians, the Carthaginians, and other peoples, down to the Anglo-Saxon race and its allies, the history and result have been the same; and they ever will be in the future as they have been in the past. The subject is one thrilling with interest; it should be pursued and studied to profit, as it may be elsewhere. Time and space preclude more than allusion to the subject here. But facts are indelibly engraved upon the page of history never to be effaced, although they may be for a time forgotten, and in times of forgetfulness the lesson is apt to be lost. They cannot be too often brought to the light of day, nailed to the mast and held up for public gaze—for there are always swarms of people ignorant of history, and to these its practical lessons are lost. "Give a lie five minutes' start and the truth will never overtake it," is a proverb as old as the hills, and never more true than in the case of alcohol. The lies upon which the virtues of alcohol have rested have not only had five minutes' start, but in reality that of many centuries, ere the truth of total abstinence dawns upon mankind. The race is endless and terrific, nevertheless we shall win, for we advocate a great and a glorious truth, which shall, in the end, as assuredly prevail as the coming dawn, and redeem mankind from one of the vilest, most fatal delusions, setting him free from the iron grasp of the deadliest enemy to his spiritual, moral and physical welfare, although in the false garb of a friend. Alcoholic virtues are myths, as endless and as delusive as phantoms—shifting lies, which have changed in every age, moved about to suit the circumstances of times and people, and although combated, and shown to be false,
are reiterated over and over again; and so the work of total abstinence advocacy has to be gone over and over again. No sooner is one generation partially educated than it dies, and another springs up to be led away and deluded by the same claptrap, errors and misconceptions of the value of alcohol. Oh that generations could be always wise—continuously wise—and that wisdom were universal. Utopian wish, but one devoutly to be desired, to be hoped for, and to be prayed for—the epoch in this world's history which should be delivered from the incubus and the curse of alcohol—the age which should know it not, or its inevitable train of sin, sorrow, and premature death!

The remedy is infallible—as much so as any specific can possibly be—certain, cheap, universal, safe, and applicable everywhere at all times. Total abstinence will annihilate every evil which can possibly spring from the liquor traffic, no matter under what phase or disguise. The two are entirely antagonistic, incompatible with each other; as opposite and as antagonistic as fire and water. They are certainly not founded upon the homeopathic law of similia similibus curantur, of joining "grief to thy grief," or echoing sighs to thine. The principle of drinking deeper to cure drunkenness would be madness indeed; but total abstinence would be the only true and scientific remedy. The old Jewish proverb about alcohol being φαρμακον αφεξηνης, "the physic of fools," has a remarkable ring of truth about it now, and, although long lost sight of, has a meaning as fresh as ever. And the converse is equally true, that total abstinence is the physic of the wise. Alcoholic medication has done little or nothing for its votaries or its dupes, but hurried thousands of them into poverty and premature graves; torn away some of the brightest and dearest associations of life; torn to the quick every hallowed and sacred virtue which has existed or thrilled in the human breast; and what has it done in extenuation? Simply nothing. No redeeming feature to its good balance; no virtue to its credit; a thing almost without a single virtue; a thing with a million vices; the common enemy of all; an exhausting, treacherous, and dangerous narcotic; a thing which will professedly nourish, but will in reality poison; a thing which will professedly "strengthen," but will in reality weaken; a thing which will shrivel up the blood corpuscles, poison the blood stream, arrest vitality everywhere, and produce disease and irritation in every organ with which it comes into contact; a Bright's kidney producer, a hob-nailed liver producer, a blood poison, a fatty degeneration maker, a gout producer, dyspepsia producer, insanity producer, a poverty producer, all combined in alcohol: truly its seed is prolific. And if some of the many specimens of these warped forms of humanity could be procured and made to
parade the streets of our town thoroughfares, labelled on large placards in the "sandwich" style, "Hob-nailed liver and ascites: the alcoholic liquor system has done this"—"Insanity: the alcoholic liquor system has done this"—"Reduced from affluence to beggary: the alcoholic liquor system has done this," it would only be bringing some of those things to the light of day; let them not be hidden beneath a bushel.

Alcohol may be termed the prince of quacks. In quack style, virtues which it never had have been paraded in every time and age. It lives upon a false reputation, by assuming virtues which it does not possess; its vices have been kept by its advocates in the dark; it ever seeks fresh victims and lures them on to destruction. An oily-tongued syren ever playing its lying and delusive music, and ever devouring those who are unwise enough and inexperienced enough to fall within its grasp. Easy indeed is the way of entrance made, but hard enough and difficult enough is the exit; and if the victim fortunately escapes with his life, he is probably for ever maimed. The people possess within themselves, by wisdom and combination, the power (in total abstinence) to put an infernal machine within the nest of this syren which shall explode and send it into a million fragments and exterminate them for ever from the earth. Why not do it? No penalty would ensue. No aid of a lukewarm Government need be sought; no fear of a trial for the result. In this work nothing is to be hoped for from the Government on the one hand, nothing to be feared from it on the other; simply withhold the custom and every drink shop perishes for lack of prey. Six months would do it; we should enter upon a paradise of sobriety and national peace. El Dorado come at last!

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INEBRIETY AND ITS TREATMENT.*

We are here presented with a very full report of exceeding interest. It embraces the age, history, nativity, education, social condition, occupation, allied habits, duration and nature of the inebriety, complications either of disease or injury, number of attacks of delirium tremens, and the exciting cause of the

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ailment, so far as these could be ascertained. The records of
the particulars of two hundred and fifty-two dispsonianiac cases
are given in a tabular form, characterised by peculiar simplicity
and clearness.

The highest number of inebriates admitted to the Fort
Hamilton Home was between 30 and 40 years of age. Between
25 and 30 years there were very nearly as many, and a few less
between 40 and 45. Beyond these limits of 25 and 45 the
numbers decreased gradually to 20 on the one hand, and 60 on
the other. There were very few between 60 and 65, and only one
case in the whole number between 15 and 20. As regards sex,
nearly 20 per cent. were females. More than one-half were
natives of the United States, a fourth hailed from Ireland, a
twelfth from England, and a sixty-third from Scotland. More
than one-half were Protestants, rather more than a third were
Roman Catholics, and only one of no religion at all. Education
is often vaunted as a preventive of drunkenness, but the Report
before us shows the fallacy of this belief. Only twenty-four could
neither read nor write, while ninety-two had a rudimentary educa-
tion. Fifty-five, or nearly one-fourth, received a liberal education,
one in fourteen having passed through a college curriculum.

Of the males, about one in eleven followed professions; a
large proportion were skilled mechanics; and of those engaged
in business, none were below the average in general intelligence
and capacity, many being far above it. The clientèle comprised
clergymen, lawyers, physicians, and members of all classes in
society, who at one time held responsible positions, but now
nearly all voluntarily sought the refuge and restorative treatment
the asylum afforded. Of the females, one-half were domestic
servants. Of the males one-half were married, and of the females
three-fourths. The statistics of insanity show a similar proportion
between the married and the unmarried.

The influence of heredity was very marked. In more than
three-fourths of the cases the father or mother, or both, were
intemperate. In seven cases the uncles were addicted to excess,
and in seven cases the taint descended from grand-parents.
The insanity of parents was clearly one of the predisposing
causes of inebriety in their children; but the principal heredi-
tary cause was undoubtedly an inebriate father or mother. In a
few instances an inebriate parent begat insane as well as drunken
offspring.

The great majority of the inmates used tobacco in some form,
though occasionally there were cases where tobacco had never
been used. The opium habit was frequently associated with the
habitual use of alcohol. Of the entire number, nearly a fourth
had been under treatment at other establishments before applying
for relief at Fort Hamilton, but that absolute restraint, which is so necessary a factor in the cure of this distressing ailment, had not always been effectually applied. So that it would be more accurate to say that less than one-sixth of these had received thorough treatment. More than one-half of the whole number of patients had been addicted to inebriety for over five years, and nearly one-half for over ten years, before admission. About two-thirds had been habitual and one-third had been periodical drunkards. The duration of the drunken habit shortened life sooner in the habitual than in the periodical inebriates.

Some curious facts are revealed by the Report as to the kind and quantity of liquor affected by the inmates. More than one-half got drunk on whisky, one-third indulged in both malt and spirituous liquors, and sixteen were cases of victims to drunkenness from malt liquors alone. Some had consumed a daily average of two quarts of brandy, others three to four quarts of whisky, and others one gallon to one gallon and a-half of beer. Dr. Mason calculates that the 162 whisky drunkards must have drank, during their days of dissipation, nearly 200,000 gallons of spirituous liquors.

The predisposing causes were chiefly parental inebriety, sometimes parental insanity, and in a few cases the intemperance of grandparents. Head injuries were largely in excess of the other exciting causes, viz.:—blows on the head, fractures of the skull, loss of bone, and concussion of the brain. In nearly all the head cases the sufferers had used alcoholic stimulants in moderation previous to the injury. Other physical disorders were also found to be exciting causes, the drunken habit being excited in one case by stricture of the urethra, in another by tape-worm, and in another by necrosis of the tibia. Additional exciting causes were social habits, business drinking customs, employment in the liquor traffic, family troubles, and losses in business. Among the complicating diseases were phthisis, syphilis, gonorrhœa, and tubercular disease.

Alcohol stimulates unduly the generative organs. The virile power is thus prematurely exhausted, and impotence is a common result of habitual drunkenness. A very intractable form of phthisis is induced by alcoholic excess. It is also noted that in no class of disease does alcohol more frequently form the basis of treatment than in pulmonary disorders, and that temperate persons who have taken alcohol as a remedy for these ailments have frequently developed inebriety. Fifteen were epileptics in whom the epilepsy was due to alcohol as the exciting cause. Ninety three had had 182 attacks of delirium tremens. Chronic alcoholic mania was at times treated. This form of habitual intemperance commonly ended in dementia. The only chance
for such cases was being placed for a long period in an inebriate asylum, under proper care.

The practical conclusions to be drawn from this admirable Report are of the highest importance. The initiatory stage of dipsomania is usually formed between fifteen and thirty-five, the large proportion being between fifteen and twenty-five. This fact may be utilised in cases of marked hereditary tendency by guarding the individual at special times from the various exciting causes he might otherwise be exposed to, and thus carrying him over the most dangerous period.

The majority of inebriates do not come under treatment till they have been indulging habitually or periodically for in all cases five years, and in a large proportion of cases over ten years. Inebriety, to be successfully treated, ought to be under proper treatment in the first and most curable stage.

As head injuries are so powerful an agent in the causation of inebriety, it is the duty of the surgeon to be very cautious in the prescription of alcoholic liquor in the treatment of fracture, concussion, and other surgical affections of the skull and brain.

Lastly, and most important of all, the predisposition of certain individuals to drunkenness should ever be present to the mind of the medical attendant, and he should scrupulously avoid ordering intoxicants in such cases. Wherever he thinks alcoholic drink called for, he should carefully inquire into the family history and antecedents of the patient. The dose of the drug, and the period during which it is to be given, should be definite. It is to be regretted that medical practitioners do not usually prescribe alcoholic liquor as they do other poisonous articles. If they did there would be fewer medical drunkards in our midst, and the noble profession of medicine would be freed from a shameful and not altogether undeserved reproach.

THE TREATMENT OF DRINK THIRST.*

Dr. Hall's little work is an interesting and useful publication; it is not up to the teetotal standard, but perhaps on that account will be more acceptable to the majority of medical men. Though not a specialist, the author has evidently had considerable oppor-

* "Drink Thirst: its Medical Treatment." By Dr. J. Hall, District Medical Officer, St. Pancras.
tunities of studying the disease of which he treats. It is shown that no more awful visitation can befall man or woman than the misery, degradation, and ruin in which alcohol involves so many of its victims—the curse too often descending to children and to children’s children. In the latter cases there is a predisposition to drink-craving; alcohol, for such persons, has a fascination which is almost irresistible.

Dr. Hall divides his work into two parts; first, he gives an account of the disease, its causes and phenomena; second, its treatment. We wish he had shown a greater disposition to cut off at once the use of alcohol. Rare indeed are the cases, if they exist at all, where the use of the poisonous agent may not be summarily and advantageously dispensed with. If there is considerable cardiac irritability, give digitalis; if there is dyspepsia, give antacids, stomachics, and an aperient; where there is restlessness, five grains of Pil. Sap. co., or Chlor. Hyd. with Pot. Brom., often produce a few hours of calm and refreshing sleep. But, above all, attention should be paid to the frequent supply of light, nutritious food. The author’s remarks on many of these points are valuable.

Two or three things will always strike the intelligent reader of works on dipsomania: the disease is most difficult to cure; prevention is better than cure. Drunkenness comes from the use of alcohol; alcohol can not only be dispensed with as an article of diet or pleasure with safety, but with advantage. Since, then, its use so often begets unspeakable evils, the work of inculcating total abstinence is pre-eminently wise and patriotic.

Though Dr. Hall’s book has some faults, it has many excellencies, and we should be glad if it could be put into the hands of every medical man throughout the country.

—*Drink and Cold.*—A Cincinnati medical journal gives an account of a party who spent a cold night on a western prairie, according to which it appears that “they all suffered just according as they took in the whisky. Those that got drunk froze to death; those that drank less, but too much, died after a while; those that drank only moderately will feel it as long as they live. Three didn’t drink any; they were only cold, but did not suffer nor freeze.” —*Good Health.*
Proceedings of the
British Medical Temperance Association.

President.
B. W. Richardson, M.A., M.D., LL.D., F.R.S., F.R.C.P.

Honorary Secretary.
Dr. J. J. Ridge, Carlton House, Enfield, Middlesex.

Registered or registerable medical practitioners are admitted as members on condition of personal abstinence from all intoxicating liquors as beverages, and payment of an annual subscription of not less than five shillings.
Registered medical students who are total abstainers are admitted as Associates on payment of an annual subscription of half-a-crown.
Members and Associates receive the Medical Temperance Journal free by post.

NOTICE.
The subscriptions for the current year 1881-2 are now due, and should be forwarded to the Honorary Secretary.

NEW MEMBERS.

Dr. Crossby, Sunderland.
Surgeon-General Francis, London.
Dr. Fulford, Wadebridge.
W. Hazel, Esq., London.
J. A. Hedges, Esq., Leighton Buzzard.

Dr. Norris, Lancaster.
C. Rothwell, Esq., Bolton.
A. M. Sydney-Turner, Esq., Gloucester.
Dr. Thornley, Bolton.

NEW ASSOCIATE.


Enfield, June, 1881.

J. J. Ridge, M.D., Hon. Sec.

THE ANNUAL MEETING.
The Annual General Meeting of the Association was held on Friday, 27th May, at the Medical Society's Rooms, 11, Chandos Street, Cavendish Square, Dr. B. W. Richardson, F.R.S. (the president), in the chair.
Dr. J. J. Ridge, the hon. secretary, read the minutes of the last annual and quarterly meetings, which were confirmed. Dr. Ridge also read the following REPORT.
The progress of the temperance reformation in the United Kingdom.
is reflected in the increase of the British Medical Temperance Association. On May 1st, 1880, there were 235 members and fourteen associates. During the year nineteen new members have been enrolled, and four associates have become members after qualifying as medical practitioners; six new associates have joined our ranks. On the other hand, two members have died, namely, Dr. Hope, of Liverpool, and T. Bott, Esq., of Bury, Lancashire; and six others have resigned membership. Hence the total number of members is now 250, and of associates sixteen, being a net gain of fifteen members and two associates.

The following papers have been read during the year at the quarterly general meetings of the association:—


There were also exhibited a case of drugs used in flavouring and adulterating gin and other liquors, and directions for their use contained in "The Mixing Book," by Dr. J. J. Ridge; and Dr. Dudgeon’s Sphygmograph, by Dr. C. R. Drysdale.

In August last the International Temperance Congress met in Brussels, and was attended, as a deputation from this Association, by H. Branthwaite, Esq., and Dr. C. R. Drysdale. The declaration on the temperance question and of the principles of the British Medical Temperance Association, which was read and approved at our last annual general meeting, was read by Dr. Drysdale in French, and entered on the minutes of the Congress. A number of copies of this declaration were distributed among those attending the Congress and eagerly accepted.

Papers were also read at the Congress by S. S. Alford, Esq., on the Influence of Habitual Drunkenness on Criminality; by Dr. D. Brodie on the Physiological Action of Alcohol; by H. Branthwaite, Esq., on the Effect of Alcohol on the Temperature; and by Dr. Norman Kerr on the Heredity of Alcohol. As one result of the Congress a committee of nine members was formed to investigate the action and effects of alcohol, and to report to the next Congress in London, 1882. Drs. Richardson, Norman Kerr, and H. Branthwaite, Esq., were elected members of this committee.

Advantage was taken of the meeting of the British Medical Association in Cambridge in August last, to afford an opportunity to those members of our Association who might be present on that occasion to meet together, and to this end a luncheon was held, at which fourteen members were present. The action of alcohol was well discussed in some of the sections at this annual meeting, notably in the psychological section, in which the question of the relation of alcohol to insanity gave rise to a long and adjourned discussion, the generally accepted result being that alcohol was credited with causing directly 15 per cent. of all the cases of insanity. At this meeting also the progress of public opinion was well shown in the adoption at a crowded meeting of members of Dr. Norman Kerr’s proposal that the tickets for the annual dinner of the Association should in future be exclusive of wine.

In October last a conference of medical men was held at Bristol under the auspices of this Association, at which the honorary secretary attended as a deputation, and read a paper on the subject, "What should Medical Men say about Alcoholic Beverages?" The meeting was convened in the names of Drs. Challacombe, Greenly, Stewart, and Tivy, and was presided over by Dr. Brittan; about forty gentlemen attended, and an animated discussion followed on the reading of the paper.

In November the attention of the Council was called to certain state-
ments alleging that a great increase of mortality had resulted in the West Derby Union from the discontinuance of the allowance of alcohol. The Council held a special meeting on the subject, and agreed to memorialise the Local Government Board to institute an inquiry into the facts of the case, and drew up ten heads of inquiry which seemed essential in order to arrive at a correct conclusion. The memorial was presented and favourably received by the Local Government Board, and an inquiry has been instituted on the lines indicated by the Council.

The year, therefore, has not passed away without leaving some signs of progress in the enlightenment of the nation on the medical aspect of the temperance question. Much, however, yet remains to be done. The Association would have its influence much increased by the addition to its ranks of those large numbers of medical men, practical abstainers, who are still unenrolled; the Council also hope for the help of many more of the members in the investigation of the still unsolved problems connected with alcohol, in collecting facts respecting it, in preparing papers for the quarterly meetings, and in other ways which may suggest themselves to individual members. Thus all may have a share in the great work of dispelling the disastrous ignorance of the true position of alcohol which is prevalent in many quarters.

The balance-sheet showed receipts amounting to £66 4s. 8d., and a cash balance in hand of £9 os. 6d. On the motion of Dr. Ridge, seconded by Dr. Drysdale, the report and balance-sheet were adopted.

The auditors having been re-elected and thanked for their past services, the officers of the Association were re-elected, the name of Surgeon-General Francis being added to the list of Vice-Presidents.

The President, in returning thanks, said he could have wished that the office he held had fallen into the hands of one whose time was less occupied than his was, for he was so pressed with work at this period that anything like a relief would have been a comfort to him; but the great work in which they were engaged was so much advanced by the labours of the Association, the public looked to the medical profession to lead them in the right way with regard to temperance movements, and the members of the Association so strongly expressed themselves that he should again take the post of president, that he had had the pleasure once more of accepting the nomination. He looked upon the Association as extremely valuable and interesting, and he had never attended one of their meetings without being informed on some point that he had not known before on some of the many matters of temperance and scientific interest which they had discussed. They desired to be in the first ranks of science and medicine, and it was their duty to take a deep interest in the general advancement in the tone of professional feeling, and learning should accompany every medical effort. He had been much struck with the statement made by Dr. Ridge as to the large constituency of the medical profession in the kingdom who were not only with the Association in sentiment and feeling, but in actual practice, who did not come to them, professedly because of the fear that their own interests would be jeopardised. Theirs was an arduous profession, in which, he was quite aware, there were many jealousies. There was the odium medicum as well as the odium theologicum, and he supposed that none of them had declared themselves in the cause without at first losing a little in practice, and, perhaps, professional standing. But this drawback was of a fleeting kind, and he believed the course of events would be that those who were leading the way would have the first place in the public estimation. They might at first think they were martyrs to a great cause, but the cause was sure to triumph, and with that triumph would come their success. He hoped those who were with him in sentiment would really join the Association. If they did, next year instead of having 250 members...
they would have 600 or 700, or, perhaps, 1,000 members, and what could not be done by such a body of medical men in all parts of the kingdom? The medical profession should be like torch-bearers throughout the kingdom, leading public opinion in this great matter, and he trusted that before resigning the presidency into younger and more active hands, a very large amount of work would have been done in that direction.

Mr. S. S. Alford, F.R.C.S., read a paper on "The Practical Treatment of Dipsomania," which is given in full in the early part of our present issue.

Dr. Eyton Jones (Wrexham) asked whether Mr. Alford had any statistics of the number of inebriates in the United Kingdom, and said that looking at the very large number of inebriates scattered throughout the country he had entirely lost faith in any remedial measures that were not of a coercive character. He had asked a great number of inebriates to submit themselves to some repressive measure, to enter some institution, and endeavour by that means to recover their positions in society; but while two or three had agreed to do so, they had, as a rule, exhibited the same slyness with respect to this matter as they do in obtaining stimulants—and as inebriety was progressing and largely increasing among the female inhabitants of this country, he felt that this demoralisation could only be checked by coercive measures. He had had some little experience of one fact. Having acted as a magistrate for nearly fifteen years, he found that a very great suspicion existed on the part of the public that if coercion were established in this matter, some medical men would be found who could be biased in such a way that they would send into the asylums persons who did not come properly under the class of dipsomaniacs; and therefore he would like to see established, not simply a voluntary system, but a mode of examination of dipsomaniacs which would put the question of their condition beyond doubt. He would like to see a law established whereby dipsomaniacs should be proclaimed before two magistrates upon testi-

mony of the most reliable character, and then the public at large would come to regard coercive measures as being of greater value than voluntary ones. If Dr. Norman Kerr's statistics were worth anything, and he had proved that in this country nearly 50,000 lives were lost directly owing to intemperance every year, what became of the few cases of confirmed dipsomaniacs who were cured and returned to their families? They were constantly meeting with dipsomaniacs who were ruining themselves and their families, and yet under the present state of the law such people could not be touched. He believed that the only way of preventing such men ultimately being sent to gaol for committing some crime which brought them within the law was to assert the majesty of the law in the individual before he becomes a criminal, and that his disease should be treated by a paternal government before it could prove morally and physically fatal.

Dr. Norman Kerr thought the point they ought to discuss was one which the clergy and other moral reformers seemed to have almost lost sight of. There were two aspects of drunkenness. There was both moral and physical degradation; for ever and above the sin and crime that clergymen and lawgivers denounce from the pulpit and the bench, there was in a great many cases something more than a mere moral or social aspect of the question—the physical disease behind: and until the people of this country understood that drunkenness was the result of physical narcotic poison operating upon the physical and the mental and moral nature, they would fail to grapple with the subject. Until politicians, and the present Prime Minister especially, awoke to the fact that alcohol causes, by its physical action, social, religious, and political mischief, they would not do much good in repressing the misery which they all so much deplored; and it was the duty of the medical profession to teach politicians that alcohol is a body and brain poison, and to induce them, if possible, to prohibit its sale. Clergymen and others who came to him on the ques-
tion, as a rule, forgot all about the existence of an hereditary drink crave; and until they understood the physiological effects of alcohol on the human system they could do little permanent good. One point which Mr. Alford stated was particularly essential, and that was that there must be entire and unconditional abstinence from all alcoholic beverages. He had known cases where men who were believed to be cured had had all their cravings awakened by taking the communion wine. He was glad that Mr. Alford had emphasised the fact that there was no danger in suddenly cutting off the supply of alcohol, for this was a matter too much lost sight of and misunderstood; but he could not agree that any amount of beefsteak in the world would give anybody an appetite for liquor. Many of the Brahmins in India, who were hereditary and religious vegetarians, had learned to drink just as much as an Englishman. Dipsonmania was quite an artificial disease, and if there were no alcoholic liquors produced it would soon die out. With regard to the bark cure, red bark and other tonics were good things; but of the so-called bark cure and the other things of the kind which came from Chicago he could not speak in too strong terms. It was nothing but a system of quack advertising from the beginning. It was very essential to remember that something more than medical treatment was necessary in dealing with dipsonamies; the moral character must be treated by religious and intellectual means—the poor, wretched, despairing spirit required to be encouraged and sustained as well as the body. As to the immediate prospect of the movement he could not say much. He could not recommend anybody to go to any licensed home in the country at present, and therefore he was perfectly helpless in the matter. It was hoped, however, that the "Dalrymple Home" would soon be ready, and that would be a sort of State of Maine on a small scale. After all, the true philosophy of the question was prevention, and they were anxious to do all they could to cure their patients, by educating them by physical and moral teaching, and, above all, by example in the ways of abstaining temperance.

Mr. E. Meacham (Manchester), after expressing the pleasure with which he had listened to the paper read by Mr. Alford, said he had had a mission in Manchester for the last twenty years, during which time many thousands had signed the pledge; but if he had a small home where he could have put a lot of these people—a sort of moral prison—he would have been a great deal more successful than he had been. He had a pauper district of 63,000, including the thieves’ quarter; but he knew many of the once vilest characters in the City of Manchester who, by the aid of religion and temperance, had become living lights, and thoroughly reclaimed and religious men. With regard to the hereditary taint, he had noticed this fact, that drunkards whose mothers had been drunkards before them were the worst cases to deal with. If the fathers had been drunkards and the mothers sober women there did not seem to be the same hereditary taint in the poor creatures, males or females, that there would have been had the drunkenness been on the mothers’ side. In the whole of his experience he had seen only three women reclaimed from thorough drunkenness, and those were women who had got into the religious element. With regard to the beefsteak question, a large proportion of drunkards among the working classes got precious few beefsteaks. Their chief diet seemed to be tea, bread, and red herrings. If they had beefsteaks so much of their money would not run into other coffers. He did not think much of the bark cure, though he knew of one cure under its influence. If they could put people into a sort of moral gaol, temperance reformers would have a very good chance, and he thought that whilst public-houses were open these asylums should be open as counter attractions.

The Rev. J. H. Gatchell (chaplain of St. James’s Home) said that the experience he had gained in the St. James’s Home was the very oppo-
site to the statement that had been made as to the almost moral impossibility of reclaiming female drunkards. During the existence of the home, he understood by the reports, at least 60 per cent. of the women admitted had been successfully treated, and had gone away cured. He thought the question should not present such awful difficulties with regard to women, for very little had been done to obtain any results. It was the general belief of the public that owing to the nervous system of women it was almost impossible to cure them of drunkenness, but he thought the fact he had stated was an absolute proof of the sure remedies of moral and religious training in redeeming those who had fallen into intemperance. There was one great hindrance to the reformation which might be effected in a moral home—that was the great difficulty of getting a man to go in the broad light of day, and in his sober senses, to swear that he is a drunkard. He rejoiced to see men of great ability, power, and talent, taking up the question, for he believed that little good would be done without moral and religious teaching. A great deal could be done by working on the will and the imagination. Sir Henry Marsh, acting upon an epileptic person's imagination, cured him by persuading him that three spiders, had eaten away the disease; and if they could thus work on the imagination of those who had fallen into drunkenness, they would do a great deal. He thought that beef to a certain extent heated the blood, and gave a desire for excitement, and that there were things more conducive to temperance reformation than roast beef. Mr. Gatchell concluded by reiterating his belief in the great importance of the religious aspect of the question.

Dr. Drysdale thought the essay read was an exceedingly valuable one; but he felt a great deal of doubt as to the possibility of locking people up because they were inebriated in the manner suggested by Dr. Eyton-Jones. He (Dr. Drysdale) had been a teetotaler all his life, but he did not see why he should have the right to lock people up because they drank, much as he should wish them to be good and not behave foolishly. It would be just as well to try to lock up every foolish person. He knew some foolish idiots who would run through any amount of money in a very short time; but if they were to lock up people for anything, who would be safe? People who drink might be inclined to lock up some of the teetotalers.

The Chairman remarked that he was once locked in a room by a dipsomaniac.

Dr. Drysdale thought they should not set the example of locking up too much, and he was quite content with the law of 1879, thinking that the voluntary system in the matter was as much as they could ask for. Another point touched by the essayist was in reference to abstinence from meat. Now, he would not follow any medical man who wanted to seduce him into vegetarianism. It was perfectly clear to him that vegetable food was not so easily digestible as animal. Nor could he agree with the essayist on the enormous importance of any form of theology in curing dipsomania. He could be a teetotaler perfectly well without adhering to any particular theology, and he protested as a medical man in mixing up two subjects, each in its way excellent, but having nothing to do with the other. If they convinced people that drinking was very bad for their health, and that it would ruin and degrade them in society, they would have done a great deal. As medical officer to the Rescue Society, he did not think there was the least necessity to think that women were not amenable to reclamation from drunkenness and other vices. He would again urge that they should not attempt to introduce involuntary locking-up. A large number of people, especially among the poorer classes, commit some slight crime for the purpose of being put into Clerkenwell Gaol, so as to have no drink, at all events for a certain time. That was, of course, perfectly fair; but he hoped they would not appear to sanction any
further penal law on a thing which they had nothing to do with,

Dr. A. Carpenter considered that the great point the medical profession had to keep before them was that dipsomania was a disease capable of being cured—and to endeavour to work out in the best way possible the principles necessary to effect the cure. As a medical man and a magistrate he had had repeated applications made to him to commit individuals to some place where they would be kept from drink, which they knew to be the cause of their disease; but up to 1879 the law of England did not allow such an asylum to exist. As they were all aware, drinking people were of the most unstable character. It was part of their disease, and what they determined to do one day, they refuse to do on the next; and he thought that the friends and medical advisers of a dipsomaniac should have power to send him not to a prison, but to a place where he would be carefully treated, and where his liberty would be taken away for a certain time. The "Dalrymple Home," which would shortly be ready, would be a home in every sense of the word, where everything that was possible would be done for the purpose of restoring the patients sent to it in health, and in the home there would be a little theological article of belief, namely that alcoholic drink in all its shapes and forms was the very Devil, and that it should be avoided as much as possible. The "Dalrymple Home" would have a great advantage in being able to treat dipsomaniacs in the early stages of their disease, before it became chronic, and he believed they would soon be able to show many permanent cures. He hoped that the Legislature, after a time, would, where a case is thoroughly proved to be one of real dipsomania, allow the person afflicted to be locked up for a certain time so that a cure might be effected. The medical profession had to show that it was possible to cure these cases. This had not at present been proved to the satisfaction of Parliament; but he believed that in five or six years' time the "Dalrymple Home" would have furnished all the evidence required on that point. He, therefore, trusted that the members of the profession would support the home, in which the guests would be made as happy and comfortable as the circumstances would permit.

Mr. Zierenberg (manager of the St. James's Home) said that this year they were able to show that 69 per cent. of the women who had been in the home for six or twelve months had been reclaimed, as they found by constant correspondence. He quoted some instances of women who had been reclaimed in the home after long periods of intemperate habits; and stated that in five years they had had no illness at the home necessitating the calling in of a medical man, though the inmates numbered from eighty to ninety. He believed that medical treatment alone would never reclaim these women. There must be moral and religious influence, or the cure would not be permanently effected.

Dr. Branson thought they were all agreed that the keystone of the whole matter was prevention, and educating the people. He had had some experience in the treatment of inebriates and dipsomaniacs, and he considered that the best thing to do was to try and reach some good point in the moral nature of the patient, and in connection with the redeeming feature try to work in harmony with the general treatment. He had no faith in medical treatment apart from the moral question, and especially in dealing with women inebriates. He could only wish that there were more medical men and clergymen interested in educating the public in these matters. If there were they could force upon the Legislature the necessity of dealing with the subject; but in the meantime it was the duty of medical men to uphold the principles of temperance, and all that is right, pure and good.

On the motion of Dr. Edmunds, seconded by Dr. Norman Kerr, the debate was then adjourned until Midsummer Day at four o'clock.

The Chairman said he was quite sure that before they separated they would wish, especially on the part of those who might not be able to attend
Alcohol Chemically, &c., Considered.

the adjourned discussion, to thank Mr. Alford very cordially for his valuable paper.

The proposition was carried with acclamation, and the meeting was then adjourned.

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WILLIAM J. CORYN,
W. HENRY KESTEVEN.

May 27th, 1881.

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Miscellaneous Communications.

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ALCOHOL, CHEMICALLY, PHYSIOLOGICALLY, AND MICROSCOPICALLY CONSIDERED.

By Surgeon-General C. R. Francis, M.B. Lond., M.R.C.P., formerly Professor of Medicine in the Medical College, Calcutta.*

I.—CHEMICAL.

In nature there is no annihilation. The several elements, nearly seventy in number, of which everything animate and inanimate on the earth, in the air, and in water, is made up, unite with each other in varying, yet definite, proportions to form a multiplicity of compound substances. Their constituents may become disunited and re-arranged; but, as elements, they never die. The conventional "all smoke," alluded to also by David, in speaking of his days being so consumed, and popularly regarded as synonymous with nothing, may in some instances be a valuable commodity. Thus, sulphur combines with carbon, in two proportions of the former with one of the latter, to constitute a liquid that, if a small quantity of it be put into an earthenware or iron vessel and placed in the lower part of a chimney on fire, will shortly

* The substance of a lecture on "Alcohol, Chemically, Physiologically, and Microscopically considered;" delivered on the 24th March, 1881, in the Memorial Hall, Farrington Street, London; being the last of a series of six lectures on Alcohol; instituted by the British Women's Temperance Association.
resolve itself (in combination with oxygen) into sulphurous, and carbonic acid, gases which, rising in large volumes of smoke, will rapidly extinguish the blazing soot. Arsenic, a highly poisonous element, unites with hydrogen—a harmless gas that being ten times lighter than atmospheric air was once in great repute with balloonists—to form arseniuretted hydrogen, one of the deadliest vapours possible. This is the compound which, some forty years ago, caused so much sickness, and even death, in certain localities in London. The arsenic with which the candles (and wicks also) were impregnated—the former thereby acquiring a characteristic white lustre—extracted hydrogen from the moisture in the latter, the result of the combination being a blue flame, from which death radiated in all directions. These were called corpse candles, as mischievous in their time as the compounds of arsenic with oxygen and copper, known as Emerald’s green and Scheele’s green, and which are used for colouring the green papers on our walls in the present day. Chlorine, so valuable in bleaching, combines with the same gas (hydrogen) to form hydrochloric acid, a fluid essentially identical with the gastric juice in our stomachs, and which physicians prescribe when this is disordered or absent. Alumina, represented in nature by the sapphire, the corundum and the ruby, is produced by oxygen combining—each of these stones having its own special proportion of oxygen—with aluminium, a light bright metal largely employed in the arts, and sometimes made to resemble gold. The elements, which more particularly interest us to-day in their combinations with each other, are carbon, oxygen, and hydrogen. The first, giving solidity to the substances into the composition of which it enters, as clothing, some kinds of food, plants, trees, &c., and seen in nature in the diamond, graphite, charcoal (all of which are more or less pure carbon), combines with hydrogen, in a certain proportion of each, to form that dread of the miner—fire damp; and again, in yet other pro-
portions, to constitute marsh gas, a product of the decomposition of dead leaves and known, in certain localities, to benighted travellers as the Will o’ the Wisp. It combines with hydrogen, oxygen being now added, to develop alcohol. Ether, too, consists of these same elements, the amount of the two first varying with the kind of ether. These combinations of elements, resulting in substances so valuable in the arts and to some extent in medicine, were discovered, in the first instance, by accident. The knowledge, then limited to a small area, soon became more general, and, in the case of alcohol, misapplied. That which, confined to its legitimate use, was a boon to man, thus became his bane.

MANUFACTURE OF ALCOHOL.

The question arises “How is alcohol made?” Simply, by a ferment acting upon a saccharine substance, mixed with water, at a certain temperature. If a little sugar and water be put into a saucer placed on a shelf, a piece of paste being added to serve as a ferment, and the temperature be between 40 Fah. and 140 Fah., after a time an intestine motion will take place. This is ‘vinous fermentation’ which, in reality, is a separation of the elements carbon, oxygen, and hydrogen, of which the sugar and water are composed, and their rearrangement into carbonic acid, alcohol and lees. The carbonic acid, rising to the surface as a deleterious gas, is, if in large quantity, very mischievous, as in brewers’ vats and in those where champagne is made on an extensive scale. In this latter case naked men descend, in some parts of Burgundy and South Africa, into the vat to tread out the juice from the fruit of the vine; and the carbonic acid that floats on the surface acts so detrimentally, even threatening suffocation, that relief has to be speedily provided. Relays of naked men are therefore constantly at hand. The alcohol, whether in wine, beer or spirit (for it is after all the essence of these fluids giving them their intoxicating character), remains in the centre, whilst the lees,
consisting of various ingredients in which extracts predominate, sink to the bottom. This is the gist of the matter. Any saccharine substance, acted upon in the same way, will be converted into alcohol, &c. In the manufacture of wine grape juice is, or should be, used; but, in that of alcoholic drinks generally, a variety of material is thus utilised. In Mexico a species of agave, in India rice, and the flowers of the bassia latifolia (vern. muhooa), in Tartary koumiss (mare’s milk), and in Africa the plain- tain, give to the inhabitants their alcoholic beverage. Dates are sometimes used in countries where they abound; in others, as in our own, potatoes, and certain grains, the starch of which (by steeping the grains in water) becomes converted into sugar.

I mentioned that a ferment is essential to fermentation; but, although I specified paste—something that, containing nitrogen, was capable of undergoing putrefaction—as necessary, yet, in many instances, this would not be required; as the seeds of a ferment often exist in large quantities in the atmosphere. The vitality of a ferment depends upon the presence of a living organism of low growth—a fungus if you will—the sporules, or seeds, of which may be found floating round about us. The ferment of the brewer is yeast, which reproduces itself in the process of brewing; and its vitality is due to the fungus known as mycoderma cerevisiae. There are several kinds of fermentation, the most familiar examples of which are the “vinous,” or alcoholic; the “acetous,” seen in sour beer and beer vinegar—one great art in brewing is to prevent the one fermentation from running into the other as it is apt to do;—and the “lactic,” as seen in sour milk. Each has its own special ferment. It has lately been announced in the papers that M. Münitz has discovered alcohol in all kinds of water, except pure spring water; and there is reason to believe that it is to be found in many places on the ground. Nor is there anything very wonderful in this. We have seen that alcohol is the result of a particular arrangement of certain elements, so caused by the operation of a ferment; and, as these elements and ferments are pretty freely distributed in nature, why should they not, sometimes, work together and produce “vinous fermentation”? M. Pasteur has found, in certain ripe fruits, a trace—mark the word—of alcohol, not enough to justify the scoffer at total abstinence in saying, “Why, here you have alcohol in nature;” and in, therefore, asserting that it was meant to be drunk. The discovery is a scientific curiosity—nothing more. If we could see it universally distributed, we would see water—rivers of rum, in the existence of which the old lady with the sailor-grandson readily believed, though she would give no credence to the flying fish—then the argument would be worth listening to. But, it is manifestly preposterous, if not wicked, to suppose that a beneficent Creator intended for ordinary use that which is an acknowledged poison, and which sometimes requires the skill of an expert to discover.

KINDS OF ALCOHOL.

I have spoken of alcohol generally, as composed of carbon, oxygen, and hydrogen; but there are several kinds of alcohol, the character of each depending mainly on the amount of carbon it contains. Thus, there is ethyllic alcohol, the purest of all, and containing—with reference to the others—a minimum of this element. This is the alcohol which is formed in the “vinous fermentation” of the grape; and which exists in the best alcoholic drinks. It is the spirit of wine of the Pharmacopoeia and is used in the spirit lamp, giving out a strong heat without smoke. If I put a piece of cotton wool into some ethyllic alcohol and set fire to it in a watch glass, you will observe that no deposit takes place on the white saucer that I hold inverted over it. Its polished surface remains unburnished: there is nothing beyond a little moisture. The carbon has combined with the oxygen in the alcohol, and, taking more from the air, has been rendered gaseous as carbonic acid; whilst the hydrogen
(in the alcohol) has, with more oxygen from the atmosphere, helped to form water, which has condensed as the moisture on the saucer. This same experiment led the analytical chemists of a hundred years ago to look upon alcohol as a mixture of fire and water. They called it, in fact, "fire water." They did not know the exact composition of alcohol, partly because, using as they did the ethyllic variety, there was no deposit of carbon to invite inquiry, and so the existence of this element was not suspected. But now, if I dip another piece of cotton wool into amyllic alcohol—popularly known as fusel oil, the alcoholic constituent of potno bready—and set fire to it, you will see that the inverted saucer becomes blackened, because this alcohol contains more carbon. Some of it is burnt off, as in the case of the ethyllic alcohol, but the excess is deposited. I would ask you to particularly notice this fact, as I shall have to refer to it presently when speaking of the physiological action of alcohol on the human frame. Amlytic alcohol is largely used to adulterate the purer kind; and, as it causes delirium tremens, or otherwise disorders the system more readily than the purer sort, the drinks containing it should be especially avoided. By merely rubbing some of the suspected liquor on the palm of the hand, and letting it evaporate, the peculiar smell of the fusel oil may be detected. But the skill of an expert will, sometimes, be necessary. Amylic alcohol was contained in the so-called whisky, which Sir Samuel Baker introduced to the notice of one of the kings of Africa, when he (Sir Samuel), was suffering from chronic ague. He first grew the potatoes, and, from them, prepared the whisky. The king, who up to that time knew nothing of such strong liquor, enjoyed it so much that he, too, grew potatoes for the same purpose. There are other kinds of alcohol, as the butyllic, methyllic, and mercoaptan. The first of these is remarkable chiefly for its deadening power upon nerve tissue, and is used, occasionally, on that account for toothache. The second, known also as pyoxylic, or wood spirit, exists in the liquid obtained by distillation from certain kinds of wood. As being a cheaper kind this alcohol is much employed in the arts, and, owing to its comparatively greater volatility, it may be inhaled like chloroform, or ether. Being a lighter alcohol, and less injurious in its action on the system, Dr. Richardson speaks of it as the safest of all, and therefore recommends it where alcohol is indicated. But it does not exist in any alcoholic beverage; and, except medicinally by a few, is not likely to be much used. Mercaptan is more of a scientific curiosity, as sulphur takes the place, in its composition, of oxygen. All alcohols have a remarkable affinity for water; and this is one of the reasons of their being so injurious to the body. Even after careful distillation alcohol contains 72 per cent. of water, which can only be removed by distilling it with something that will combine with and, so, separate it, as potassium carbonate (pearl ash), or quick lime.

UNFERMENTED WINE.

And now a word or two about drinks that are not fermented. There are some persons who, unacquainted with the subject, affirm that there can be no such thing. They add, that, when the ingredients required (for vinous fermentation) come together, the intestine motion takes place immediately. But this is not so, always. We are much indebted to Dr. Norman Kerr for his investigations, and published experiments on this point; and he informs us, thus confirming, too, the observations of others, that fermentation does not occur between 40° Fahr., nor above 140° Fahr. He has known grape juice kept in a cold cellar in Britain over a whole winter without a sign of fermentation; and the same result, he affirms, would have been attained by depositing the unfermented fluid in a very cold well. If pure grape juice, ready prepared for vinous fermentation—this is the mustum of the Romans and the gleukos of the Greeks—be heated to a temperature many
degrees below the boiling point of water (212° Fahr.), and then be at once poured into a new leathern vessel, called in the East a bottle, there will, if the vessel be forthwith closely and tightly tied, be no fermentation. This very experiment was made by Dr. Norman Kerr in conjunction with an accomplished analytical chemist, Mr. F. A. Clifford; and the bottle, in this case a pigskin, was suspended for two months in an atmosphere laden with yeast germs. The mean temperature (54° Fahr.) was favourable to "vinous fermentation"; but, when the juice was examined at the end of the two months, it was evident that none had taken place; not a trace of alcohol could be detected! To preserve unfermented wine the essentials are a clean bottle and the exclusion of atmospheric air. This fact will throw some light upon our Saviour's saying, "No man putteth new wine into old bottles." The surface of these leathern bottles would afford a favourable nidus for the adhesion of ferments, which would be more likely to abound in those that were old. If unfermented wine were put into such a bottle fermentation would be soon set up, and the expansion of carbonic acid, thus generated, would burst open the old leathern receptacle; in the language of our Lord the bottle would be marred, whilst the wine was spilled. There are some who believe that fermented wine was referred to; that, a further supply of fermenting material being found in an old bottle, there would be further fermentation and consequent rupture. Alcoholic liquors are sometimes stowed away before the fermenting process is over. In the case, occasionally, of bottled beer it is continued in the stomach, to the manifest disadvantage of that much-tried organ! I confess, however, that I do not hold with this theory, but strongly incline to Dr. Kerr's opinion, that the wine of Cana was unfermented and unin intoxicating. This view is more in harmony, too, with our Saviour's general teaching. "Vinous fermentation" may be prevented by adding to the saccharine mixture certain antiseptics, as salicylic acid, which, moreover, can arrest fermentation after it has commenced. Sulphurous acid is also largely used by some vine growers, and manufacturers of unfermented wine on the Continent. But, it is frequently urged, "This stuff is not wine; it is nothing better than sugar and water coloured." Be it what it may, the liquid is certainly called wine in many narratives of travel in the East. Wine is a general term somewhat loosely applied. It includes the hundred, or more, wines that are placed on our tables in England and on the Continent—those which contain 7 or 8 per cent. only. of alcohol as well as those in which 50 per cent. and upwards is found—as also the substances which, although alcohol has been used in their manufacture, are not, in the conventional sense of the term, wines at all. Amongst these last are wine of colchicum, wine of aloes, ipecacuanha wine, steel wine, and so on. And who shall say that it was not myrtle or hyssop wine—both in those days being much in vogue for certain dyspeptic ailments—that St. Paul recommended to Timothy? So with tea. Tea is not always the infusion of the leaves of the camellia bohea, or camellia viridis. We have also sena tea, chamomile tea, linseed tea, &c. Why, therefore, should we not have unfermented as well as fermented wine? Doubtless, the oinos of the Greeks, and the vinum of the Romans, meant originally the latter. Yet, some of the wines in use in those days were evidently unfermented, e.g., passum, a sweet wine prepared from grapes that had been dried in the sun; mustum, or the fresh juice of the grape; protopum, a variety of the same; nullisum; * sapa; * defrutum and carurn; all of which were the fruit of the vine, unpressed; mixed with honey; or more or less boiled down. Some wines were made with salt water, as the Myndian, Halicarnassian, Rhodian, and Cean wines. These were not intoxicating but digestive;

* Dr. Norman Kerr has himself made these wines.
yet they went by the name of wine. I quite think that what is required and what chemistry, with its ever-varying discovery for weal or woe, will I doubt not one day find for us, is a palatable, nutritive, inexpensive, cheering, and non-alcoholic drink. Zoedone does, to a great extent, supply this want, but it is expensive; and, although it hardly deserves the summary prescription that *has been suggested with reference to it, it should not be taken indiscriminately and continuously without first consulting the family doctor; as it contains, amongst other ingredients of a medical nature, a little iron, which does not agree, even in small quantities, with every one. I cannot leave this part of the subject without a word about Communion wine. Bearing in mind that a mere sip of such wine, containing alcohol, has rekindled the extinguished (?) craving of the quondam drunkard, is it not a matter for serious consideration with ministers of religion as to whether they should not give the fruit of the vine in all its pristine purity? Frank Wright's unfermented wine is an excellent form in which to provide it; and it, or some other unfermented variety, is used by, I believe, 1,800 Christian congregations in the United Kingdom. Text, as containing a minimum of alcohol, is the least objectionable of intoxicating wines (port should not on any account be offered); but it is often very impure, and, in such cases, consists of the dregs of sherry casks mixed with saccharine matter—usually treacle.

USES OF ALCOHOL.

In the arts alcohol, like ether, is very valuable. It will extract the essence of a substance more readily and thoroughly than water. Our tinctures in the Pharmacopeia are thus made; e.g. tincture of opium (laudanum); compound tincture of camphor (paregoric); compound tincture of benzoin (franc' balsam), &c., &c. In the Temperance Hospital the authorities, true to their principle of rigidly excluding alcohol under any circumstances, now employ glycerine in place of it. The responsibility of its use in disease rests with the medical officer prescribing it. Alcohol is particularly valuable in the manufacture of some of our most precious remedial agents. Thus, if certain proportions of it and nitric acid be mixed together and heated, nitrite of amyl, so serviceable in relieving the agonising spasms in angina pectoris, will be obtained. If, instead of nitric, we use sulphuric acid, we shall get ether: if chlorine be passed through alcohol hydrate of chloral is the result; and, if chloride of lime and alcohol be treated together, the outcome is chloroform. Alcohol is of undoubted value in medicine, but, as before observed, was never intended as a beverage.

II.—PHYSIOLOGICAL.

Having thus, cursorily, spoken of alcohol in its chemical aspect, I pass on to refer to its action on matter, inanimate and animate.

One of the chief characteristics of alcohol is its antiseptic quality. By taking to itself the oxygen of the tissues, with which it is brought into contact, it prevents their oxidation and consequent putrefaction; and, thus, preserves them. Hence, its value in connection with mince pies, which some rigid teetotalers regard with suspicion on account of the alcohol used in preparing the mince-meat. But, there really need be no objection, as alcohol evaporates at a much lower temperature than that at which water boils; and, in a well-heated oven, is soon, having done its work, dispelled. So, when brandy is poured over a Christmas pudding and set fire to, the alcohol rapidly burns away. Alcohol is employed to preserve specimens which, the water being abstracted, become thereby hardened. This is the effect upon the human brain out of the body, if it be immersed in alcohol. The action of spirit upon the living brain is to soften it, in a way to be explained presently. A popular idea prevails that alcohol

* I am indebted to Dr. Norman Kerr for having thus lucidly satisfied the scruples of one or two of my teetotal friends.
assists digestion: but, so far as helping to break up and dissolve the food intended for conversion into blood, it does nothing of the kind. On the contrary, according to Dr. Henry Munroe's experiments, finely minced beef, which if treated with gastric juice and water duly, after a time, undergoes solution, when alcohol is used without water remains, even at the end of several hours, unacted upon. Quite recently, at a wedding breakfast, the bridegroom inadvertently took a lump of something that "lay heavy at his chest." The universal panacea, alcohol, in the shape of whisky, was recommended and drunk—the result being that the lump lay heavier than ever,—and the poor sufferer shortly afterwards died.*

**ACTION ON ANIMATE MATTER.**

1. *On Plants.*—M. Claude Bernard has shown that growing cress, if exposed to the vapour of ether, will cease growing; but that, if it be removed from its influence, growth will continue. So, Dr. James Ridge has demonstrated a similar result in connection with the vapour of alcohol. Both alcohol and ether deaden the vitality, the sensibility, of the plant,—the same effect, indeed, that is produced on man by alcohol.

2. *On Man.*—The brain, heart, and lungs, are the tripod, on the integrity of which life depends; and alcohol, unless taken in extreme moderation, may, sooner or later, injure them all. The working power of each is ensured by the purity of the blood, which purity is likely to be affected by alcohol. In a healthy man there are from sixteen to twenty pounds of this fluid circulating through the vessels appointed to convey it to all parts of the body; and it completes the circuit once in every two minutes, or thirty times in an hour, the movement being slower in the more distant vessels (which form a beautiful mesh resembling the skeleton of a leaf after maceration in water) and quicker through those that are larger and nearer the heart.

**COMPOSITION OF THE BLOOD.**

The blood is composed of various constituents, the chief of which need only be mentioned here. These are the red and white corpuscles, fibrine, albumen, salts, and water.

*The Corpuscles.* The red corpuscles floating in the centre of the stream (the white take the sides, but, as they are not concerned with our present inquiry, we need do no more than just allude to them) resemble, when examined under the microscope, sovereigns arranged in rows or rouleaux. They seem to be round cells (with sometimes, a central nucleus which, however, is an optical delusion); and they contain iron, which gives them their red colour. The function of these corpuscles is to absorb, when circulating through the lungs, oxygen from the air, and to convey it to all parts of the body where carbon being ready to combine with it, carbonic acid is formed—a result that is accompanied by the development of animal heat and physical force. The carbonic acid is now conveyed by the same class of corpuscles back into the lungs, whence it is eliminated from the system. Upon the unimpaired integrity, therefore, of these microscopic bodies depend the necessary heat of the body and the removal from it of much that, if retained, would be injurious. Alcohol (even 1 part in 500 will suffice) disturbs this integrity. Owing to the absorption of their moisture they shrink, adhere together *en masse,* and thus the flow of blood becomes embarrassed and impeded; there is congestion throughout. Oxygen is now no longer absorbed in sufficient quantity; (some of the corpuscles remain intact); less carbon is burnt off, and there is less animal heat, the body consequently feeling colder. You will now understand better the specially deleterious effects of amylic alcohol.

* Doubtless there are certain conditions of the stomach, e.g., pain caused by flatulence, which a warming stimulant, as essence of ginger in water, will relieve, quite as effectually as whisky-and-water, whose use, however, in such a case, cannot be denied. The one has a sting, though, which the other has not.
Not only is the carbon, already in the body, not removed but more is added to it! By the habitually excessive use of alcohol the blood becomes thinner and darker, from imperfect aération, and retention of carbon; of this last there is sometimes as much as 30 per cent. more than in health, giving to the fluid quite an oily feel. The carbon is deposited as fat, and the alcoholic becomes, often prematurely, obese. Well for him if this be the only result; worse if some of the normal structure of important organs disappears and is replaced by fat! Under these circumstances erysipelas is apt to supervene after injuries. Alcohol is not miscible with the blood nor with any of its constituents.

The fibrine, of which there are from 2 to 3 parts in 1,000, speaking popularly holds the blood together. In the alcoholic this function becomes limited; the fibrine, acted upon by the alcohol, loses its normal character and separates. Haemorrhage is, then, more likely to occur. In healthy persons a cut heals rapidly; the fibrine coagulating, the surfaces of the wound unite by the first intention. But in drunkards an open sore, attended with scabbing and draining away of nutritive material, is apt to follow. Blotches may appear on the face. Owing to a combination of causes—the impairment of the red corpuscles, with congestions, imperfect aération of the blood, retention of carbon, together with the separation of the fibrine—the countenance may assume a mottled appearance and, in some cases, is of so dark a hue, that one is reminded of those unhappy victims of epileptic fits who—taking nitrate of silver in the hope of being freed from the disease—permanently darken the skin without effecting a cure. The drivers of public conveyances sometimes have this condition very prominently developed. Their aspect tells a fearful tale of a probably similar condition within.

Albumen.—There is a substance distributed throughout the body called colloidal, and its representatives in the blood are fibrine (this is its purest form) and albumen, of which last there is about 70 parts in 1,000. Out of this substance the various structures are formed—arteries, veins, nerves, muscles, and all the several organs, of every shape and size. It is essentially an elastic, semi-fluid material. Alcohol, by abstracting the moisture, destroys the fluidity and elasticity, and thus, secondarily, the structures built up from it.

Salts.—Under the free use of alcohol the salts of the blood may appear in excess in the renal secretion. The existence of this excess is sometimes specially hurtful. Dr. B. W. Richardson believes that the formation of cataract in the eye, and of stone in the bladder, may be promoted thereby.

Water.—Owing to the great affinity of alcohol for water, more or less of the latter is removed, and dryness ensues. The system, deprived of its normal supply, indicates its need by thirst. It may here be mentioned that a dry state of the mouth and fauces does not always imply this condition. It may often be relieved by sucking an acidulated drop.

The Blood-vessels are apt to be weakened by the abuse of alcohol; their elasticity is diminished, and congestion ensues. Chronic inflammation of the inner coat frequently occurs, laying the foundation of further changes, which sometimes end in the vessels becoming rigid and calcareous, or mere bony tubes.

The Brain.—Passing on to a consideration of the effect of alcohol on the (so-called) tripod of life, we begin with the brain. Out of the body, as before mentioned, the brain, if immersed in alcohol, becomes hard. In life, however, an opposite condition is the consequence of excessive alcoholic indulgence: the brain becomes soft. The integrity of the fine vessels being impaired, their resiliency and power of resistance are diminished; congestion takes place, and the organ, not receiving its proper supply of blood, is imperfectly nourished. The diseased condition of the arteries just alluded to leads to the deposit, moreover, of morbid products, which are apt to
become cartilaginous, and even bony. This (so-called) atheromatous deposit, and the congestion together, are the ultimate cause of the softening. The cells of the brain-matter degenerate, and fat is often interposed: the interstitial membrane is irritated, inflames, and becomes thickened, thus adding to the embarrassment of the circulation already delayed. After heavy drinking the brain is gorged with blood. If a piece of brain in this state be sliced off the cut surfaces present a vast number of vermilion points. Dr. Richardson once examined such a brain, which had only just been forcibly ejected from the skull of a drunken man killed on the railway; and this was the appearance. The remote consequences of alcoholic indulgence are various. Delirium tremens is one of the most familiar. In this disease the brain itself is congested, and the membranes are irritated. You are aware that in natural sleep the brain is comparatively empty of blood—it is anæmic. In a congested brain there is insomnia, or want of sleep: and the great object of treatment in delirium tremens, and in other brain disorders where there is a similar condition, is to give that which, by acting on the nervous system, will promote the advent of "tired nature's sweet restorer." If the drinker drinks deep enough, he too will sleep; but it will be the drunken sleep of coma. Some persons take a nightcap, i.e., a stiff glass of grog before going to bed, in view to procuring early sleep. But too frequently—congestion following—sleep is altogether banished, and the individual passes a restless night. In some cases vertigo (dizziness), in others loss of memory—dementia even—point to the cerebral mischief within. The influence of the brain (it and the spinal cord and nerves are the controlling department, the brain itself being the controller-general) is defective; the mental power is lessened; and speech—that noble characteristic of man who is thus distinguished from the mere beast that has only a speechless voice—becomes confused and unintelligible. Apoplexy, epilepsy, paralysis (local or general), or insanity, may each, or other, supervene sooner or later upon abuse of alcohol.

The Spinal cord and nerve tissue of the alcoholic suffer much in the same way as the brain. In advanced cases there are muscular starts in sleep; the limbs, even in those that are lighter, feel unnaturally heavy and weary after fatigue (I have seen this weariness where there has been no exertion at all); and sudden falls of temperature are keenly felt. The vital energies become affected, and yet the alcoholic, not recognising his enemy, flies to it as a remedy which, so far from proving one, makes his condition worse; and so, on and on, till the vital energies are seriously injured; agitation of the limbs ensues; the co-ordinating power is lost; and paralysis closes the poor sufferer's career. It sometimes happens that the nerve-tissue being unduly pressed upon by the congested blood-vessels gives rise to severe neuralgic pain.

The Lungs are very liable to be injured by alcohol. Their fine vessels become readily relaxed by it, and congestion results. This is one of the chief effects, upon these organs, of spirit drinking. Of all parts of the body none are so impressionable as the lungs, none so susceptible of atmospheric changes and sudden falls of temperature. Hence, the fatal congestion which one so often sees in the lungs of drunkards in severe winters. The congestion leads to bronchitis, which, in all confirmed alcoholics, is more difficult to treat than where the constitution has been uninjured by alcohol. We are indebted to Dr. B.W. Richardson, to whom the profession, as well as the public, already owe so much, for demonstrating the existence of a distinct form of consumption of the lungs which, as being due to alcohol, he calls "alcoholic phthisis." Alcohol likewise acts prejudicially on the elastic spongy connective membranous tissue; as it does upon similar tissue, in fact, in other organs.

The Heart readily responds to the stimulus of alcohol: it beats faster and works harder. By-and-by, if the stimulus be continued, the response becomes more feeble, the result of
weakening of the muscular walls and dilatation of the cavities. The beats are not so regular: there is palpitation, and the least exertion tries the ever-willing though much-abused organ. Later on, there is muscular degeneration; fat is interposed between the fibres; or, worse still, these become fatty. Sinking is a constant symptom throughout, which leads the alcoholist to fly, again and again, to his treacherous auxiliary. In some cases the membrane which envelopes and that which lines the heart are—the latter especially—changed in quality. It thickens, becomes cartilaginous, or even bony. The valves, which, situated at the union of the auricles with the ventricles and at that of the latter with the pulmonary artery and aorta, by opening out like an umbrella at the moment of ventricular contraction and onward propulsion of the blood, prevents regurgitation of the latter, are studded with abnormal growths—little wartlike vegetation—and lose their suppleness. Consequently, they do not fit closely together: the blood—some of it—flows backwards, and congestion ensues, first in organs nearest the heart, then occasionally in those more distant; and, sometimes, dropsy supervenes.

The Stomach.—Two of the surest of the ill effects of alcoholic drinking are impaired digestion and shattered nerves. It is well for the stomach that the alcohol so soon passes out of it. Were it otherwise this organ would succumb more rapidly than it does. Some of the earliest symptoms of alcoholism are nausea—amounting often to vomiting—loathing of food, flatulence, a sense of distension, and prostration. The stomach is weakened and irritated. Congestion—even inflammation sometimes—follows. The skin is now flushed and perspiring, now pale, cold, and clammy. Other organs, especially the liver, are apt to be simultaneously deranged. "Sinking" at the pit of the stomach is a prominent symptom, and, too frequently, a glass of sherry—"a hair of the dog, &c."—is taken to relieve it: and alcohol becomes, as in the case of sinking from weakened heart, a permanent but enslaving ally. In some cases the derangement of the stomach is so great that, to relieve the nausea and sinking, a "brandy and soda" is resorted to the first thing in the morning, another being taken a couple of hours later, and a third at noon, when—the stomach having been lashed up into a certain amount of activity—a modicum of breakfast is eaten. Loss of appetite and alcoholism are commonly concomitant.

The Bowels, when intolerant of alcohol, show it by becoming irritated and relaxed, this condition being accompanied usually by purging.

The Liver.—Very soon after the introduction of alcohol into the stomach, it is conveyed direct to the liver, where it causes stagnation of the blood—congestion. This is one of the first, simplest, and most remediable of the effects—so far as the liver is concerned—of drinking. Some persons cannot take alcohol, not even a glass of beer (I mean bottled beer, or the publican's ale, not the home brewed beverage which is much milder and comparatively harmless) without some derangement of the liver; as evidenced by flatulence, pain between the shoulders, or in the organ itself, disinclination for food, &c. Medical officers serving in India and the tropics see a good deal of this sort of thing. The liver in those countries being preternaturally active and more prone to derangement than in colder regions, the resident should take but little of that which is certain to increase this activity, &c. Too many, however, adopt an opposite course, and the climate is blamed when, in truth, the fault is their own. Remedial measures may be prescribed with more or less temporary benefit, but, unless the practice which led to the development of the symptoms be discontinued, they will return. The most effective remedy is radical and permanent, viz., a sojourn of some weeks in a hydroopathic establishment, where the lesson "how to live rationally" is taught—a lesson involving, amongst other things, total abstinence from alcohol. In the severer cases the liver may become enlarged, inflamed, and, finally,
suppurate. That dangerous and much dreaded condition, abscess of the liver, at last overtakes the inveterate tippler. How many such cases have I seen, alas! in India: though I am bound to add that I have seen others where alcohol had never been taken to excess, and where, evidently, the climate alone was responsible. I may here say that nearly all the diseases resulting from alcoholic abuse may of course be due to other causes, though alcohol is, now-a-days, abundantly recognised as a very potential agent in producing them. In the most serious cases of liver disease, resulting from alcohol, the interstitial membrane inflames, thickens, shrinks, and, dragging upon the substance of the organ in a way that gives the latter the hobnailed appearance so characteristic of the "gin-drinker's liver," finally causes imperfect nourishment, and even atrophy of this important gland; which becomes, moreover, so impermeable as to be a barrier to the circulation; and dropsy, in one of its most fatal forms, completes the sequence of morbid events.

The Kidneys of the alcoholic are liable to suffer much in the same way as the liver. The interstitial connective tissue inflames, thickens, shrinks, leading to contraction of the affected organ, and frequently dropsy. The kidneys may become fatty, or watry (so indeed may the liver), and their use as eliminating organs so impaired that what ought to be, by them, removed from the body, remains circulating with the blood, and does incalculable mischief. Thus urea, one of the chief of the effete products, finds its way into the brain, and causes the fatal sleep of coma. Cholera often ends fatally in consequence of the persistent inaction of the kidneys, and the non-elimination of the urea. The patient dies comatoso. Therefore—the secondary action of alcohol being narcotic—brandy, once so freely used in this disease, has been discontinued.

The Interstitial Membranes (so frequently mentioned) which surround and permeate the several organs—none are without these—serve at once as an interstitial support, and a means of keeping the integral constituents of the organs apart. They are colloidal structures, and serve also as filters to the body. If acted upon by alcohol they lose their moisture, thicken, shrink, and contract upon and condense the organ, which they envelope. Their functions are thus interfered with, as well as those of the condensed organ, which leads, as already stated, to further abnormal changes elsewhere.

Muscles.—Abuse of alcohol may lead to the impairment of the voluntary muscles. Fat becomes deposited amongst and between the muscular fibres, which, therefore, cannot contract properly.

Alcohol in moderation.—It will be urged by many that, whilst the evils of excess in alcohol may be freely admitted, there is a large majority of drinkers who, taking their liquor in moderation as a daily beverage, enjoy excellent health, and live to a good old age: alcohol cannot therefore, it is added, be so bad after all. This majority may be divided into two classes; (a) those who really do not take enough to hurt themselves;* and (b) those who do well in spite of it.

It is alleged by competent authority† that from 1 to 1½ ounce of alcohol, represented by 1½ wineglass of brandy,‡ 3 of sherry§ or port,§ 7 of claret or hock,|| and by 1½ pints (three tumblers) of beer,¶ may be taken throughout the twenty-four hours with impunity—in some cases, it may be, with benefit. There is one kind of monkey (the rhesus imatus, vern. bhundar) upon

* Even this minimum quantity is too much for some. It may, even if there be no more than what is contained in a wineglass of sherry, either cloud the faculties, or cause headache, or otherwise unpleasantly affect the nervous system.

† Parkes. The quantities (maximum) are for a strong healthy man; and, if the percentage of alcohol be greater, these quantities must, of course, be reduced.

‡ Containing 50 per cent. of alcohol.
§ Do. 20 do. do.
|| Do. 10 do. do.
¶ Do. 5 do. do.
whom strychnine acts, as it does upon man, as a poison: and another (the *sennopithecus entellus*, vern. lungoor) who eats it with apparent relish! "One man's meat is another man's poison." So with alcohol. What would have no (evident) effect upon one person might put another under the table. Fortunate are they who, either disliking alcoholic drinks, or finding that they disagree, eschew them altogether. Connected with class b is another and a very large class, comprising those who seem to do well under a fair (or even large) daily allowance of alcohol, but upon whom it will assuredly tell unfavourably sooner or later. Some of these, if placed in circumstances where they are deprived of their accustomed stimulus, rapidly run down, and, if not judiciously treated, succumb. Amongst such are the burly drymen who seem Herculean in their physique. They drink unceasingly—a glass here and another there—ever ready to be thus remunerated for bringing the periodical cask to the customer's cellar! But, these men are not long lived; and, if suddenly struck down by an accident, they show that of genuine stamina they have but little! So, the victim of "alcoholic phthisis" looks remarkably well. The best part of him is his face. And he reaches the age of forty-five or so before the existence of the fell disease is disclosed. "Seasoned vessels" again, as they are called, live on the brink of a precipice. A larger quantity of alcohol may be taken daily before thirty years of age than after it. The standard of moderation must then, if this has been excessive, be reduced. The system cannot now "throw it off" so well.

*Hope for the Inebriate.*—It must not be inferred from all that has been said that disease from alcohol, once developed, is necessarily fatal. The recuperative power of nature is marvellous, and the natural tendency of disorders in the system is to recovery. The irreclaimable (?) drunkard, who is hopeless about himself, may therefore take courage and be convinced that, unless incurable disease has begun, he may, if he will but give up his mad career, yet enjoy excellent health and lead a useful and happy life.

*Why do people drink?*—To stimulate, to cheer, to promote geniality. Social gatherings are supposed to become more social under the influence of alcohol. A bargain proceeds more amicably if it be wetted. All this is pleasant enough; and, if there were nothing beyond, unobjectionable. On the Continent, in Italy, France, and Spain, for example, men drink wine for good fellowship: but their wines contain, comparatively, a mere modicum of alcohol, and they do not, as a rule, drink to the same excess as ourselves. Had we in England been content with such wines, which were found by the House of Commons' Committee appointed some thirty years ago to inquire into the subject to contain little more than 17 per cent. of alcohol, and had we known as well as we know now (though too many, alas, are even yet ignorant) the deleterious effects of this poison, and so avoided the too free use of liquors in which it exists to the extent of 50 per cent., the present campaign against drinking would never have been needed. Men, and women too, drink for other than social purposes. They believe in the *nutritive qualities* of alcohol. Nursing mothers take it for this reason; so does the labouring man, for the same, in his beer; similarly, the three birthdays of the year—that of our Saviour, of the year itself, of children—are celebrated in alcohol: and, after dinner, it is given to the little ones, in wine, to do the latter (the children) good. It is taken in moderation for the stomach's sake—St. Paul's advice to Timothy being quoted in support; it is taken, too often in

*Absinthe and spirit-drinking are, however, too fashionable in France.*
excess, to keep out the cold, whereas it dispels the heat of the body, leaving the latter more susceptible of cold than before. It is swallowed by the miserable and outcasts of society to deaden their sorrow. Be the object what it may, it is only momentarily attained. Depression too surely ensues, followed, it may be, by intoxication, narcotisation, and even death.

Stages of alcoholic action. — The first stage of alcoholic action is vascular* excitement, rapidly followed by exhaustion (of the vessels): then comes a period of excitement (with corresponding exhaustion) of the spinal cord, and muscular disturbance: then, one of unbalanced reasoning power and of volition: complete collapse of the nervous function closing the fourth stage.

What becomes of the alcohol in the body? — It was formerly supposed that the alcohol passed through the body unchanged, as indicated by what appears in the secretion from the kidneys. But the best and most recent authorities† state that it is only a fractional part which is thus found, the greater portion being converted into other compounds, of which aldehyde, formed by the action of acids on the alcohol, is the chief. It is understood that, when alcohol appears in the renal secretion, it is a sign that the individual has exceeded the prescribed limit. There are many tipplers who say that they prefer gin, because it passes off so quickly! Nevertheless, it remains quite long enough to do mischief, if taken in excess. Whatever becomes of the alcohol and whatever shape it may, after a time, assume in the body, it is a poison to be recognised, and dealt with as such.

Alcoholic experience. — The injuriousness of intoxicating drinks, even in so-called moderation, and the benefit of total abstinence, are abundantly proved by past and present experience.

* This is the mischievous stage. Less harm, obviously, is done by the drunk and incapable than by one into whom unusual courage or daring have been infused.

† Anstie and Dupré.

Captain Cook once came in the course of his voyages upon an island where there were several old people; but they, with the younger ones, were (comparatively) hale and hearty. They had never seen alcohol nor anything inebriating. The Maoris first became acquainted with such drinks from us. These facts dispose of the assertion that some form of stimulo-narcotic—being essential to man's welfare—is to be found in every part of the globe. Alcohol is the missionary's greatest obstacle to success. He, the vicegerent of Deity, conveys to the heathen the sublime truths of Christianity, practising its precepts in his daily life; whilst his brother Christian (?), by instructing in the use of "fire-water," and displaying when under its influence qualities of which even the savage would be ashamed, seems to be, not the servant of Christ whose name he bears, but rather, an ambassador from the devil. They who have to use their brains continuously in severe intellectual work avoid alcohol. The three first wranglers of the year at Cambridge are total abstainers. They whose physical powers are to be taxed to the utmost for a prolonged period, know that they are more likely to break down if they indulge in intoxicating beverages: hence these are strictly interdicted in training for any athletic exercises. Divers, swimmers, sportsmen—all eschew alcohol. Voyagers—whether to tropical or arctic regions—find themselves better without it. Soldiers, amongst whom there are now nearly 20,000 total abstainers, maintain their physical energy best on cocoa, coffee, or tea. The Australian cricketers of 1880, who won so many matches, and proved themselves a united foe worthy to meet the steel of England's best Eleven, are teetotalers. Many publicans, licensed victuallers, &c., send their sons to colleges and schools conducted on total abstinence principles. Prisoners—many of them up to the moment of incarceration hard drinkers—so far from suffering from the sudden withdrawal of their accustomed liquor actually improve in health, and come out, in that respect, far better than
when they went in. And, finally, the records of life assurance societies tell us that the number in the total abstainer’s section, who are annually expected to die, do not die so regularly as the non-abstainers, thus securing for this portion of these societies a better balance-sheet and a larger dividend.

Hereditary Transmission.—There is one reason above all others why people should have as little to do with alcohol as possible. None can tell when they may acquire the habit of drinking to excess. Truly said an ancient writer: “Ebrii vigint unct ebrios.” One drunkard begets another. “The thoughtless inebriate transmits to his helpless issue,” writes Dr. Norman Kerr, “defective nerve power, enfeebled will, debilitated morale.” Medical practitioners of experience can amply testify to the truth of the sad picture. “As surely as feature, virtue, and vice are transmitted in line, so surely,” writes Dr. Richardson, are the evils caused by alcohol. Of all diseases which may be fostered and transmitted by it none are so sure of being thus passed on to succeeding generations as rheumatism and gout. But worse, perhaps, than all is the inherited love of drink! The dipsomaniac, who would fain shake off his trammels, has a life-long battle to fight. The agis of total abstinence is his best shield. He can not be moderate even if he would.

Summary.—When then we find that the immoderate use of alcohol diminishes our mental powers—that it limits our usefulness in life, and our enjoyment of lawful pleasures; that, so far from giving strength, it takes it away; that it cannot permanently warm and keep out the cold, but renders one more susceptible of cold than before; that nearly if not quite 200,000 deaths every year may directly or indirectly be traced to it (in this category are included many helpless babes found suffocated under their drunken mothers on the Sabbath morn); that 80 per cent. of our crime, 75 per cent. of our poverty, and 3 of our insanity, are due to alcohol, at an annual cost to the nation of £150,000,000; that it has brought dishonour upon the hitherto upright and unstained; that it has caused the wreck of chastity, and led to many a suicide; that, under its influence, disgraceful utterances, bittern repented of, but which can never be effaced from the memory, have marred the happiness of many a home; that promises have been given whose fulfilment—honour forbidding their recall—has resulted in the life-long misery of loving but incompatible natures; do we not abundantly recognise the truth of the saying, that alcohol is the mother of mischief, the tempest of the tongue, the whirlwind of the brain? And shall we not therefore heartily endorse the action of the ex-president of the United States, who, when invited at a festive gathering to fill his glass with wine, turned it, instead, upside down, and eloquently shook his head? All honour to those ladies who, banding themselves together as the “British Women’s Temperance Association,” are doing so much to disseminate a knowledge of the true character of alcoholic drinks.

Encouraging.—Intemperance is happily no longer fashionable among the educated and upper classes; and it is an encouraging evidence of progress in the temperance cause that so many in high places are ready to publicly advocate the advantages, personal and social, of total abstinence. From the senate-house, the pulpit, and the bench; from the printing-office, on the quarterdeck, in barracks and in camp; in lecture-hall, drawing-room, and medical conclave, the same advocacy is enforced. The seed sown by the writings, 150 years ago, of Dr. Cheyne and others, followed in later times by those of the author of “Bacchus,” of Father Mathew, of George Cruikshank (whose pen was eclipsed by his pencil), and of
various earnest lecturers and speakers,—social reformers, amongst whom we are proud to reckon in our day such men as Dr. B. W. Richardson and Dr. Norman Kerr,—this seed is evidently bearing fruit. As a set-off against the 600,000 drunkards of the United Kingdom there are an equal number of children who belong to Bands of Hope, the nuclei, under Providence, of future temperance families; there are nearly thirty total abstainers in the House of Commons, where a majority of the representatives of the people have recently decided that, in view to its reduction, the liquor trade should be regulated by the people themselves; 22* out of 240 of our chief town councillors have come forward, invited by the National Temperance League, personally, or by letter, boldly to proclaim, in the metropolis of England, their adhesion to the total abstinence cause; and to testify that official entertainments conducted on total abstinence principles, where the fruit of the vine appears not in the "wine cup" and the "flowing bowl" but in the cluster, may be given without diminishing their personal popularity, or preventing their re-election; and last,

* Ten teetotal Mayors, the Lord Mayor of York in the chair, delivered addresses on the advantages of total abstinence, at Exeter Hall, on the 7th of April, 1881. Twenty-seven are total abstainers,

though far from least, nearly 300 medical practitioners by whose advice, as to the consumption, or otherwise, of alcoholic drinks, the public are largely influenced, have combined to renounce their use; and in connection with whose action a temperance hospital has been established in London, where, as already observed, not only are these drinks not given, but where alcohol is not even employed in making tinctures—glycerine being substituted for the purpose. All these are surely encouraging symptoms of progress; and may we not confidently hope that the day is approaching when, with the advancement of knowledge on these subjects, the result in great part, it may fairly be assumed, of temperance bringing up in our schools, the Englishman—who at the present time is, alas, but too frequently associated in the minds of foreigners with beef, beer, and brandy, and who, on the native stage in India, is represented with a bottle in his hand, inebriated by its contents—will stand forth before the world never otherwise than in his right mind, and an example of national sobriety, as he is now of national freedom.

At the close of the lecture some morbid preparations, illustrating the action of alcohol on the several organs, were exhibited under the microscope.

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BARMING LUNATIC ASYLUM.
REPORr BY THE MEDICAL SUPERINTENDENT.

At the Kent General Sessions held at Maidstone on Tuesday, April 17th, the following important report by Dr. F. Pritchard Davies, the Superintendent of the County Asylum at Barming Heath, was presented, and ordered to be printed:

"MR. CHAIRMAN AND GENTLEMEN,—I have the honour to submit the report for the year 1880, together with the usual statistical tables.

"There were resident, December 31st, 1879, 1,193 patients, and on December 31st, 1880, 1,253, or an increase of 60 in the total number of patients left in the asylum at the end of the year. This is not to be accounted for by the extra number of
pauper cases admitted, but by the increased number of private patients, the diminished death-rate, and the smaller number of patients discharged. Indeed, if the private patients are deducted it will be found that only two more pauper patients were admitted in 1880 than in 1879.

"The number discharged always greatly depends upon the nature of the disease in those admitted. During the past year the new cases have been of an exceptionally unfavourable character. Amongst them were an unusual preponderance of general paralytics and epileptics, as also more than an average number of cases that were from the first regarded as incurable in consequence of the advanced stage of their disease. This, I think, fully accounts for the diminution in the percentage of recoveries.

"The causes of death have been verified in every instance by post mortem examination. We have been free from epidemic diseases, and there has been no suicide.

"This year, as usual, some patients have been sent in who were not insane. Their numbers exactly coincided with those obtained in 1874, viz., four-two men and two women.

"Inquests have been held in three instances, and the following verdicts were returned:—1, valvular disease of the heart; 2, fatty degeneration of heart; 3, epilepsy and atrophy of brain.

"One male attendant has been prosecuted for striking a patient. He pleaded guilty and was fined.

"The following serious accidents have occurred. 1. A male patient sustained a fracture of the elbow in consequence of being hurled against the wall by a fellow-patient, who at the time was suffering from epileptic mania. 2 and 3. Two patients, one male and one female, were seized with epilepsy while leaning against the fireguard, and fell backwards over it into the fire. They were promptly rescued, but were severely injured. 4. A female patient tripped over a mat in her ward, and fell and fractured her leg. 5. Another female patient was cleaning windows in the yard, when the ladder she was on slipped. She fell and sustained a compound fracture of the ankle. I deemed it necessary ultimately to amputate the foot. All these patients have made good recoveries. To obviate the possibility of a recurrence of patients falling into the fire in fits, the fireguards throughout the asylum are being altered so as to completely enclose the stoves.

"There has been no instance of mechanical restraint during the year, and only twelve cases of seclusion have occurred, the time varying from ten minutes to eleven hours.

"In my last two annual reports, I mentioned certain changes we had made in our beer supply. As this subject has attracted considerable attention throughout the country I deem it right to enter rather fully into the particulars, although in so doing I must necessarily repeat much of what I have already said. It was in March, 1878, that I first advised you to diminish the quantity of beer issued to patients and attendants. These changes worked so well that in November, 1879, I again brought the subject under your notice, and recommended that the issue of beer as an article of ordinary diet should be discontinued. This you sanctioned and it came into operation on December 1st, 1879.

"Regarding our dietary as sufficient, and being convinced that the actual nourishment of the beer was too small to merit consideration, I did not advise any other substitute than water, for the discontinued beer. By most carefully weighing every patient once a month, and keeping accurate records of the results so obtained, I am satisfied of the soundness of my opinion, and do not think any unprejudiced observer could question the good results which have, in this asylum, followed the total abolition of beer as an article of diet. The wards are much quieter than they have ever been before. The patients are cheerful without being noisy, and they certainly work better. Their general health has been good, and there is a marked diminution in our death-rate, to which, however, I do not attribute such im-
Barming Lunatic Asylum.

importance, as it may be explained in other ways. However, for the improved condition of the patients generally, the diminution of violence, destructiveness, and noise, I think the abolition of the issue of beer is mainly to be credited.

"It was thought that by discontinuing beer it would be necessary to very largely increase the issue of wines and spirits. I did not share in this belief, and the result is as I anticipated. The attendants and servants of course regarded beer as part of their wages; and as my only object in withdrawing it from them was to diminish as much as possible the chances of patients being able to obtain it, you deemed it right to give them monetary compensation, and this was done upon the following scale which represents as nearly as possible what to us was the value of the beer they received before the first reduction was made:— Male attendants, £4 per annum; female attendants, £3 per annum; and laundry attendants, £3 per annum.

"I am thoroughly satisfied with the result of this substitution of money for beer to attendants and servants, and have good reasons for believing that they themselves are grateful for the change. Many have become total abstainers, and, for the first time in their lives, contracted habits of thrift.

"Although the abolition of beer as an article of ordinary diet has been the means of saving a large sum of money, I wish again to state that it was not with this object that I advised the step you have sanctioned. From careful observation of the effects of alcoholic stimulants upon the patients under my care, as well as from a knowledge of the cause of large numbers of them being here, I became convinced that it was not advisable to continue to supply exciting beverages to them, which, I felt sure, had a tendency to prolong their malady, and, by keeping up a taste for intoxicants in those inclined to over-indulgence, in them, directly conduce to a speedy relapse after they were discharged.

"The enclosure and cultivation of odd corners of land about the asylum has been gone on with during the year, and much has been done in the way of planting trees and shrubs in the airing grounds and elsewhere.

"The water main lately laid around the new building for use in case of fire has been connected with our steam pumping engines, so that we are now enabled to obtain any requisite pressure at a few moments' notice in case of emergency. A fire brigade has also been organised amongst the artisans, attendants, and patients. A system of heating the single rooms in the old building by means of hot-water pipes has been commenced, and, as far as completed at present, works in a most satisfactory manner.

"The detached hospital for infectious diseases and the wards set apart for suicidal and epileptic cases have been electrically connected with the senior assistant medical officer's quarters. A great deal of work has been done by attendants and patients in painting and decorating the dining-hall, wards, &c., while a handsome pavilion and many fixed seats have been erected in the cricket field.

"I regret that nothing has yet been done to provide the much-needed infirmary, suicidal, and epileptic wards. The arrangements we have made for the treatment of our sick patients and those requiring continuous supervision I only regard as temporary. The wards we have taken for these purposes ought to be occupied as ordinary day rooms, and their appropriation compels us to unduly crowd other parts of the asylum. Some time ago I called your attention to certain alterations I recommended in the old building, and which, if carried out, would not only provide the whole of the accommodation we so urgently require, but at the same time remove parts which are structurally very defective, and merit condemnation upon many grounds. I believe my recommendations have met with your approval, and that it is a mere question of finance which prevents the work being commenced. I most earnestly hope this difficulty will soon be removed, as I feel I cannot do my full duty by the patients until the older portions of the asylum are
Tobacco-and-Alcohol Amblyopia.

radically altered, and made more in accordance with the standard of modern requirements for the treatment of the insane.

"Two Commissioners in Lunacy visited the asylum in October, and their report has been presented to you.

"The vacancies on the medical staff mentioned in my last report have been filled by the appointment of Arthur Law Wade, M.D., as senior assistant, and David Johnstone Jones, M.D., as junior assistant. Both these gentlemen are now in residence, and afford me most valuable assistance.—I remain, &c.,

"F. PRITCHARD DAVIES."

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion per cent. of recoveries to admissions, excluding transfers from other asylums</th>
<th>Proportion per cent. of deaths to average No. daily resident</th>
<th>Proportion per cent. of deaths to total No. under treatment</th>
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<td>60.0</td>
<td>47.0</td>
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<td>46.0</td>
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<th>Year</th>
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<th>In Asylum, Jan. 1.</th>
<th>Admitted during the year</th>
<th>Died.</th>
<th>Discharged</th>
<th>Transf. from private to pauper</th>
<th>Transf. from pauper to private</th>
<th>Remaining Dec. 31.</th>
<th>Total</th>
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<td>308</td>
<td>137</td>
<td>103</td>
<td>—</td>
<td>—</td>
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<tr>
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<td>1</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>1880</td>
<td>Pauper</td>
<td>1,193</td>
<td>310</td>
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<td>—</td>
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<tr>
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<td>23</td>
<td>3</td>
<td>11</td>
<td>—</td>
<td>—</td>
<td>23</td>
<td>23</td>
</tr>
</tbody>
</table>

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TOBACCO-AND-ALCOHOL AMBLYOPIA.

Dr. WEBSTER read a paper upon this subject before the Medical Society of the County of New York (New York Medical Record December 11), in which he furnishes abstracts of twenty cases that have come under his own notice. After giving the details of the ophthalmoscopic appearances, and describing the treatment by hypodermic injection of strychnia at some length, he says:— "If I were to formulate my conclusions drawn from these cases and from other sources of information, they would be about as follows—I. Amblyopia from poisoning by alcohol alone, or by alcohol and tobacco combined (in eighteen of the twenty cases both tobacco and alcohol were used in excess, in one tobacco was used excessively and alcohol moderately, and in one the amblyopia seemed to be wholly due to tobacco), is not uncommon. 2. Amblyopia from poisoning by tobacco alone does occur, but, in this country, somewhat rarely. 3. Cases of amblyopia from abuse of alcohol and tobacco will usually improve (perhaps to a limited extent) on simple abstinence from the poisons causing the disease. 4. They will improve much more rapidly under treatment by hypodermic injections of strychnia, the
drug having a specific stimulating influence upon the nervous portion of the visual apparatus."

At the discussion on the paper, Dr. St. John Roosa, while admitting that amblyopia is produced by the combined action of alcohol and tobacco, was quite sceptical as to tobacco possessing the power of producing it alone. He doubted the accuracy of Mr. Jonathan Hutchinson's statistics on this point, and pointed to the rarity of the occurrence of amaurosis in Turkey, and to the fact that Dr. Ely could not find this amblyopia among the constant workers on tobacco. Even cases of amblyopia from the combined action of alcohol and tobacco were not of frequent occurrence; and the incipient atrophy of the optic nerves, described by Dr. Webster, is not often met with. In some cases, indeed, ophthalmoscopic examinations taught nothing, and yet the patients improved promptly on abstaining from tobacco and alcohol, sometimes with and sometimes without the use of strychnia. Dr. Knapp believed that tobacco-and-alcohol amaurosis was by no means rare, for it constituted a considerable percentage of his private practice, and was met with to a certain extent in hospitals. At the beginning of these cases ophthalmoscopic examination did not reveal any changes adequate to account for the impairment of vision; but when the case had advanced, a proportionate change was found in the optic disc: and still later the arteries and veins might become so reduced, both in size and number, that the disc assumed the highest degree of atrophy. In the cases in which no adequate changes in the disc can be discovered, characteristic functional disturbance was observable; for while in the periphery vision is normal, in the central portions of the visual field there is achromatopsia. In such cases the prognosis is favourable, rapid improvement ensuing under general remedies only. Dr. Pomeroy had seen good results from the use of strychnia, although these were not produced as rapidly as in Dr. Webster's cases; but there were many difficulties in determining whether or not the strychnia had really cured the patient. In his opinion tobacco had but little influence in the production of the amblyopia, while alcohol certainly exerted a marked influence. Abstaining from alcohol alone would cause improvement, while abstaining from tobacco alone had but little effect. A point to be borne in mind was the "visual intelligence," of the patient, upon which the amount of his vision largely depended when tested for the first time. A stupid patient might read ⅞, while an artist with the same actual condition of the eyes would probably read ¾. Again, the cultivation of the "visual intelligence" was another factor; for a constant improvement took place by simply testing the patient—that is, he could see better with the same eye at the close than at the beginning of the exercise. Another factor also was the improvement that might result from the lapse of time. Dr. C. R. Agnew, after pointing out how little statistics from oculair examinations in Turkey could be relied upon as compared with those of New York, ("where probably there was a greater aggregation of careful observers than could be found in any single city of the world," went on to say that he agreed with those who thought that amaurosis from tobacco alone, without the possible occurrence of syphilis and the possible abuse of alcohol, was comparatively rare. He had himself met with a few cases in which tobacco was the sole cause of the amblyopia. He believed the relationship between the two poisons, tobacco and alcohol, was such that they were in some persons indissolubly united, and that we should seldom succeed in breaking them from the one habit unless they were broken from the other. We should insist upon the patients totally and at once abstaining from both; and after waiting for a week or ten days, use the strychnia if necessary. In cases in which he had waited for this time, and found little or no improvement taking place, he had found that the vision became immediately doubled in strength by an injection of
strycnia. With respect to statistics on this subject for the purpose of determining the comparative frequency of the occurrence of the disease, Dr. Agnew observed that large classes of diseases must be excluded. Thus, diseases in children, and blindness from cataract, detachment of the retina, conjunctival affections, &c., would have to be eliminated. If the cases were selected in which the dioptric apparatus was not affected, but those in which the lesions were in the perceptive apparatus, he thought it would be found that the number of cases was relatively large, although it might be absolutely small. The evidence of observers who had not subjected the vision to the test of its acuity, and had not given positive statements with reference to the amount of vision the patient had, and the effect of remedies in changing that amount, should be excluded. Dr. Webster stated that the rapid improvement of vision under the influence of strycnia had occurred in the cases of amblyopia from alcohol and tobacco; but he had also seen vision considerably improved by its use in atrophy of the optic nerve from other causes. Yet, after a time, vision had failed in these latter cases, despite of the strycnia, while in the ambyopic cases the rapid improvement was permanent.—Medical Times and Gazette, March 26, 1881.

NOTE ON ABSENCE OF BEER IN AN ASYLUM DIETARY.

By J. A. Campbell, M.D., F.R.S.E., Medical Superintendent, Garlands Asylum, Carlisle.

The subject of the use of beer in the dietaries of public institutions for patents, attendants, nurses, and servants, has for the last few years much exercised the minds of both the lay rulers of such institutions and of the medical heads, and a diversity of opinion still exists. The use of stimulants in sickness is also much discussed, and affords considerable scope for variety of opinion and practice.

The asylum which I at present superintend was at one time, I believe, the only English asylum in which beer did not form an article of ordinary diet for patients, attendants, or resident medical officers, and as the asylum has now been in existence since January 1862, its general results may be fairly taken for purposes of comparison. The Committee of Visitors, when the asylum was opened, were of opinion that in many respects it was highly advisable that the diet scale, and also the hours for meals, should accord to a certain extent with what was in force in the district from which the patients were drawn, and hitherto they, or their successors in office, have seen no reason to alter the opinion which was wisely come to at a period when, in the belief of many, it was wrong. Beer does not form a usual part of the diet of the working class in these two counties, and their hours for meals would by many be thought barbarously early.

I have for several years had so many inquiries into the matter of diet, and the absence of beer in it, and as to the effects of this want of beer in reducing the health, in evilly influencing recovery, &c.—some of these inquiries have been so full and particular as to percentages of recoveries and deaths, the cost of stimulants as medicinal treatment, and the cost of medicines—that I have drawn up the following tables, which show the main points that can be of any value to other institutions; while I avoid all comparison which might be invidious, and which, if required, may easily be made by those who wish to enter on the subject.

As during the first year of the existence of this asylum the reception of
chronic patients much influenced the results, and also as there was no report printed, I simply give the results contained in the ten yearly reports drawn up and issued by my predecessor, Dr. Clouston, and those from my own reports for the last eight years.

I give in a tabular form the percentage of recoveries on admission, the percentage of deaths on the average numbers resident, the cost of stimulants (used medicinally) per head, and also the cost for medicine during these two periods.

<table>
<thead>
<tr>
<th>Years</th>
<th>Percentage of Recoveries on Admissions</th>
<th>Percentage of Deaths on Average Numbers Resident</th>
<th>Wines, Spirits, and Porter</th>
<th>Surgery and Dispensary</th>
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<tbody>
<tr>
<td>From</td>
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<tr>
<td>Jan. 1st to</td>
<td>Males</td>
<td>Females</td>
<td>Total</td>
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<tr>
<td>Dec. 31st.</td>
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<tr>
<td>1863</td>
<td>30.6</td>
<td>18.4</td>
<td>25.0</td>
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<tr>
<td>1864</td>
<td>30.7</td>
<td>18.0</td>
<td>24.9</td>
<td>4.4</td>
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<tr>
<td>1865</td>
<td>30.6</td>
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<td>24.9</td>
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<td>33.0</td>
<td>25.0</td>
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<td>39.2</td>
<td>30.9</td>
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<td>1868</td>
<td>28.7</td>
<td>38.3</td>
<td>36.7</td>
<td>7.5</td>
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<tr>
<td>1869</td>
<td>41.2</td>
<td>37.5</td>
<td>39.1</td>
<td>8.9</td>
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<tr>
<td>1870</td>
<td>47.9</td>
<td>44.0</td>
<td>46.2</td>
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<td>1871</td>
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<td>50.0</td>
<td>48.5</td>
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<td>1872</td>
<td>21.1</td>
<td>48.9</td>
<td>40.5</td>
<td>8.0</td>
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</table>

The percentage of recoveries for this period averaged 39; the percentage of deaths on the average numbers resident was 7.6. During this period one pint of milk was given to the men and three-quarters of a pint to the women for six days of the week at dinner. I had the amount of milk reduced to half-a-pint for each sex, and only gave it three days in the week at dinner, as I thought it did not suit the dinners with fat meat or warm gravy, but the dietary has remained unchanged as regards the amount of butchers' meat.

<table>
<thead>
<tr>
<th>Years</th>
<th>Percentage of Recoveries on Admissions</th>
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<tr>
<td>Jan. 1st to</td>
<td>Males</td>
<td>Females</td>
<td>Total</td>
<td>Males</td>
</tr>
<tr>
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<tr>
<td>1874</td>
<td>40.3</td>
<td>54.1</td>
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</tr>
<tr>
<td>1875</td>
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The yearly recovery rate during the eight years averages 47 per cent.; the average percentage of deaths on the numbers resident is 7.9. As the general health has been good, and as in the vast majority of cases the patients admitted have been found to gain in weight after admission (careful weight records being kept), I think the 3 per cent. rise in mortality may easily have been caused by the action of the Government grant of 4s. per week, for
Stimulants in Workhouses and in Outdoor Relief.

lately we certainly have had more old cases sent in than used to be sent some years ago.
I believe I am correct in saying that in most if not all of the Scottish public asylums no other beverage than cold water is given at dinner. I am at present considering the question of doing away with the small quantity of milk which is given here on three days in the week. The attendants and officials have seemed to keep in good and robust health with water as their beverage.—Lancet, May 14.

STIMULANTS IN WORKHOUSES AND IN OUTDOOR RELIEF.

There is scarcely any of the taxes which our present social government renders necessary so much complained of as the ever-increasing burthen of the poor-rates; and this complaint arises not only from their actual pressure, but from the rather general idea that they are not all disbursed towards the real necessities of the poor, but frequently for unnecessary or even injurious purposes. In few respects is this point now more strongly urged than in regard to the use of stimulants, not only for the treatment of the sick in the union hospitals, but for paupers not in hospital, or even for the recipients of outdoor relief. It is not our intention to discuss here the use of stimulants in the treatment of disease, which is, in our opinion, a question best left to the medical officers of the several hospitals; we will merely observe that, in our experience, there are certain types of disease, for the treatment of which alcohol, in carefully-regulated quantities, is essential, and which in fact cannot be effectually combated without that remedial agent. In these cases, however, we very much doubt whether the ordinary conventional doses of whisky, brandy, port wine, &c., are the most accurate way of exhibiting it, for these fluids present quantities of alcohol of ever-varying strengths, flavoured by the essential oils, and besides are apt, by constant use, to create in patients an appetite for stimulants which may lead to their ultimate moral and physical ruin. We have for a long time past acted frequently on the advice of Dr. B. W. Richardson, and prescribed definite doses of the proof spirit of the Pharmacopoeia (sp. gr. 920) suitably flavoured, and found it, if not quite so agreeable to the palate, accurate in its effects, and taken distinctly as a medicine, just like the bark, ammonia, or quinine, which were used in the same case. We find occasionally instances of gastric irritation where the sedative action of old brandy, or of champagne, is desirable, and where the spirit of wine does not answer; but we repeat that this whole question, where the actual treatment of the sick is concerned, is a matter not for the decision of Local Government Boards, or even of poor-law guardians, but for the conscience of the medical profession, and as such we bring it under the notice of our readers, merely remarking that indirect harm has often been done by the presenting of ordinary stimulants, and that it is the duty of the physician to minimise this risk.

We would, however, principally call attention to the use, or rather the abuse, of stimulants in the case of workhouse inmates not in hospital; and still more of persons in their own homes, in the receipt of outdoor relief, and against this system we emphatically raise our voice. Taking the detailed statistics of the unions of the three kingdoms, we find that there is no sort of uniformity either in the amount of stimulants employed, or in their effects upon the death-rates of the inmates. These statistics have been carefully collated and compared by Dr. Norman Kerr, in a very interesting and luminous report, which shows
that in some workhouses the quantities of alcohol employed per head are simply scandalous, and considerably in excess of those used by many of the ratepayers supporting them, while in other similar establishments the amount is infinitesimal, being evidently exhibited only in cases of illness or emergency. Further, this report discloses the startling fact that whatever may be the factors of the higher or lower death-rates of these establishments, the use or non-use of alcohol is not one of them, for some of these poor-law shrines of Bacchus display most favourably, and others equally disastrous death-rates; while the non-alcoholic institutions appear to be similarly situated.

As the health of the ordinary pauper is evidently not affected by the use or non-use of alcohol, the question becomes simply one of discipline and of propriety; and, in these important points of view, we consider alcohol highly objectionable. The public have little idea how it is abused in some workhouses where a great deal of nursing, sweeping, and other domestic labour is done by able-bodied male or female paupers. In some of these places it is usual to reward such labours by allowances of whisky or porter, which are sometimes consumed by the recipient and sometimes sold; and, as a result, discipline is gravely interfered with, and police or even magisterial interference becomes necessary. The hardest political economist will not deny that the workhouse inmate should receive a diet which will keep his body healthy and well nourished; but why give him alcohol? Likewise the aged and infirm may reasonably look for eggs, beef-tea, and a few such comforts; but for them also, unless in actual acute illness, alcohol is unnecessary.

The distribution of strong drink among the recipients of out-door relief is simply monstrous, and is open to the greatest abuses. Not long ago in this city, an active guardian visited a pauper shortly after the relieving officer had distributed the weekly allowance of food and stimulants. He found the pauper standing on the stairs, comparatively drunk, and with the nearly-consumed whisky-bottle in hand. For strategic reasons the guardian retired, and the pauper was, for the rest of the week, as far as the union was concerned, in a state of compulsory sobriety.

We have spoken at some length upon a growing evil, which appears to us to be a very serious one. Love of drink is, in our humbler classes, our great national besetting sin, and we earnestly appeal to the medical profession in charge of hospitals and workhouses to combat a system objectionable on account of its waste and extravagance, but still more by reason of the social and moral degradation to which it is slowly, but surely leading. —*Medical Press and Circular.*

[We hope to give Dr. Norman Kerr's valuable report in full in the next issue of the *Medical Temperance Journal.*]

THE DALRYMPLE HOME FOR THE TREATMENT OF INEBRIATES.

The Lord Mayor presided, on Tuesday, 17th May, over a meeting at the Mansion House, held for the purpose of inaugurating, "on a popular basis and self-supporting principle, a Model Home, licensed under the Act of 1870," and to appoint a committee of management. The attendance was numerous and influential.

The Lord Mayor, in opening the proceedings, expressed the pleasure it gave him to place the Mansion House at the service of the promoters of the meeting. He regarded this movement as a most valuable one. He looked upon it as one of pure benevolence. He believed that the proposed homes, if successfully carried out, would be
the means of reclaiming a great many persons who would remain unattended to as long as such establishments were in existence.

Mr. S. S. Alford, F.R.C.S., honorary secretary, read the names of many noblemen and gentlemen who sympathised with the object of the meeting, but were unable to be present.

Dr. Alfred Carpenter, J.P., chairman of the committee, read the following report:—"The cause of the habitual drunkard, so energetically advocated by the late Dr. Donald Dalrymple, M.P. for Bath, has for some years past been taken up by the British Medical and Social Science Associations. By their joint action, 'The Society for promoting Legislation for the Control and Cure of Habitual Drunkards' was formed in 1876. This society prepared a bill, based upon Dr. Dalrymple's bill of 1872, which was introduced into the House of Commons by Dr. Cameron, M.P. for Glasgow, and into the House of Lords by the Earl of Shaftesbury; a modification of which, leaving it only a permissive measure, became the Habitual Drunkards Act of 1879. During the autumn of 1879, the hon. secretary of the society visited America to ascertain how the inebriate homes were managed in that country. He communicated the result of his observations in a paper read before the Social Science Association on 2nd February, 1880, when a resolution was agreed to supporting the principle to be advocated at this meeting. A sub-committee was appointed at a conference of the above societies to promote the establishment of a model inebriate home, to be called the Dalrymple Home for Inebriates. An institution for the working and lower middle classes, when once started, by sufficient but small payments, it is felt sure might be made self-supporting; especially as the managing committee would be strictly honorary, and have no pecuniary interest in the detention of patients. To do this, however, a fund must be raised to meet the preliminary expenses of adapting and furnishing a house, and to guarantee the expenses for the first two years. This fund now amounts to about £1,800, which includes £540 promised by a gentleman interested in the question, to defray the rent for a couple of years of a suitable building which has been offered for the Home. We now look to the public for further contributions, which will justify the Committee in at once opening this Model Inebriate Home. Inebriety is a diseased condition, from which those afflicted cannot, unaided, extricate themselves, although generally ready to submit to any necessary restraint to enable them to do so. The Act of 1879 gives power to utilise this desire on the part of the inebriate, and we are now indebted to the Lord Mayor for this opportunity of organising an institution for carrying out this important work, which may be a model for others to imitate, and thus prevent the Habitual Drunkards Act of 1876 becoming a dead letter, and at the same time prove the necessity for further legislation in the same direction."

Lord Shaftesbury moved,—"That it is desirable to establish a model home for the treatment of inebriates under the Habitual Drunkards Act of 1879, to be called the Dalrymple Home for Inebriates, and that for this purpose a committee of management, having no pecuniary interest in the institution, be now appointed." The noble earl attached much value to the movement in furtherance of which the meeting had been called. He considered that the experiment of a model home ought to be made. He had no doubt that if properly managed the proposed model home would prove successful, and would result in a great benefit to the immediate and to coming generations.

Dr. Cameron, M.P., seconded the motion, which was supported by Canon Duckworth, and agreed to unanimously.

Dr. Farquharson, M.P., moved—"That the following gentlemen be, and they are hereby appointed, the committee of management, with power to add to their number:"—S. S. Alford, F.R.C.S.; C. M. Burton, Esq.; C. Cameron, M.D., M.P.; A. Carpenter,
Mr. Bompas, Q.C., moved—"That to enable the institution to receive in-mates at a low charge the preliminary expenses, of adapting and furnishing a house be defrayed by voluntary contributions, and that a guarantee fund be opened to cover the first two years' expenses, if required."

The Rev. J. W. Horsley seconded the resolution, which was passed unanimously.

A vote of thanks to the Lord Mayor, moved by Dr. Cameron, M.P., and seconded by Dr. Carpenter, concluded the proceedings.

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**DR. EDIS ON ALCOHOL FOR NURSING MOTHERS.**

In a letter to Mrs. G. S. Reaney, on the use of alcoholic liquors by nursing mothers, Dr. A. W. Edis, of Wimpole Street, says:—

"I have often thought that if mothers were only fully aware of the enormous amount of misery and suffering produced by the imprudent use of alcohol, whether taken in the form of beer, wine, or spirits, during the time they are nursing their offspring, they would have considerable scruples as to the indulgence of such a habit. Many a child born of healthy parents, with every prospect of attaining adolescence, has had its little life cut short, its constitution deteriorated, or the seeds of much future suffering and premature decay sown in its system by the pernicious custom of its mother resorting to the use of stimulants with a view to increase, or to keep up, the supply of that upon which alone the child is nourished.

"Women who were little given to alcohol at other times become for the nonce determined tipplers; this being, perhaps, of all other times, that when alcohol is calculated to do most harm and least good. Apart from all consideration of the risk of encouraging the habit of chronic tipping in the mother, the influence upon the child is most injurious.

"Many a case of convulsions, marasmus, so-called consumption of the bowels, diarrhoea, flatulence, colic, vomiting, and countless other disorders among infants, is due simply and solely to the popular fallacy that the nursing mother cannot properly fulfil her duties unless she resorts to the aid of stimulants.

"I have had frequent and numerous opportunities of testing practically the truth of these statements. When mothers have relied on drinking milk in place of beer, and have studiously avoided the use of alcohol in any form, their children have been strong and healthy, suffering little or seldom from any stomach derangement, and running the gauntlet of the usual disorders of childhood without causing undue anxiety to their parents, or being more than temporarily inconvenienced by the course of the malady.

"Not so in the case of mothers who depend largely upon stimulants: the children are frequently puny, excitable, and always ailing. They succumb readily to attacks of bronchitis, diarrhoea, and other similar ailments, and even when they survive the period of childhood, are often subject to various forms of dyspepsia that unfit them for the actual warfare of existence and render their lives miserable.
In cases where the mother’s milk is inadequate to supply the wants of the child, it is a far wiser plan to give cow’s milk (diluted with one-third water and slightly sweetened) by means of the bottle to make up the deficiency, than for the mother to attempt to force the secretion of milk by resorting to stimulants.

It is a popular fallacy that it is not a wise plan to mix the milks. This has no foundation in fact. Children thrive and do well where the bottle is alternated with the breast, provided no thick or starchy food be given. In those cases where the mother’s milk is deficient in quantity or defective in quality, much may be done to improve its condition by the mother taking a more liberal diet, of which cow’s milk forms an important element. This will be far more likely to prove successful than by resorting to stimulants—such as stout, port, wine, or even spirits, which more often tend to produce a feverish state of the system, and thus defeat the very object we have in view by diminishing the secretion of milk.

---

Food or Drug?—We are glad to see that the Standard has admitted to its columns letters which call attention to the nature of some of the dietetic drinks which are just now much in vogue in teetotal circles. It is so manifestly unadvisable to make an habitual use of articles which should be used only when wanted, and under medical advice, that it is only necessary to allude to the fact that many persons nowadays are drinking as table drinks what in reality are medicines.

Cost of Hospital Patients.—The Daily News of 13th June published a letter from Mr. Charles Hawkins, F.R.C.S., giving details of the cost of hospital patients during the last fifty years at St. George’s Hospital. In that institution in the year 1830, 1,572 in-patients were treated at a cost of £10,874, or £6 18s. 4d. each patient. In the year 1880, 3,543 patients cost £24,819, or £6 17s. 3d. per patient. In these calculations the out-patients are not taken into account. Although each patient costs now 1s. 1d. less than in 1830, there have been great alterations in the different items of expenditure. In 1830 each patient cost for bread and flour 10s. 7½d.; in 1880, 4s. 1d. In 1830 each patient cost in drugs 16s. 5½d.; in 1880 7s. 1½d. In 1830 each patient cost in wine and spirits 1s. 1d.; in 1880, 5s. 1½d., although the price of wine in 1830 was double that in 1880. Porter and ale cost in 1830, 5s. 5½d., in 1880, 3s. 1d. Milk in 1830 cost 6s. 2d. each patient; in 1880, 5s. 1½d., and a much larger amount of milk is given now than formerly.

London Temperance Hospital.—The annual public meeting of the hospital was held on Monday, May 23, under the presidency of Mr. E. Stafford Howard, M.P., who addressed the meeting, and was followed by Mr. Daniel Grant, M.P.; Rev. Arthur Hall; Mr. Arthur Pease, M.P.; Dr. James Edmunds; Dr. R. J. Lee; Dr. J. J. Ridge; Mr. B. Whitworth, M.P.; Mr. J. H. Raper; Mr. Robert Sawyer, J. P.; Mr. Samuel Bowly, Mr. Thomas Cash, and Rev. Dawson Burns. The annual report stated that the in-patients for the official year numbered 143, and the out-patients, 1,125, of whom 231 had attended the new building in Hampstead Road, which was opened in March. Taking the whole in-patient cases treated in Gower Street from October 6th, 1873, to February 14th, 1884, when the hospital was temporarily closed to admit of removal, the total cases were
952: cured, 533; relieved, 378; died, 41. The Building Fund had reached £25,665; and there was still a debt of about £500.

**ABSTINENCE AND LONGEVITY.**—The United Kingdom Temperance and General Provident Institution continues to illustrate the advantages of abstinence as an aid to health and longevity. The annual report for 1880 shows that in the General Section, during the five years 1876-80 the number of expected claims was 1,485, for sums amounting to £311,326, while the actual claims were 1,480, for £322,644. In the Temperance Section during the same period of five years, the expected claims were 935, for £193,745, and the actual claims 657, for £126,142, showing a saving of 282 lives in five years, and £67,605 in money. Of the amounts paid as premiums on whole-life policies during the last thirty years, the proportions returned as bonuses were as follows:

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<td>1871-75</td>
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The moral of these significant figures is obvious. All who wish to enjoy good health and long life should abstain from intoxicating liquors.

**A "COMBE" LECTURER ON ALCOHOL.**—In a lecture on the 7th June, delivered before a large audience in the Upper Hall of the Training College, Edinburgh, Dr. Wilson dealt with the constituent elements of food, in reference to their comparative value as means of nutrition. As to alcohol, the lecturer remarked that much of its action on the body was yet a sealed book. This much had been ascertained, that alcohol was positively injurious to the young and growing body. The healthy adult had no necessity for it; but medical men had to consider alcohol from this point of view, that human life was not regulated by a biological rule of three. There were differences of constitution, and alcohol might in some cases be useful as a digestive aid. He did not say that in all cases that held good, but he was very far from taking up the position that there was no good in alcohol and no use in wine. He quite sympathised with the temperance agitation as regarded too many of the drinking customs of this country, which had neither physiology nor common sense on their side.

**A NEW EXHILARATING SUBSTANCE.**—Dr. Luton, of Rheims, calls attention in a French medical paper to the exhilarating properties of the tincture of ergot of rye when associated with phosphate of soda. The circumstances of this discovery were as follows:—A woman of sixty-two, at the infirmary of the maison de retraite, in Rheims, was receiving tincture of ergot of rye for disease in the knee. Fearing an unfavourable turn, the doctor thought to strengthen the action of that medicament with phosphate of soda, and accordingly combined a little of the two substances in a quarter of a glass of sweetened water. The patient, about three-quarters of an hour after taking this, surprised the inmates by bursting into loud laughter, without obvious reasons, and this continued for more than an hour with brief intervals. The laughter seemed to be associated with merry ideas, and to indicate a kind of intoxication. For some time after it died down the woman was in great spirits and good humour. Dr. Luton had not witnessed the scene, but, the consequences to the patient being good, he administered the substance again, and a third time, observing the same effect. The experiments were further repeated on seven or eight women and girls with like results. In the case of men, the action of the substance is less marked; it appears only in colouring of the face, giddiness, and slight headache. The effects in question have probably a common origin, it is thought, with those from eating rye-bread when, in rainy years, the cereal contains as much as 5 per cent. of ergot. A sort of intoxication is produced, which the consumers by no means despise.—*Times.*
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MEDICAL TEMPERANCE JOURNAL.

October, 1881.

Original Contributions.

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DR. ANDREW CLARK ON ALCOHOL.

The prescience of total abstainers long ago revealed to them the truth concerning the irritant narcotic, which has for ages been the unrelenting foe of our national prosperity, and the remorseless destroyer of the life and happiness of an immense number of our fellow-countrymen. What the sagacity and foresight of the early teetotalers taught them to believe, the men of science and learning are now fast authoritatively confirming.

The late Professor Miller, the well-known surgeon to the Queen in Scotland, by his telling works, "The Place and Power of Alcohol," and "Nephalism," did much to throw the mantle of science and of authority over the total abstinence movement. Dr. W. B. Carpenter, in his celebrated prize essay, very lucidly demonstrated the mischievous effect of constant so-called moderate drinking on the body and the brain of man. Dr. B. W. Richardson, by his brilliant Cantor lectures on alcohol, still more widely enlightened the public mind. Sir Henry Thompson's letter to the Archbishop of Canterbury disseminated true views of the danger and material injury inflicted by "drinking far short of drunkenness." Sir W. Gull's candid and trenchant denunciation of alcohol as a poison, before the Lords' Committee, opened the eyes to the truth of our propositions of a greatly extended number of the educated and influential classes. And now Dr. Andrew Clark, confessedly the most active, the most experienced, and the most skilful physician of the day, far excels all these testimonies in the strength of his language and the fervour of his enthusiasm.

In a recent lecture, which has excited very deep interest and
arrested the public attention, Dr. Clark at the outset evidences his thorough appreciation of the vital importance of temperance to the patriotism and character of the nation. He says:—

"I, for my part, know of no question which strikes home so forcibly upon the character of the nation as this one question of the most appropriate mode of using alcoholic drinks. If we wish to see this nation prosperous, if we wish to see this nation take its right and just place among the other nations of the earth, and if we wish to be sure that the influence which this nation shall exert upon the progress of civilisation, upon the welfare and the physical happiness as well of mankind, we shall be well assured of the justness of the answer which is to be given to this question."

Dr. Clark also evinces a clear perception of the bearing of our movement on the character and well-being of every individual member of the community. He adds:—

"There is the individual life and then the collective life of the individuals, which makes what we call 'the life of the nation;' but, if I may be forgiven for saying so, far before the life of a nation is the life of every individual soul who forms a part of it, and if the question of the proper use of alcoholic drinks is important for our welfare as a nation, surely in a much stronger sense it is important for us, as individual souls, fraught with all the business of eternity upon our backs, to determine what is the right use of alcohol."

It is desirable that scientific witnesses should, irrespective of their personal habits, speak the truth concerning intoxicating drinks, and nothing but the truth, though so ramifying are the evils of intemperance, no one can ever tell the whole truth. That Dr. Andrew Clark is an honest witness, determined to testify truly, is manifest from these words, "He who presumes to speak authoritatively upon this subject, however dear a certain side of the question may be to him, he shall speak about it not with the mere desire to succeed, not with the desire of triumph, but with a loving, reverent, solemn desire to state the truth about it, and nothing but the truth."

No member of the medical profession can speak with higher authority than Dr. Clark. We know of none who occupies a higher place in the esteem of his colleagues, or who has had as extended opportunities of arriving at the facts. As he himself naively confesses:—

"I venture to say in your presence that I know something about this question. For twenty-five years at least I have been physician to one of the largest hospitals in this country. It has been a part of the daily business of my life to ascertain the influence which alcoholic drinks exert upon health, and I have taken a personal interest in this part of my duty, and not only through this professional channel I have mentioned to you, but often through personal experiment. I have endeavoured most earnestly to get at the truth on this subject, and certainly I think I am justified in saying to you that after these twenty-five years I know something about it. I have to inquire into the habits and relation of habits to health of about 10,000 people a year, and that doesn't go for nothing after all these years."
Science cannot demonstrate that an extremely minute quantity of any poison is injurious. The conditions of such proof are impossible; as this could only be forthcoming if a living man were vivisected immediately after partaking of the minute portion of the particular substance. But Dr. Clark designates alcohol a poison in the same manner as he thus characterises other poisons:

"Alcohol is a poison. So is strychnine; so is arsenic; so is opium. It ranks with these agents; but of these agents—arsenic, strychnine, opium, and many others—there is this to be said, that in certain small doses they are useful in certain cases, and in certain very minute doses they can be habitually used without any obvious—mark what I say—prejudicial effect; without any obvious, any sensibly prejudicial, effect upon health."

After all these reservations, what judgment does our learned Æsculapius pass on alcohol? Moderate drinker as he owns he is, does he defend the use of intoxicating drinks in health, or does he at least venture the opinion that they are indifferent? No; with no

"Bated breath and whispering humbleness,"
he unequivocally declares them to be inimical to healthfulness:—

"I cannot define health, because it is indefinable. Health is that state of body in which all the functions of it go on without notice or observation, and in which existence is felt to be a pleasure, in which it is a kind of joy to see, to hear, to touch, to live. That is health. Now, that is a state which cannot be benefited by alcohol in any degree. Nay, it is a state which in nine times out of ten is injured by alcohol. It is a state which often bears alcohol without sensible injury, but I repeat to you, as the result of long-continued and careful thought, it is not one which can in any sense be benefited by alcohol. It can bear it sometimes without obvious injury, but be benefited by it—never."

Nay more, Dr. Clark goes on to denounce alcohol as a disturber of that equilibrium of mind and that exquisite capacity of happiness which are the birthright of the truly healthy human being:—

"I venture to say to you that there is a certain state of joy of existence—for I cannot call it anything else—a sense in which one feels what a pleasure it is to look out, for instance, upon the green fields, to hear pleasant sounds, to touch pleasant hands, to know that life is a satisfaction—this, I say, is a state, which, in my experience, is always in some way or other injured by alcohol. This is a state in which a sort of little discord is produced by alcohol. This is a state in which, sooner or later, the music goes out of tune under the continuous influence of alcohol."

As if this were not strong and clear enough language, Dr. Clark adds:—

"As regards the influence upon health, I sum it up in this. First, that perfectly good health will, in my opinion, always be injured even by small doses of alcohol—injured in the sense of its perfection and loveliness. I call perfect health the loveliest thing in this world. Now, alcohol, even in small doses, will take the bloom off, will injure the perfection of loveliness of health, both mental and moral."
We are all familiar with the timid ones who have in a half-hearted manner tried total abstinence, and are wont mournfully to tell in piteous accents the story of their failure. Such would do well to lay Dr. Clark's forcible and truthful commentary to heart:—

"I must draw your attention to a fallacy which is very apt to arise in performing an experiment of this kind. I should say to a man—'If you want to determine this question about the influence of alcohol upon your work, do perform your experiment fairly. You will please go for a month with alcohol and see how you get on, and then cut it off altogether, and see how you get on then.' People are of different constitutions, and there are some of such nervous types of constitution that mere habit is such a force with them that they think if they do not have their daily allowance of alcohol they must be ill. The first difficulty in the way of experimenting with such people is that when they try the experiment of doing their work without alcohol they say they think they must be ill; and when the accustomed time of taking the alcohol comes round, they think it is evidence that the plan is not going to answer well because they miss their accustomed beverage, and they begin to be on the side of expecting failure. They are sure to tell some of their friends, who, of course, condemn the 'mad experiment,' and say—'Beer is necessary; and you are not looking so well already, and if you go on you'll see where you'll land.' The poor man is in the position of an army going up to battle with the consciousness that it is going to be defeated, and you know the chances of success in such a case. I have no hesitation in saying that if a man has the courage to cast aside the imaginative difficulties which surround an experiment of this kind, and say—'None of your nonsense; I mean to try this experiment fairly; I'm not a coward; I will try it honestly'—he will succeed. People always look a little paler or thinner under such an experiment, but bulk is not the measure of power, nor colour the measure of health."

As the learned doctor proceeds, his utterance becomes more and more vigorous and decided. He goes on to say:—

"If there is any honest man who really wants to get at the truth, and will not be set from his purpose by people condoling with him about his appearance and the result of his experiment, and will try the effect of alcohol upon work, I would tell him fearlessly, and I would risk all that I possess upon the back of the statement, that as certainly as he does try the experiment for a month or six weeks, so certainly will he come to the conclusion that however pleasant alcohol is for the moment, it is not a helper of work. It is not only not a helper of work, but it is a certain hinderer of work; and every man who comes to the front of a profession in London is marked by this one characteristic—that the more busy he gets the less in the shape of alcohol he takes, and his excuse is—'I am very sorry, but I cannot take it and do my work.'"

Temperance speakers have been constantly accused of exaggeration in the predominating influence they assign to intoxicants as a factor in the causation of disease. What does Dr. Clark, after a review of the history of his cases at the London Hospital, say?

"I am speaking solemnly and carefully in the presence of truth, and I tell you I am considerably within the mark when I say to you, that going the round of my hospital wards to-day, seven out of every ten there owed their ill-health to alcohol. Now what does this mean? That out of every hundred patients
which I have charge of at the London Hospital, seventy per cent. of them
directly owe their ill-health to alcohol."

How often do objectors say, "Oh! but all this disease is from
the abuse of strong drink." What does our unprejudiced non-
abstaining medical luminary say on this point?

"To the abuse? I do not say these seventy per cent. were drunkards, but to the
excessive use. I do not know that one of them was what you call a drunkard.
Nay, I must here put in a curious word which will shock your rector in the chair
very much, that on the whole it is not the drunkards who suffer so much from
alcohol. There are a number of men that we know to be drunkards. They
get drunk, and they get sober; and they are so much ashamed of themselves
that they won't touch the accursed thing for months to come, until somebody
tempts them. These are not the men who suffer most from alcohol. These
are the men who, conscious of their infirmity, and horribly ashamed of them-
selves when they recover, will remain virtuous for months and months. No,
the men to whom I allude are the men who are habitually taking a little too
much. The curse of this is that they feel so jolly and comfortable, and full of
jokes and fun, that other short-sighted people almost envy them their condition.
These are the men who go into company, who are full of life, who are always
begging you to have another glass, and all that sort of thing. They are very
good fellows, do their work well; but they are always drinking just a little more
than the physiological quantity I mentioned at the beginning. Now, these
are the men who, taking a little more than they require or can use, looking
well—yea, often feeling well—are yet being sapped and undermined by this
excess. Day by day, just as the grass grows, and you can't see it—day by day
this little excess, often a little one, is doing its work. It upsets the stomach,
the stomach upsets the other organs, and bit by bit, under this fair, and genial,
and jovial outside, the constitution is being sapped, and suddenly, some fine
day, this hale, hearty man—whose steps seem to make the earth rebound
again, and the rafters re-echo with his tread—tumbles down in a fit! That is
the way in which alcohol saps the constitution."

Not content with this scathing denunciation of drinking, which
the rector of All Souls justly pronounced "the soundest threshing
moderate drinkers ever received in their lives," Dr. Clark, in
weighty and solemn strains, expounds the effect of the dire law
of Heredity in Alcohol on the children and descendants of the
drinker.

"There is another side as well of this question, and it is no abuse of
language to say it is an awful side. It would be bad if we men who abuse
alcohol were to suffer in ourselves, and to suffer in those around us, whom we
love or ought to love, surely that is terrible enough to prevent men from using
alcohol freely; but there is even a more terrible statement than that behind.
It is not they alone who suffer, but so soon as a man begins to take one drop
more than what I have called the physiological quantity the desire is not only
begotten in him, but the desire of it becomes a part of his very nature, and
that nature so formed by his acts is calculated to inflict curses inexpressible
upon the earth when handed down to the generations that are to follow after
him as part and parcel of their being. And I ask—what are you to think of
those who are born of drunkards, who come into this world, so to speak, with
a curse not only upon them, but in them, the terrible desire for that which is
to blast them speedily a desire which no human power can save them from,
and which God alone in His wisdom and mercy can protect them from? What
Three Experiments in the Treatment of Dipsomania.

an awful thought is this! Can there be any man here present who, if he is taking more than he ought to take, is indifferent to all this? How can he think without dread of this terrible fact—for fact it is as surely as that two and two make four—that this desire is becoming part of his nature, and that he is handing it down, not for good, but for the most terrible evil that man can suffer unto generations yet unborn?"

After such language—stronger than any we ever remember hearing from a teetotal platform—we cannot affect surprise at Dr. Clark’s exhortation to bring up the rising generation as total abstainers, or at his declaration that, as he thinks of all the evils wrought by drinking, he feels disposed to rush to the opposite extreme, “to give up my profession, to give up everything, and to go forth upon a holy crusade, preaching to all men—Beware of this enemy of the race.”

This magnificent philippic against alcoholic drinks, which has in a few weeks made its mark in the temperance history of our country, is so overwhelming, so unanswerable, that we cannot but look ere long for the distinguished author’s appearance in the front rank of the great and constantly increasing temperance army. His testimony is, for the present, all the more valuable that he is not a personal abstainer; but we are grievously mistaken if the fine sense of consistency and honour for which Dr. Clark is noted does not at no remote period lead to his adoption of total abstinence as a rule of life.

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THREE SUCCESSFUL EXPERIMENTS IN THE TREATMENT OF DIPSOMANIA.*


The curability of dipsomania has been persistently denied. High medical authorities are continually declaring that they never knew a female inebriate to be cured, and that they do not believe in the permanent reformation of the habitual drunkard.

Those of us who have been engaged in practical effort for the reclamation of the victims of alcohol have had abundant proof of the fallacy of this dogma. While yet mourning the untimely fate of the lamented Stephen Alford, who was suddenly taken from us when full fruition of his hopes for the habitual inebriate seemed on the point of realisation, I feel I cannot pay a more

* Read in the Medicine Section, British Medical Association, Ryde, August, 1881.
fitting tribute to his memory than by presenting to you the record of three successful experiments in the treatment of dipsomania.

**Spelthorne Sanatorium.**—This institution, for the reformation of women who have fallen into habits of intemperance, was opened two and-a-half years ago, mainly by Mr. and Miss Antrobus. It is situated within a mile of the Feltham Station, on the South Western Railway. It is a purely philanthropic undertaking; some of the inmates paying nothing, and others paying a smaller sum than is sufficient for their maintenance. During the two completed years thirty-eight patients were admitted; seventeen have gone out, of whom nine are known to be doing very well indeed; four, when last heard of, were satisfactory, and five had relapsed. Seventy-five per cent. of the cases may thus fairly be said to have been cured. The title, “Sanatorium,” shows that drunkenness in its aspect as a disease has been carefully kept in view, while the susceptibility of those admitted is guarded by their being called “patients,” not “inmates.” The patients are employed chiefly at laundry work. There is constant medical supervision, and no expense is spared on either medicine or diet. Everything about the place is bright, pleasant, and attractive. While medical treatment, to strengthen the debilitated nervous system and assuage the drink crave, is efficiently carried out, it has been found that religious influences have a marked effect in hastening and confirming the cure. I have minutely inspected this sanatorium, and, after inquiring into the subsequent history of such patients as have left, can bear the strongest testimony to the admirable and successful treatment of female dipsomania here pursued. The applications for admission were from women of all classes in society, 25 per cent. being domestic servants, nearly as large a proportion respectively dressmakers and ladies, 6 per cent. governesses, 3 per cent. schoolmistresses, and 2 per cent. nurses.

**Kennington Home.**—St. James’s Home for Female Inebriates at Kennington Park, London, conducted by M. and Madame Zierenberg, has passed through five years’ probation. During the fifth year there were forty-nine inmates who had remained from six months to two years in the Home. Of these, thirty-four, or 69 per cent., are doing well. A considerable proportion of the inmates are there kept free of charge, and the work is carried on at great expense to the Lady Superior. Laundry work is the principal industry. Medical treatment is applied to the physical disease, and spiritual treatment to the moral mischief. The dietary is generous. I have been favoured, from an independent source, with a very interesting correspondence between
Three Experiments in the Treatment of Dipsomania.

a member of the ladies' committee and eight former inmates. The permanent cure of several domestic servants among the number is attested by their mistresses.

Fort Hamilton, New York.—This well-known retreat has been established for thirteen years. On 31st December, 1880, there were 134 patients remaining in the Home, three-fourths of whom were indigent poor, and the remainder private boarders; 268 left during the year, of which number fifty have been lost sight of, four are improved, ten are unimproved, and 198 are doing well. Up to January, 1880, the reclaims were 60 per cent., during 1880 they were 70 per cent. Probably this is the most extensive and efficient institution for the care and treatment of inebriates at present in existence. The buildings have been constructed specially for the particular object, and the grounds are so extensive as to supply opportunity for amusement and occupation without the patients having to go outside the limits. There is an excellent system of classification, both males and females being admitted. There is an efficient medical staff; and religious services, concerts, lectures, and entertainments are found a valuable aid to the beneficial influence of the therapeutic treatment. There is a special hospital department for the care of new cases suffering either from delirium tremens or from the after-consequences of a debauch.

Observations.

From the records of these and other similar experiments I have collated a few general deductions, which have been confirmed by my own experience in treating dipsomaniac cases in private practice, without the aid of residence in a Sanatorium or Home.

Age.—The bulk of the cases are between twenty-five and forty-five years of age. The proportion decreases gradually to twenty years in the one direction and sixty in the other. Beyond these limits the cases are comparatively few, but I have had one at fifteen and another at eighty-seven.

Sex.—In America from 15 to 20 per cent. is the usual proportion of dipsomania in females; but in Britain, alas! the ratio is much higher. It has been fully 40 per cent. of the whole number in my experience.

Education and Position.—In the homes for women about a fourth of the applicants for admission were educated ladies. At Fort Hamilton nearly go per cent. of the whole number admitted had been more or less educated, nearly a fourth having received a liberal education, and one in fourteen having passed through a college curriculum. One in eleven had followed a
profession, near 3 per cent. being physicians. There were fewer lawyers, and still fewer clergymen. Some of the worst cases of inebriety I have had to deal with have been in the person of highly educated and accomplished men and women, and all the records substantiate the fact that dipsomaniacs come largely from the more intelligent and educated classes of society.

Marriage.—There is no great difference between the proportion of married and unmarried males, but married women and widows classed together, occur in the ratio of three to every spinster.

Heredity.—This was the predisposing cause of 45 per cent. of the cases admitted to Fort Hamilton. The proportion I have found nearly as high in other homes and in my own practice. These are exceedingly intractable cases to treat. When this predisposing cause is present, the patient, no matter how abstemious he may be, should never be ordered by his medical attendant any fermented or distilled liquor. The risk is very great, the spirituous remedy not unseldom developing into an exciting cause of dipsomania.

Exciting causes.—In females, a resort to intoxicants for relief of natural pain, and to beer and stout during lactation; the menstrual excitement; the want of occupation, &c. In males, cerebral injuries; sunstroke; family sorrow; excessive mental labour inducing exhaustion; business worry; temptation from social drinking, and public licensed incentives to drinking; nervous susceptibility to changes of temperature, &c.

Appearance of first symptoms.—Habit usually begins to appear between fifteen and thirty. Special care ought therefore to be taken to shield those who are afflicted with the hereditary taint of alcohol, through this dangerous period, during which they are most liable to be affected by exciting causes.

Treatment should be early.—Very few drunkards come under medical supervision till the disease has been confirmed for many years. In one of my cases, the habit had been kept secret for eight years, and had been known to the family for two years, before medical aid was sought.

Duration of residence.—Less than twelve months' residence in an inebriate home should not be thought of. In many cases, two and more years are needed. On the other hand, I have known cases cured after six to eight months' residence.

Treatment.—The distressing want of sleep for the first few days should be combatted, by bromide of potassium and henbane if possible. The crave for alcohol is best treated by the bromide with capsicum. The Turkish bath is an excellent adjuvant. Cleanliness, air, exercise, suitable diet, and—above all—occupation, are a necessity. The diet should at first be light, and afterwards generous. Nerve tonics are sometimes indicated. Per-
sonal religion, as distinguished from sectarian dogmas, will greatly promote the cure.

Total abstinence is essential. This has been the experience of all who have successfully treated dipsomaniacs. Complete and unconditional abstinence is a *sine qua non*. On no pretence—either of medicine, of fashion, or of religion—should this absolute rule be infringed, as this can never be done without peril to the patient.

It may be objected, "Your cases are all very well, but they are only temporary. Sooner or later the patched-up inebriate will lapse into inebriety, and return, like a sow, to her wallowing in the mire." Were it so, still we are entitled to claim credit for a cure, in the same sense as a hospital physician discharges his gouty patient "cured," though the highest medical skill cannot eradicate the inherited diathesis. We, however, can justly claim much more than a mere temporary benefit. Our inebriate institutions are not old enough to prove a long permanent cure, though they can show cures of ten to twelve years' standing. But the beneficent total abstinence reform can point exultingly to innumerable trophies in the persons of confirmed and apparently hopeless sots, who have stood the ordeal of forty years' temptation, and are a living demonstration that dipsomania can be cured. The projected Dalrymple Home, under the provisions of the Habitual Drunkards Act of 1879, is yet unopened. Eight years only of this Act remain to us. Two of our most honoured brethren—the far-seeing Dalrymple and the saintly Alford—have sunk to their rest on the battle-field. Shall we allow their energies to be wasted; shall we leave their devotion unrewarded? Have we the heart to write on their tombstone, "For the habitual drunkard they lived and died in vain"? Forbid it, heaven! This Act and this agitation have been the direct offspring of the medical profession and of the British Medical Association. To that profession, and that great organisation, do I appeal to complete the work so auspiciously begun, and supply, in a suitable and economical sanatorium, those conditions which the best medical science tells us are conducive to the permanent reformation and cure of habitual inebriety.
Proceedings of the
British Medical Temperance Association.

THE PRACTICAL TREATMENT OF DIPSOMANIA.

Under the presidency of Dr. Benjamin Ward Richardson, a meeting was held at the rooms of the Medical Society of London, Chandos Street, Cavendish Square, Friday, June 24, to resume the discussion of the paper on the above-named subject, read before the Association on May 27, by the late S. S. Alford, Esq.

Dr. James Edmunds, senior physician to the London Temperance Hospital, in re-opening the debate on Mr. Alford’s paper, said: We have before us the following propositions—first, that relapsing drunkenness is a disease, the “disease of inebriety,” and is allied to such nervous complaints as “insanity, hay fever, or sick headache”; second, that the attack may be suddenly induced by certain climatic conditions, such as “the sea-air, east wind, dryness of the atmosphere, extremes of heat or cold—in fact, by anything disturbing the harmony of the organisation.” “Loss of property, bereavement, physical injury, sunstroke and railway accident,” are also cited as exciting causes which may be responsible for a bout of drunkenness; third, that legislative power for the detention and control of such inebriates in asylums is the necessary remedy; fourth, that such asylums should be founded by public subscriptions; and fifth, that by such means valuable lives may be restored to their families. In support of these propositions no reliable statistics or even well-defined cases have been quoted, nor has the term “disease” been in any way defined. On the other hand, one such asylum founded by public subscriptions, has already failed. If, therefore, we are not to repeat such failure, it behoves us to understand distinctly what it is we propose to do. I cite the following cases as illustrations of my own experience and as pointing to conclusions at variance with every proposition which has been put before us in the present discussion.

Case 1. A well-to-do tradesman had been attended by me through several attacks of delirium tremens. On his recovery from one attack, I persuaded him to be a total abstainer. Coming downstairs, I told the wife that she also must be a total abstainer in order to keep her husband in countenance, and to show him that health and strength could be perfectly maintained without the use of intoxicants. To this the wife demurred on the ground that she only took three glasses of beer a day, and that it had never done her any harm. Argument proved unavailing, and I left her, saying, “Your husband will never keep the pledge, but will go to ruin.” That man did go to ruin. He died in a lunatic asylum, and his wife and family were left destitute. Case 2. The rector of an important parish in the home counties some time since called upon me, asking what he should do with his wife who had taken to drinking, and had become a scandal in his town and in the social circles in which they visited. She had already been placed at various homes, but when the superintendents enforced abstinence, she quarrelled with them, pawned some of her jewellery, went home, and telegraphed for her husband to send the carriage for her to the railway station. This had occurred several times, and recently at a garden party she drank off nearly a decanter of sherry, and was taken home drunk. My advice was that the rector should exclude wine from the rectory absolutely, take none himself, and support her in the practice of total abstinence by his own personal
example. To this the rector demurred, on the ground that he had always taken wine without injury. He pressed me to prescribe for her. I replied there was but one remedy—total and unconditional abstinence, and that unless he set his wife the example it would be impossible for her to sit at the same table and drink water while he was drinking wine and disseminating the odour of alcohol through the room. He left, and I have not since heard the result. Case 3. A young lady, twenty-three years of age, the daughter of a country clergyman, had become a drunkard. She voluntarily left her home, and worked for several years as a nurse in the Temperance Hospital. With these surroundings she kept her pledge, and proved a most valuable sister in the Hospital. Feeling quite well and strong, and her mother being ill, she returned home at the end of about three years to her father, who all the time continued his wine, and would not allow a temperance society on the Church of England basis to be established by his daughter in his parish. That lady now nurses her mother, and from a letter I lately received I understand that her resisting power has proved strong enough to support her against the influence of her home surroundings. Case 4. Some twenty years since an amiable gentleman came to live with me as an assistant in my then large general practice. For eighteen months in my house he did well, and with one exception, when he took a quantity of spirit of camphor in mistake for proof spirit, he was all that could be desired. Subsequently he went to live in the house of a medical friend who drank alcoholic liquors regularly at table, and who, on the occasion of a party, set this gentleman to pour out wine at the refreshment table. He became intoxicated, had a violent scene with my medical friend in the midst of the party, at last the police were remorselessly called in, and next morning, to my lasting regret, I learned that he had spent the night in one of the police cells at the station, where for years he had acted as my deputy in charge of a large division of the metropolitan police. I could not afterwards employ him, and after drifting about in various subordinate situations, he went into practice on his own account in a small street in a low neighbourhood in London, and lived for some years upon stray half-crowns earned in the intervals of bouts of drunkenness. Case 5. Six months ago my servant called me out from dinner one evening to see a suspicious-looking man of middle age somewhat intoxicated. He said he had come to ask me to give him the pledge. After some conversation, I found he was a well-qualified medical man about forty years of age, who, after losing his own practice and position through drunkenness, had been acting in various inferior capacities as assistant to medical men in London, one of whom had, a week or two before, dismissed him as an incorrigible drunkard. I administered the pledge to him, told him to go to his lodgings, keep in bed for the present, live upon oatmeal-gruel and milk, and take neither alcohol nor any of the common substitutes for it, and come and see me again a few days later. I gave him no money. A few days later he returned, and he told me he had tasted no alcohol since he saw me. Some more advice and a little pecuniary assistance was then given to him, and I told him to come and see me again a few days later. Being unable to get employment he drifted back into drunkenness, and when I remonstrated with him, he said, "You don't understand how I am placed; many men will give me a pint of beer who won't give me two pence to buy some milk." I then took him into the Temperance Hospital in a state bordering on delirium tremens. Rest in bed, simple food, and a little medicinal treatment, brought him round in a week or ten days, and he then began to assist in the hospital. In eight weeks he got into most excellent health. Inquiry of his employer assured me that he had degenerated neither into a liar nor a thief—two stages which inevitably follow upon drunkenness, and which at once mark off the drunkard
as incurable. I was told that he was an incorrigible drunkard, but as he was now in good physical health, and was described as "a very able practitioner," as well as "honest and industrious," I thought I would try to get him a situation. I succeeded, and he went to the north of England to live with a doctor who was a total abstainer. I saw that he was comfortably furnished with clothing, a travelling bag, and all the accessories which would enable him to begin fairly. He there worked well and never touched alcohol. Fortunately also the gentleman took him on my general recommendation, without asking me as to his sobriety, and therefore he had an absolutely unprejudiced start. Meanwhile another gentleman, who had seen him at my house, wrote to say that he would be glad to have him. This was a gentleman in large practice in one of the most charming parts of England, and he offered him an ample salary, with all the necessaries and refinements of a gentleman's life. The situation was accepted. Dr. —— left the North of England and went to reside with his new employer. But here he took ale with his lunch and dinner. The consequence was, that his protecting line was broken down, and without drifting into anything like observable drunkenness, the appetite for alcohol gradually increased; and when out hunting he found it impossible to resist a glass of sherry at the houses where they stopped. After two months he came up to London for a day or two, with his salary in his pocket. He went to some of his old lodging-house haunts, or met with old acquaintances, and became intoxicated. He was robbed of his watch, he pawned his clothes, and he went back soon after in a state of dirt and drunkenness to the house of the gentleman with whom he was living. Next morning this gentleman dismissed him, and wrote to me about the result. In a few days the man called upon me relapsed into his old state of drunkenness, and begged further assistance. I gave him a few shillings from time to time, and finally took him into the Temperance Hospital once more. Again he got into a perfect state of health—this time more rapidly than before, as his indulgence in alcohol had been of shorter duration. I told him to go and lodge in a temperance coffee-house, and that I would pay for his lodging for a week or two, and would try and get him another situation. Instead of going to a temperance coffee-house, he went to his old haunts, again got drunk, and called at my house in such a filthy condition that I was obliged to say I could not see him. A few days later a man called upon me smelling of spirits, and asked if I would do something for Dr. ——. I asked him his name, and then his profession, and how he came to know Dr. ——. He said he was a publican and had known Dr. —— for many years, and wanted to do something to help him. I said, "Well, this is a case that I have failed in reforming. Now, you have made a good many drunkards in your time; try what you can do towards curing this one." He seemed somewhat astonished, and left. Several times more this poor fellow knocked at my door, and my servant had to tell him that I could not see him. An order for the workhouse was given him. He went there, but left in a few days, and I have not since heard of him. Cases like these I could accumulate from my memory and from my notebook, including not merely medical men, but clergymen, Cambridge wranglers, and persons in all sorts of ranks and positions, and the result is this, that I am obliged altogether to demur to the proposition that this relapsing drunkenness is a disease. I say that it is a vice. I say that habitual drunkenness is a mere indulgence of the animal passion for drink at the expense of all other considerations, until the nervous tissues of the man are degraded and spoiled. Drunkenness is one of those things which will always be evolved, according, firstly, to the character of the individual, and, secondly, according to the circumstances in which he is placed in regard to early temptations to drink. Men have various resisting powers against the temptations to steal, to lie, to indulge in sensuality.
No doubt the children of drinking people are weak in all these respects, and that they have less balance and less resisting power. Then, again, those temptations which surround a man in youth have immense power over his habits. Then, Sir, I submit that you have to consider first the resisting power of an individual, which varies in every individual; secondly, the temptations by which the individual is surrounded. To admit for a moment that a bout of drunkenness is to be excused because the wind has blown from the east, or a man has had a whiff of sea-air, that he has been hot or cold, or the atmosphere has been dry, reduces the matter to an absurdity, and stultifies the whole of our machinery for the repression of crime. How far men who start with an infirm, nervous organisation, and who are more or less debauched by temptations such as these in early life, are to be blamed for their actions I know not; but this I see, that if we make such excuses as these for a bout of drunkenness, we lose our footing for the repression of crime under any circumstances. As to the treatment of these cases it turns upon this—total and unconditional abstinence from intoxicating drinks, and from all substitutes, such as laudanum and chloral. If debilitated, they must lie in bed and abstain from exposure to cold, and from work until their strength re-accumulates. If unable to digest ordinary food, they must live upon oatmeal, gruel, and milk, and broth with barley-meal and vegetable foods. If they cannot sleep, they must suffer the horrors of one, two, or three, restless nights, but take no narcotics. Then they will sleep, and sleep soundly, and at the end of a week they will be well. All other treatment is unnecessary and delusive. The man must never swerve from total abstinence, and he should associate as little as possible with drinkers. There are two classes of these patients—one able to pay, and one not able to pay. Those able to pay will be best cared for in the private asylums to which many eminent abstaining medical men are already devoting their time and their capital, and which are in need of all our support. Those unable to pay, instead of being committed to prison over and over again for periods of a few days, ought to be committed to a reformatory institution somewhat like a lunatic asylum, in which these people should be detained at the expense of the county for three, six, nine, or twelve months, and made, so far as possible, to work for their support. Convalescents who lean upon "substitutes," and those who fail to make their abstinence a matter of principle, always relapse.

Dr. J. James Ridge followed, and generally agreed with his friend Dr. Edmunds on this subject. He had never been able to satisfy himself that there was any distinct line of demarcation between dipsomaniacs so-called and moderate drinkers of alcohol. It was simply a question of whether more or less alcohol had been taken, and the susceptibility of the particular constitution to the alcohol which they took. There was a very wide-spread delusion, no doubt, regarding alcoholic drinks, that they were absolutely necessary, and he took it that the craving that people felt for these drinks in so-called moderation was only the small beginning of that almost irresistible craving which people who were dipsomaniacs felt. It was simply a matter of degree. As regarded the treatment of dipsomania—for that was really what they were supposed to discuss—there was no doubt the sooner its victims were cut off from alcohol the better, and it was distinctly for their advantage that they should not be allowed to get it. But, as they heard, the first time temptation was put in their way they were very likely to fall, especially if, they felt that the previous abstinence had been enforced, if it had been against their will. They should seek first of all to restore the tone and power of the nerve centres enfeebled by alcohol. Time and good food would effect this to a large extent. But he took it that they could scarcely ever bring a man up to the same standard of mental power that he was in before, and that the fact that he had
yielded to this temptation once made it always more likely that he would yield again. Therefore there was even greater necessity to avoid all kinds of temptation in the matter, and far greater responsibility on the part of those who put these temptations in the way of those people, and expected them to refrain from taking too much, although they knew that they had previously been unable, under more favourable circumstances, to resist the temptation.

Dr. Stewart, of Clifton, said that the practical question was, How were they to treat this disease? But before he alluded to one or two matters connected with the practical treatment of the disease, he would like to refer to the term used itself. As scientific men he thought they ought to be careful as to the use of any term which implied their adherence to a theory they were not prepared to stand by. It was very doubtful if they could put dipsomania under the category of a disease, and it was important that they should not affix a term of this kind to a condition of things which they wanted to get the public to view in its proper light. If the public got hold of the idea that medical men considered that a man who gave way to drink periodically, and to such an extreme as to lessen his powers of usefulness in society, was only the victim of circumstances which might in another case produce some other nervous affection, they would be doing injury to the cause they had at heart. He regretted that Mr. Alford did not stick to the word “drink-craving.” It was a word with which he thoroughly agreed, and it did not involve any theory; and he trusted that the word “dipsomania” would be seldom used by medical men unless they were prepared to support the theory that it was a disease of the nervous system which produced the condition called mania. He thought one of the simplest definitions of insanity which had been given was the definition that none of them could too frequently repeat — insanity was a disease of the brain which involved the loss of mental power. A disease of the brain which went so far as to affect the mind was not the condition of a large majority of the people that they were led to treat under the term dipsomaniacs. Now the practical point, as he had said, which they had to consider was, How best to get rid of this condition in an individual? Whether it was so-called nervousness, whether it was moral or whether it was physical, they had to try as physicians to do their best to bring the patient back to a healthy condition again. The first and most vital point, as he conceived, which all of them must lay down absolutely if they were to succeed in the treatment of drink-craving, was the entire removal of stimulants.

Dr. Dowse had not studied this subject so deeply as to justify him in taking up the time of the meeting. It was undoubtedly a very wide question, if they took the conditions appertaining to dipsomania—the moral side, the physical side, and the psychical side—and he must say that so far as his experience was concerned he was inclined to agree with Mr. Alford, and to disagree with the majority of the observations made by the other speakers. They were all more or less, he presumed, irresponsible beings; certainly the man who laboured under the disease of drink-craving was an irresponsible being. How far that man might be in a state of mania was questionable, but he believed that the majority of drink-cravers were, in the absolute sense of the word, dipsomaniacs.

Dr. G. B. Clark, of Fenwick, West Dulwich, had given a good deal of attention to the subject. For a number of years he had tried to form some opinion with reference to it, and he was still not very decided either on the one side or the other, and he was open to receive any further evidence that could be brought before him, and he must say he had heard nothing from any of the gentlemen to make him change the position he took up, and that was the position of having an utter disbelief in the doctrine that dipsomania was a disease. If dipsomania was a disease it must affect some organ, and what organ did it
affect? Was it the brain, or the nervous system generally? Was it a functional disease, capable of being thrown off, or was it an organic disease? As to its being a hereditary disease, he had not found any evidence of that in cases he had seen. If it were a disease what was the proper remedy for it? He had heard none suggested. There had been all sorts of moral influences suggested which were generally not considered within the reach of the physician, but were more supposed to be within the domain of the clergyman. Having related a few cases of cure of dipsomania by the simple remedies of tonics, healthy and cheerful mental and physical exercises, Dr. Clark pointed out that where a man or woman addicted to drink came under the influence of religion or the temperance movement it greatly helped to take them away from their old courses.

On the motion of Dr. Norman Kerr, the discussion was adjourned till that day fortnight.

The third and concluding meeting of the Association for the discussion of this subject was held at the rooms of the Medical Society on Friday, 5th July, when there was a large attendance.

Dr. Benjamin Ward Richardson, the President, who occupied the chair, alluded in touching terms to the untimely end of Mr. Alford, which was the result of an accident on the Midland Railway, and said that he was sure the whole of the medical profession would be unanimous in the feeling of regret which the Association felt at the loss sustained by Mr. Alford's decease under such trying circumstances. For a moment it was a subject of consideration whether it might be becoming to proceed with the debate that afternoon, but on the motion of Dr. Alfred Carpenter, seconded by Dr. Norman Kerr, it was unanimously agreed to resume the discussion, the sense of the meeting being that it would be more honouring to the memory of the deceased gentleman, who, as Dr. Kerr remarked, had devoted the best part of his life, and consecrated his highest energies to the question, to go on in the endeavour to investigate the subject, which he had begun, and with regard to which he had always evinced so great enthusiasm. It was then resolved, on the motion of the President, to send a letter of condolence and expression of deep sympathy on the part of the Association to the family of Mr. Alford in their great and sudden bereavement.

Surgeon-General C. R. Francis, M.B., said:—I venture to think, with reference to what fell from one of the speakers at the last meeting, that the term dipsomania is no more objectionable than is monomania or kleptomania. As in monomania the individual has a mania with reference to a particular delusion, as in kleptomania he has one for stealing, so in dipsomania the victim craves for, or is mad after drink, and in many cases is little else than a lunatic when under its influence. It has fallen to my lot to see drunkenness and its results in various spheres of life—in the army, on board a ship, amongst Mohammedans and Hindoos, in hydropathic establishments, in retreats for inebriates, and in private practice; and the views (agreeing for the most part with those of the late much-esteemd and lamented Mr. Alford) that I now have the honour of stating before this meeting are based upon personal experience. I believe that there are two kinds of drink-craving. 1. Those in which it is developed by circumstances, de novo. 2. Those in which it is hereditary. I would eliminate from the first category cases of what may be termed ephemeral drinking, cases where there is no distinct tendency to drink for the love of the thing, but where, from a variety of causes, the individual drinks more than usual, and is very sorry for it the next day. Such are obviously not cases of drink-craving; though if the alcoholic ally be too frequently appealed to, it may become developed. There are many persons who take their glass (they would be horrified to hear it called “drinking”) at certain hours of the day (I exclude here
those who drink only at dinner and at supper), and under various social inducements. Many of these, increasing the quantity as the day advances into night, go to bed more or less affected by their potations. Such persons drink in company; and happily many, guided by their doctor or their own wisdom, or warned by some temporary illness (aggravated if not caused by the alcohol), curtail these potations. If they chose they could, as a rule, give them up altogether. It is evident, however, that this course of drinking is a most dangerous one, as in a large number of cases the crave becomes developed. The drink-crave having been in one way or another established, we ask ourselves, What is the pathology of it? In many instances we should find congestion of cerebral vessels with, it may be, disintegration of nerve tissue but this would be the effect, not the cause. As in a vast number of cases of neuralgia, where the symptoms are sometimes so severe as to lead the uninstructed to expect some decided post-mortem revelation, we shall find nothing abnormal. Like some functional disorders, especially of the nervous system, I believe that dipsomania has no morbid anatomy. Nevertheless it is, I think, as much a disease as neuralgia or ague.

We admit, say objectors, that drink-craving is a habit, but nothing more. But so, frequently, is neuralgia. Generally, though not necessarily, of malarious origin, the recurrences of pain are apt to become habitual, and the time of their advent may often be foretold with tolerable accuracy. So the crave for drink in the dipsomaniac is more pronounced at one time of the day than at another; and just as accidental circumstances will bring on a neuralgic attack, so will they— not the same circumstances, perhaps, but others—induce one of drink-craving. And here I would observe that, though the crave may be developed in anyone, those possessing the nervous constitution are especially liable to it. Should, as frequently happens, they have accomplishments that encourage their natural fondness for society, they all the more readily succumb to the blandishments of the accompanying Circean cup. An accomplished young gentleman, a barrister, with no hereditary alcoholic taint, acquired the habit of social drinking at a university. The crave was developed, and he was taken, a few years later on (in the absence of a more suitable retreat), to a hydroopathic establishment. I never met with a more agreeable companion nor a more unselfish person. But his nervous system was ill at ease. He was always on the move; and, though for days together he would abstinence from alcohol, he had periodic fits of drink-craving, and would then indulge in draughts of beer, any amount of which—fatal delusion!—he affirmed he could take with impunity. There was no harm, he thought, in beer. The superintendent of the establishment—one of our most experienced and most sagacious observers of alcoholic influences—prophesied that unless the poor fellow became a total abstainer he would die the death of a drunkard. In one month the prophecy was fulfilled. The young man meanwhile left the establishment, and afterwards destroyed himself under the influence of drink. In cases of hereditary dipsomania the crave would become developed sooner and more readily than in cases where it had been created. It seems hardly necessary to go into the question whether drink-craving is hereditary or not. The fact has been amply testified to by Aristotle several hundred years ago, and by Dr. Norman Kerr in our own day. The treatment of the dipsomaniac would be much the same in each kind of case, though in those with a hereditary taint it is of paramount importance that alcohol should never pass the individual’s lips, such cases being, as superintendents of homes will unhesitatingly testify, much more difficult to cure. And I venture to think that it is quite as important to ascertain, wherever possible, the existence of this deplorable inheritance, as it is to look for and develop or repress phrenological proclivities. The value of
inculcating total abstinence in the education of the young, as recommended by Dr. Norman Kerr, cannot be overrated. Another young man, with a lower mental development, and who had given his family great trouble by his vagaries in London, was also an inmate of the hydroopathic establishment before alluded to. He arrived one evening intoxicated. He came alone, and from whence no one knew. Had there been a suitable home for such a case he would have gone there; for, poor fellow! he was anxious to reform. Under the circumstances, he was allowed to remain. He soon succumbed to an attack of acute bronchitis, but before being laid up he was seldom free from the effects of alcohol. He used to buy gin in the town, and a quantity was found secreted in his drawers. His quiet death was a great satisfaction to his family, who had for years lived in dread of his coming to some tragic end. He had inherited the drink-crave from his mother, who latterly, before her death, was in the habit of drinking turpentine if she could not get anything better. I have never seen the love of drink more thoroughly established than in this young man. He should never have been allowed to know the taste of it. I confess that for the treatment of dipsomaniacs I have no confidence in drugs. Opium in extreme cases, gradually withdrawn, I have found of great value. But nourishment in the form of soup and egg-flip frequently repeated is essential in all.* Total abstinence, the society and example of total abstainers, imparting a knowledge on the subject of alcohol, creating an intelligent and cordial interest in the temperance movement, and appealing to the heart and moral feelings, should form the staple of treatment in dipsomania; and, in addition, I would strongly advocate active employment, not merely to serve as a stimulant counter to the one of which the individual has been deprived, but something suitable for one of God's creatures, who, now clothed in his right mind and realising to the full the mercies of the Almighty, would work at that employment in gratitude to Him, and for the love of his fellow-man. I lately visited a young man in a lunatic asylum who, his brain affected by drink, had been taken there in the absence of a more suitable home. His first words almost were, "For God's sake get me removed from this place." He is the assistant of a dentist in London, an excellent mechanical workman, and fond of his work. His wife and children, whom he loves, have left him, and he can get no clue to them. I have told him that if, when he leaves the asylum, he will sign the pledge and keep it for six months, his wife will, I am sure, be most willing to rejoin him, and that I will endeavour to bring it about; "But," I added, "you must have employment apart from your work;" and I suggested his taking up the cause of temperance reform. He has caught at the idea, and I have lent him suitable books. The sequel remains to be seen. There is no hereditary taint; and if that young man will abstain altogether—he does not take much, but a little upsets him—I believe he will, with occupation, eventually cease altogether to care for drink. Provided the career of drinking has not been too long, and the individual be not too advanced in life, there seems no reason why the mind and physical frame should not recover their original tone. The brain may indeed have become weakened, and the same amount of mental effort may not be possible, but otherwise recovery may be complete; and it would be very encouraging to the patient to be assured, ceteris paribus, of this result. With regard to there being any connection between vegetarianism and abstinence from alcohol, there is, I believe, none whatever; no more than between the former and sea-sickness. It has been alleged that vegetarians do not suffer from sea-sickness! The high-caste Hindoo is a vegetarian and an abstainer on religious grounds. The Mohammedan's religion also enjoins abstinence from alcohol, but he eats

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* The value of caffeine injections in alcohol intoxication has been well shown by Professor Binz, of Bonn.
any kind of meat, except swine-flesh. As in other parts of the world, so in India, religious precepts are not always followed; and even amongst the highest castes of society stimulants and narcotics are sometimes indulged in, privately. Ostracism would be the result of a Brahmin or Mohammedan being seen drunk, but natives of low caste drink openly and lose nothing. If women do drink, they confine it, I believe, to the chamber of debauch. Young Bengal, or the Bengalee of the period, listens to the teachings of theism and atheism, and, abandoning the idolatrous worship of his fathers, assumes the habits of the so-called Christian, and smokes cheroots and drinks brandy-and-soda-water. I have never seen a case of drink-craving in a native of India. Those natives who do indulge have, as a rule, bouts of periodical drinking.

Dr. Alfred Carpenter said that the loss of self-control was at the bottom of habitual drunkenness. It was at this point that the victim of drink often asked for help, when he found the power over his desires waning. The resisting power of the individual was absolutely nil the moment that any germ of alcohol found its way into the tissues of the body. The slightest amount was like the effect of motion upon water cooled below thirty-two degrees, in perfect quiet. There was an immediate production of ice, and the sensible production of heat in the case of alcohol, which set up drink-craving in all its force. The cure of dipsomania depended upon two conditions, the personal habit of the patient himself, and his hereditary tendencies. In the case of those where the habit was acquired, the cure would be comparatively rapid; and provided means were taken to instil proper principles as to the knowledge of the chemical action of alcohol, there ought to be no relapse when the patient came out of the home where he might have been attended; but with hereditary cures the result might be very different. It took a lifetime to change those conditions, and yet they knew that practice would make perfect, and that the hereditarily ner-

uous man might by proper education get rid of his nervousness. There was the work of the home to inculcate such maxims, and bring the patient along such a course of self-control under proper teaching as might eliminate even hereditary tendencies, and restore the man to his original purity and mental power. He believed they could do this. To doubt it was to doubt the power of their whole profession in its first lines of work, and to lose sight of the fact that the work of the medical profession was more often hygienic and educational than one connected with the mere administration of drugs and providing antidotes for diseases. They might depend upon it that prevention was of far more importance than cure, and that it was the true remedy for dipsomania.

Dr. Hall thought that it had not been sufficiently brought before the public by the profession that the condition of the mind of an habitual drunkard was such that he was often not responsible for his actions. And, although we were making great efforts in the right direction, where was the institution or hospital in which the poor drunkard would be treated medically for his disease? He could not send a case to the workhouse or the parochial infirmaries, because the patient would be refused admission. Drunkenness was looked upon there as a matter of vice. But he believed if there were hospitals established for drunkards, where they could go without the necessity of making application and all the other formalities that rendered the machinery of public and charitable institutions so clumsy, and where the disease would be properly treated as a disease, incalculable good would be done.

Mr. Frederick John Gray, of Rugeley, said that his whole experience led him entirely to sympathise with Mr. Alford's views. He was quite satisfied that men who had been drinking for some years, and especially those who had done so from some depressing cause, whose nervous system was entirely exhausted, could not be restored to health by a few months'
treatment. He had also come to the conclusion that in private homes the only service they could be to drunkards would be with that class of them who had been hard drinkers, and who themselves were anxious and willing to do their utmost to help the medical man to cure them. But there was another class they could be of no service to, but the retreats would be found of great use in bringing them back to health if properly conducted. This was the class of men who liked drink and had been drinking for many years, and who cared very little about their position or family ties. If they were long enough confined in retreats where all drink was compulsorily kept from them, they might be restored to health, after which moral suasion might be brought to bear upon them with a view to keeping them from returning to their old course.

Surgeon-General Poole thought that dipsomania was not only a disease, but also a vice, and he believed that homes for inebriates would be most valuable, because the medical element might be brought in contact with the clerical or religious element, and so the dipsomaniac would have a double influence at work in effecting a cure upon him.

Mr. R. Paramore felt that the religious element in the cure of dipsomania was a most important one. Unless they could make a man feel that he was responsible to a higher being than himself, there was not so much motive in his denying himself. No person could possibly be reclaimed unless the religious instinct was touched. He felt certain that dipsomania was a disease, and its victims required to be acted upon by all the moral and physical means in their power, so that they might give up their intemperate habits.

THE PRESIDENT'S SUMMARY.

Dr. Richardson then summed up the debate, and said that with the exception of Dr. Edmunds' speech there had been a singular unanimity of thought and feeling on the question discussed. It had been his duty to perform the office of chairman many times in his life, but he did not recollect a prolonged debate of this kind in which there was such a general unanimity of feeling and judgment as in this instance; and he believed that if the subject were re-argued fairly with Dr. Edmunds himself, he would in the main join with all that had been said. When Dr. Edmunds was speaking on the last occasion, and remarked that dipsomania was not to be considered as a disease, he (the speaker) wrote down a piece of paper, "What is a disease?" which Dr. Edmunds seeing made a comment upon. Well, he (Dr. Richardson) said that that was a disease which was attended with some definite pathology. That he thought could not be disputed by anyone. Then came the question whether dipsomania was attended with any particular pathological indications, and he thought if they brought the matter to this point they were at once forced, on physical grounds, to admit that dipsomania was unquestionably as marked a disease as any other form of malady with which they came into contact. The medical man summed up all the symptoms of dipsomania in the same way as he would sum up the symptoms of pneumonia, bronchitis, typhoid, or typhus. These were considered diseases, because of the recurrence of their symptoms in the same form; and with regard to dipsomania, the recurrence was so striking that there would not be a difference of opinion between any two of them as to what the nature of a case was: he saw therefore no means of getting out of admitting that it was a disease. When they came to the pathology as indicated in the changes which took place in the body, they found certain marks which were perfectly indicative of disease. Dipsomaniacs had changes going on in various organs of the body, which were essentially typical of the condition in which they were. For example, there would be in all of them at one time a very equal, and at another time a very slow and feeble action of the heart. They would listen to the heart one moment, and the impulse would be great upon the
entirely agreed with Mr. Alford that anything which produced a physical or mental depression would turn the scale, would give rise to a desire on the part of a reclaimed drunkard to go back to his former habit of drinking; that desire would lead him back to the acute stage; while finally, the acute stage would lead to determinate relapse. The effect of the east wind, which Mr. Alford had mentioned, he (the speaker) looked upon as a very interesting and a profound observation; for he felt quite sure, having looked over his own books for a lengthened period, that cases of dipsomania were much more frequent in the spring months than they were in summer. He took it, in the management of such cases, after removing stimulants, that the next best thing was to provide, as far as possible, every comfort and everything that would conduce to the support of the patient. He quite agreed with the observation made by one of the speakers that deficiency of sleep tended to bring about a relapse, and he therefore agreed with all that had been said as to the importance, in treating patients, of giving them plenty of food, sleep, and warmth, and of relieving them of all the distressing causes that had a tendency to produce an exhaustion, and thereby a tendency to the taking of stimulants. Coming to purely medical details, what were the best means of making dipsomaniac patients sleep when under treatment? What right had they to give patients a substitute of any sort for alcohol? He confessed he saw very little good in substitutes. Yet sometimes they got conditions of stomach which seemed to require something to stimulate its action. If there was great acidity, as often happened, nothing answered so well as mixture of bicarbonate of ammonia, five grains; tincture of capsicum, ten minims, with a bitter infusion of hops to make up the draught. This he found to answer exceedingly well. If there was not acidity and if the alkalies produced irritation and heartburn, he generally resorted to a draught composed of five to ten minims of tincture of nux vomica with infusion of hops and ten minims of nitro-
muriatic acid. Very frequently when there was extreme insomnia, as there
often was in these people, he found
infusion of henbane, with half an
ounce of liquor ammonia acetatis, and
from three to four grains of bicarbo-
nate of ammonia in half a pint of
water, to be taken at bedtime, very
efficacious. If there was a great deal
of nervous restlessness from twenty to
thirty grains of bromide of potassium
might be added. This would be found
to be an excellent narcotic in place of
chloral, which he at one time believed
in, but which his experience did not
confirm as being a useful drug in
these instances. It led to a desire for
alcohol, its action being very much
the same. Opium again produced
nausea and constipation, accompanied
with bilioussness. One other point
which he wished ever to be held in
mind was that the skin should be kept
in good action, and in moments of
depression exceedingly useful results
would follow from Turkish baths. He
wished from his heart he could agree
with those speakers who thought they
found a panacea for drunkenness in
religious influence. There was no
doubt religion was most beneficial in
some cases, but much depended on
the kind of religion that was taught.
If that were gloomy and threatening,
and hopeless, it sometimes led back
to the use of stimulants. He had
noticed, as a psychological fact, that
the Catholic religion, which was most
imperative of all in its teachings, and
the ministers of which spoke with
great decision, excited effect which
was often a very determinate aid to
reform. But the effects of religious
brooding over doubtful points in theo-
logy were most injurious. He quite
agreed with Surgeon-General Francis
as to the importance of trying to get
all reclaimed drunkards to join and
take an interest in the temperance
movement. Having dwelt for a short
time upon the desirability of intro-
ducing persons who were inclined to
drinking habits into cheerful society,
or after having found out their peculiar
proclivities, artistic, musical, literary,
or whatever they might be, to induce
them to engage their attention with
such healthy pursuits, Dr. Richardson
referred to the relation which smoking
had to the encouragement of drinking
habits, and said that if his experience
was not wrong, there was no safety
to the dipsomaniac who indulged in
the use of tobacco. He believed that
smoking at times gave temporary
relief, but it was a danger of the most
potent kind. Sometimes it produced
confirmed dyspepsia, palpitation of the
heart, and inability to take food from
which exhaustion followed, and there
was a desire excited for something
else in the shape of stimulating drink,
and so the drinking habits began and
went on from bad to worse. The
speaker concluded his remarks by
saying that he had not made up his
mind as to whether there should be
any intermediate institution between
those which were conducted by such
competent men as Dr. Stewart, of
Clifton, Mr. Gray, of Rugeley, and Dr.
Clark, of Folkestone, and others who
devoted their lives to the admirable
work of treating dipsomania, and the
institutions which exclusively belonged
to the State. He was not at all sure
whether they should not request the
Government to reorganise county asy-
lums with a view to the admission of
dipsomaniacs. That seemed to him
to be the basis on which they ought
to find a resting-place so far as insti-
tutions for the inebriate poor were
concerned. At the same time he
would not say a word to discourage
any plan that Mr. Alford had suggested
in his paper, especially for the present;
but for the future he felt sure that
first-class homes at the houses of ac-
complished medical men and Govern-
ment homes for the poor in agricul-
tural districts, far removed from all tempta-
tion, were the bases on which they
must ultimately rest for the successful
treatment of dipsomania.

The meeting then broke up.
STIMULANTS IN WORKHOUSES—ALCOHOLIC LIQUORS AS MEDICINES FOR THE SICK.


(From the Medical Press and Circular.)

The supply of intoxicating drinks to the healthy pauper is a separate and independent question, and has nothing whatever to do with the employment of these liquors in the infirmary as therapeutic remedies for the unwell. The beer allowance to inmates not sick is one thing, the prescription of alcohol as a medicinal agent in the treatment of the sick is another and a totally different thing. The former is a question of dietetics; the latter, of therapeutics. For the former the guardians are responsible; for the latter, the responsibility justly rests with the medical officer, and with him alone.

The fact of any article of food or drink being useless in good health is no proof that it is valueless in bad health. Some of the simplest and most deadly poisons to the healthy are most potent and effectual remedies when judiciously administered to the sick. No more poisonous agent can be found than prussic acid, yet there are few more useful medicines in the whole range of the British Pharmacopoeia. We can, therefore, discuss the medical administration of alcohol to the sick poor without prejudice, and with no regard to any opinion we may have formed as to the action of intoxicating drinks on the healthy human frame.

From a return relating to the consumption of liquors in workhouses, ordered to be printed by the House of Commons on the motion of Lord Halkness, I find that the total cost for alcoholic stimulants in the year ending Michaelmas, 1871, was, in England and Wales, £115,424. Of this sum, £82,554 was for indoor, and £32,870 for outdoor paupers.

The first thing that strikes one is the extraordinary difference in the amount expended by different unions. In Cornwall, the amount was £404 for 1,096 paupers, while in Sussex it was £5,071 for 3,246. In Cumberland the cost was over £3,927 for 632 paupers; in Berks it was more than ten times as much, or nearly £3,490 for 1,738. In the same proportion as Cornwall, Sussex would have expended about £1,200 in stimulants, whereas it really expended considerably in excess of four times that amount. Had Berks paid at the same rate as Cumberland, Berks would have paid £900, whereas it actually disbursed for stimulating drinks nearly £4,000.

In Wales £46 was expended for 54 persons in Radnor, or at the rate of £17s. per head; there was £60 for 161 in Brecknock, or at the rate of £1 8s. 2d. per head; and only £56 for 550 in Carnarvon, or at the rate of 2s. per head.

If we analyse these returns for England and Wales, we find no rule for the consumption of strong drinks by either indoor or outdoor paupers.

In Berks the cost for indoor paupers for the twelve months was £1,510, and the number of inmates during the last week of the twelve months was 758, or £2 14s. per head. In Durham the cost was £811, and the inmates 785, or £1 os. 8d. per head. In Devon the cost was £838, and the number 1,151, or 14s. 6d. per head. In Cornwall the cost was £2,258, and the number 401, or 12s. 10d. per head.

In Wales the Carnarvon guardians disbursed £18 17s. 6d. for eighty-two indoor paupers, or at the rate of 48. 7d. each; the Anglesey guardians, £2 19s. 10d. for twelve, or 58. each; the Denbigh guardians, £106 17s. for
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fifty-four, or nearly £2 each; and the Radnor guardians, £25 18s. 4d. for six, or £4 6s. 5d. each.

Among outdoor paupers the discrepancy is as marked. In England the return of Lord Harkness informs us that in Berks there was spent for liquor, for paupers under the medical care of the district surgeons, £1,978 for 1,180 persons, or at the rate of £1 13s. each; in Leicester, £1,065 for 751, or £1 8s. each; in Cornwall, £1,145 for 605, or 4s. 2d. each; in Chester, £89 for 1,080 persons, or 1s. 10d. each; in Dorset, £511 for 1,016, or 10s. 6d. each.

In Wales the stimulant expenditure for the outdoor poor is considerably varied. In Carmarthen it is £62 5s. for 134 paupers, or 9s. 8d. per head; in Radnor, £20 10s. 6d. for 49, or 8s. 4d. per head; in Brecknock, £26 2s. for 80, or 5s. 10d. per head; and in Anglesey, £30 3s. for 140, or 4s. 3d. per head; while in Cardigan it is £2 2s. for 131, or only 4d. per head.

Take an individual union. Rarely do we find the cost for stimulants in any district bearing any fixed proportion to the expenditure in the adjoining districts. I am acquainted with the facts of many unions where this chaotic state of matters exists. Let one example suffice. There are five district medical officers in the parish. In the same period of time, one officer ordered two gallons of wine, half a gallon brandy, and one and a half pints gin for 488 cases; a second, a half gallon wine, and two and a half gallons brandy for 505; a third, three pints wine, and four gallons brandy for 580; and a fourth, three and a quarter gallons wine for 1,010. The fifth ordered neither wine, brandy, nor gin for 1,086 cases.

I am indebted to the Leinster Express of February 3rd, 1872, for a return presented to the board of the Mountmellick Union, showing the daily average number of persons relieved in ninety-one workhouses in Ireland during the year ending September 30th, 1871, the cost of wine, ale, and spirits in each union, with the average cost per head on the number relieved, and the number of deaths during the same period in eighty-four workhouses, with the proportion of deaths to the number relieved.

There was no expenditure at all for alcoholic stimulants in Glenties with a daily average of 120 inmates; in Longford, with 179 inmates; in Armagh, with 344; and in Newry, with 405.

At Lurgan the expenditure was £1 11s. 11d. for an average of 385 inmates, or three farthings each. At Mullingar £1 16s. 3d. was expended on an average of 327 persons, or 14d. each. At Carrickmacross there was £1 28. for 99 individuals, and at Newtownlinlavan, £1 9s. 6d. for 150, being at the rate of 24d. per head at each place. At Clougher there was £1 8s. for 125 paupers, and at Manorhamilton £1 6s. 4d. for 120, or 2s. 4d. per head, at each place. At Dawnboy there was laid out £1 11s. 5d. for 97, and at Gortin 16s. for 61, or 3½d. per head; at Milford £1 16s. for 95, or 4½d. each. At Dungannon there was £4 28. 5d. for 202, or 5d. each; and at Clonoe, £2 11s. for 212, or 5½d. At Innishowen (celebrated for its potheen) there was £4 7s. 6d. for 136, and at Omagh £6 15s. for 199, or 8d. each. At Tralee there was £15 18s. 2d. for 430, or 84d. each. At Ballyshannon there was £7 19s. 3d. for 179, and at Banbridge £9 4s. 10d. for 201, or 11½d. each.

Ballymasco, with 270 paupers, and Listowel, with 150, expended at the rate of 1s. for each pauper; Dundalk, with 280, at the rate of 18, 0½d.; Bailieborough, with 132, and Sligo, with 330, at 1s. 1d. each; Stranorlar, with 72, at 1s. 3d.; Mobile, with 175, at 1s. 7d.; Enniskillen, with 240, at 1s. 8d.; Ballyrothery, with 214, at 1s. 9½d.; Belfast, with 2,243, at 2s. 3d.; Newcastle, with 239, and Larne, with 243, at 2s. 6d.; Castleblaney, with 171, and Kilkee, with 98, at 2s. 7½d.; Thurles, with 235, and Lisnaskea, with 89, at 2s. 8d.; Castlederg, with 75, at 2s. 9d.; Ballyvaughan, with 150, at 2s. 10½d.; Strabane, with 235, at 2s. 11½d.; Boyle, with 273, at 3s. 8½d.; Cashel, with 572, at 3s. 2d.; Parmontown, with 275, at 3s. 3d.; Lismore, with 198, and Roscrea, with 167, at 3s. 5½d.; Donegal, with 76, at 3s. 6½d.;
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Ennis, with 290, at 3s. 7d.; Trina, with 249, and Youghal, with 293, at 3s. 8d.; Limerick, with 1,461, at 3s. 11d.; Clogheen, with 250, at 4s. 3d.; Lisburn, with 247, at 4s. 7d.; Irvineston, with 90, at 4s. 9d.; Letterkenny, with 104, at 4s. 10d.; Borrisokane, with 123, at 4s. 11d.; Athlone, with 305, and Tuam, with 279, at 5s.

At Tobercurry, with an average of 90 inmates, the rate was 5s. old. per head; at Cavan, with 260, at Clonmel, with 471, and at Waterford, with 840, it was 5s. 3d.; at Rathdrum, with 293, it was 5s. 5d.; at Enniscorthy, with 298, and at Granard, with 217, it was 5s. 7d.; at Tallamore, with 353, it was 5s. 7d.; Nenagh, with 394, cost 5s. 9d. per head; Clifden, with 135, cost 5s. 10d.; With 187, Edenderry cost 5s. 10d.; and with 82, Killala, 6s. 2d. At Drogheda, with 390, and at Scariff, with 172, the rate was 6s. 4d.; at Ardee, with 265, and at Mountmellick, with 371, the rate was 7s. 1d.; at Croom, with 220, and at Naas, with 279, and at Carrick-on-Suir, with 351, the rate was 7s. 3d.

Castlecomer, with 146, cost 7s. 6d. per head; Navan, with 200, cost 7s. 10d.; Ballymena, with 122, cost 8s. 4d.; Tulla, with 242, cost 8s. 4d. With 169, Celbridge spent at the rate of 8s. 6d.; with 369, Mallow, 8s. 10d.; with 210, Clonakilty, 8s. 11d.; with 1,933, North Dublin, 9s. 1d.; with 132, Castlebar, 10s. 1d. Kells, with 206, spent 12s. 6d. per head; with 153, Kilmacthomas, 13s.; with 948, Cork, 15s. 2d.; and with 144, Kanturk, 15s. 7d. At Rathkeale, with 220, and at Urlingford, with 169, the rate was 17s. 6d. per head; at Donoughmore, with 82, it was £1 5s. 10d.

The expenditure for stimulants in Scotland does not, in any particular workhouse, reach so high a rate as England or Ireland; but, on the other hand, neither does it go so low, there being no Scottish poorhouse where there is an utter absence of drink as in several in Ireland, or so very limited a consumption as is met with in some English parishes. In Scotland the cost ranges from 5d. per head of the total number relieved at Dumbar-

In Dumbarton, with 68 sick cases, the cost was 1s. 2½d. per case; with 609 in Edinburgh, it was 1s. 3½d.; with 2,449 in Glasgow, it was 1s. 9½d.; with 355 in Dunfermline, 3s.; with 62 in Aberdeen, 48.; with 144 in Liff and Benvie, 4s. 1½d.; with 139 in South Leith, 3s. 10d.; with 155 in Aberdeen, 48.; with 144 in Liff and Benvie, 4s. 1½d.; with 146 in Cunningham, 4s. 11½d.; with 15 in Upper Strathern, 4s. 11½d.; with 144 in Greenock, 5s.; with 129 in Paisley, 5s. 1½d.; with 4 in Kirkcudbright, 6s.; with 662 in Govan, 6s. 5½d.; with 450 in St. Cuthbert's, Edinburgh, 6s. 11½d.; with 857 in the Barony, Glasgow, 8s. 5½d.; with 20 in Old Macar, Aberdeen, 14s. 5½d.; with 20 in Kincardineshire, 20s. 5½d.; with 103 in the Abbey, Paisley, 20s. 9d.; with 7 in Nairn, 25s. 14d.; with 27 in Athole and Breadalbane, 25s. 9d.; and with 5 in Thurso, 48s. 7½d.

A return made to the House of Lords on June 11th, 1877 (referred to in the Report of the Select Committee of the Lords on Intemperance, ordered to be printed March 17th, 1879), shows the quantity and cost of ale, wine, and spirits consumed by indoor and outdoor paupers in each union in England and Wales during the year ending Michaelmas, 1876. A comparison between this and the return to the House of Commons in 1871 gives the following results, according to the British Medical Journal. In the year ending Michaelmas, 1871, some 10,125,050 pints of ale, wine and spirits, were consumed by both indoor and outdoor paupers, nine-tenths of this being for the former. In the year ending Michaelmas, 1876, the corresponding quantity was 6,064,005 pints, showing an absolute decrease of 3,161,045. As the mean of the number of paupers in 1871, was 1,029,628,
and in 1876, 730,131, the quantity per head in 1871 was 9 eight-tenths pints, and in 1876 was 9 five-tenths pints. In other words, a decrease of three-tenths of a pint per pauper. In 1871 the cost per head was 2s. 3d., and in 1876 it was 2s. 1½d., or a saving equal to 1½d. per pauper.

The expenditure on alcoholic stimulants in the metropolis in 1876 was 9s. 10d. for indoor, and 5½d. per head for outdoor paupers, whereas in the northern division it did not exceed 2s. 1½d. for the indoor, and 3d. for the outdoor. In Newcastle the cost was 1s. 4d. for the indoor and 5d. for the outdoor; and in Sunderland 7d. and 2d. respectively. The medical journals pertinently ask, in the language of the Lancet, if the paupers in our northern towns do not suffer from the small amount of alcoholic stimulants they receive, and if not, do the London paupers get an excessive allowance?

An interesting return, ordered to be printed by the House of Commons, on the motion of Mr. W. M. Torrens, shows the average weekly cost per head of the inmates of each metropolis workhouse for the year ending Lady-day, 1869; the average daily number of inmates, distinguishing males from females and boys and girls under sixteen; the number of deaths for the year ending Lady-day, 1869; and the amount expended in beer, wine, and spirits for each workhouse. In these thirty-seven workhouses the total expenditure was £28,250, of which £18,651 was paid for beer, £3,415 for wine, £21 for whisky, £2,664 for gin, and £3,466 for brandy. There were 21,761 inmates, so that the cost per head was £1 15s. 11½d. In Bethnal Green 1,121 inmates cost £1,081, while in Camberwell 518 cost £909, or only £172 less. Bermondsey spent £199 for 479 inmates, while Rotherhithe spent £385 for 219, or almost double the expense for less than one-half the number. If the former had been as extravagant as the latter the liquor bill for Bermondsey would have been £837 instead of £199. Strange to say, while whisky was consumed in but one workhouse, there was only one in which gin was not prescribed.

From a report presented by a special committee to the West Derby (Liverpool) guardians in 1871, we learn that on an average of two years ending March 31, 1871, in Liverpool workhouse proper, 19,592 cases were annually relieved at a charge for stimulants of £1,590, while in St. Marylebone it cost £2,050 for 3,333 admissions, or £600 more for 16,155 cases less. The value of this remarkable report was enhanced by a synopsis of the returns from twenty-one unions, showing the yearly cost of stimulants, and the rate of indoor mortality. These returns showed that nothing was expended on intoxicating drinks at Armagh, Lurgan, and Newry. The cost was 5d. per head at Edinburgh, 8d. at Preston, 10d. at Birmingham, 11d. at Crumpsall (Manchester), at Liverpool, 1s. 5d., at Cork, 1s. 6d., at Chorlton, 1s. 8d., at Aston, 1s. 9d., at Dublin, 2s. 4d., at Sheffield, 3s., at Islington 5s. 6d., at Lambeth, 5s. 9d., at St. Pancras 6s. 5d., at West Derby, 7s. 3d., and at Marylebone, 7s. 9d.

A second return from another special committee to the same board of guardians, ordered to be printed September, 1880, comprising a statement of the cost of stimulants and rate of mortality in thirty-six unions during the year ending March, 1880, reveals also startling discrepancies. Liverpool, with an average of 2,797 cases, expended £757 in stimulants; West Derby, on the other hand, with an average of 1,890 cases, expended £2,043. In other words, the latter, with 907 cases less, spent £1,286 more. Greenwich, with 4,821 cases, expended £227, while Brentford, with 357 cases, spent £315. That is to say, Brentford, with 4,464 cases less, spent £88 more. Can anything be more contradictory, confused, and bewildering?

There has been a considerable reduction in several unions in the amount of alcoholic drink prescribed for the sick poor during the last few years. This has probably arisen from the great interest that has been aroused throughout the country in the tempe-
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Rance movement generally, and specially from the prominent manner in which the question of stimulants in workhouses has been discussed by guardians, by medical officers, and by the public over the length and breadth of the United Kingdom. To this unmistakable and very general awakening to the great importance of this deeply-interesting subject I am informed on all hands that my paper, read to the Annual Metropolitan Conference of Poor-law Guardians, in 1876, under the presidency of the present Secretary for Ireland, Mr. Forster, has largely contributed.

That in many places there has been a decided reduction cannot be disputed. With reference to South Dublin, for example, the British Medical Journal, in December, 1877, recorded that during the preceding year the consumption of liquor in the workhouse had been much restricted, the restriction being brought about by attention being called to the very large annual expenditure in intoxicating stimulants, and that it had been announced at a recent meeting of the guardians that the expense incurred under this head for the above period had been reduced by over £1,000. Only a few weeks ago the newspapers stated that while the expense in South Dublin for strong drink to paupers that week was 115. 6d., in the corresponding week of 1879 it was as high as £8 7s. 3d. In a number of workhouses in England and Scotland there has also been a considerable decrease in the quantity of intoxicating drink ordered for the sick.

What results have followed from this reduction? At Wrexham Dr. Davies reported, on March 2nd, 1876, that he had ceased prescribing alcoholic drinks for three years, and that during the non-alcoholic period he had been enabled to treat disease with equal success with medicinal stimulants and nutritious diet. There was an increase in the cost of milk, beef-tea, and eggs, but after deducting this there still remained an annual saving to the ratepayers of £108. Both the doctor and the master reported that the discipline of the house had been greatly improved by the absence of stimulating drinks. The Local Government Board expressed themselves pleased with what had been done at Wrexham, and thought the system well worth a trial elsewhere. My authority is a copy of the correspondence between the guardians of St. George's Union, Middlesex, and the Wrexham guardians, ordered to be printed by the House of Commons, on the motion of Mr. John Talbot, on May 1st, 1880.

Dr. Webster, medical officer to St. George's, Hanover Square, London, in a report presented to the guardians, dated 28th May, 1879, states that on the opening of a new infirmary building he had reduced the consumption of intoxicating drinks very extensively. With an average of 559 inmates, the entire expense for such drinks throughout the twelve months was only £8 3s. 6d. Dr. Webster expresses his great satisfaction with the results, and records a marked improvement in the appetite of aged paupers following the withdrawal of the alcoholic liquor. Some thirty old bedridden women had been stimulated to activity by the discontinuance of their alcoholic stimulants.

In July, 1880, Mr. Fletcher Horne reported to the guardians of the Barnsley Union that he had decreased the expenditure on intoxicants from £29 to £9 per annum for spirits, from £24 to £4 for wine, and from £18 to £12 for beer, making a total decrease of £46 19s. He had proceeded tentatively, withdrawing alcohol from no patient receiving it, but withholding it from new admissions. His year's trial showed him that the patients liked it, and there was no deterioration of health.

At Helston the consumption of alcoholic liquor in the workhouse has been steadily lessened till now it is almost at zero. For a whole year, the drink bill, says the British Medical Journal, amounted to only 12s.; and for the past six months one pint of brandy, of the value of 4s., was all that was brought into the house. Even this was not used medicinally, but a portion of it was taken by attendants while engaged in nauseating work.
Stimulants in Workhouses—

The average number of inmates is above 150, and these enjoy good health, making due allowance for such aged and infirm people as are usually found in workhouses. Dr. Wearne, the medical officer, is congratulated by the editor on the success which has attended his management of this department.

What has been the result of the reduction of alcoholic stimuli on the mortality of the patients?

From one medical officer, and from one alone, has come forth the opinion that his diminishing the supply of intoxicating drinks to his pauper patients has increased the mortality. The solitary witness on this side of the question is Mr. Anderson, medical officer of the Walton (Liverpool) Workhouse. At a late meeting of the guardians this gentleman stated that he had tried administering alcohol only to urgent and severe cases, with the result that the diminution of the stimulant had increased the death-rate. The length of time the experiment had then been tried was eight weeks. During that period in 1880 the expenditure on alcohol was £1 17s. 7d., and the deaths were sixty-three. During the corresponding period of 1879, the expenditure was £122 7s. 8½d., with twenty-three deaths. In 1878 there were twenty-two deaths, with a charge for stimulants of £5 19s. Mr. Anderson believes also that convalescence has, from the same cause, been prolonged.

Unfortunately, though the medical officers who had previously given utterance to an opposite opinion appended to their reports the statistical data on which their opinion was based, we are not favoured with any returns from Walton. As the matter stands we have only a personal opinion. No statistics are forthcoming, so we trust that the Local Government Board—or, still better, Mr. Anderson himself, of his own accord—will produce the returns indispensable to the formation of an accurate conclusion. As the medical journals justly observe, Mr. Anderson's is so obviously a bare statement as to be without scientific value. We cannot be in a position to pronounce a sound judgment till we learn all about the nature of the fatal cases, the atmospheric conditions, the age, occupation, and habits of the deceased, the substitutes given in lieu of alcoholic stimuli, the particular form of drink supplied to all patients for whom stimulants were ordered, the prevalent diseases and rate of mortality in the surrounding district, the materials for a critical comparison of several years' complete returns of the disease and death-rate in the house, and the actual quantities of alcoholic drink given.

The few figures we are supplied with seem to me to point to the difference in the quantity of alcohol given not being the most potent factor in the causation of the increased rate of mortality. For instance, between 1878 and 1879 there was a difference of only one death, 22 having died in the former, and 23 in the latter year. Yet the consumption of liquor was less by £36 8s. in 1878 than in 1879.

In the absence of a full official return of the mortality for some time past in Walton Workhouse, I am compelled to fall back on the statement of facts by one of the guardians, given in the Liverpool Mercury of November 27th, 1880. This gentleman asserts, and he appeals to the official records for the corroboration of his statement, that from some cause or other, altogether apart from stimulants, the mortality during 1880 has been quite exceptional, bearing no comparison with 1879. In the five months ending August 31st, 1880, during which time stimulants were in full use, there was one death in 65 per month, against 1 in 89 per month during the corresponding period of 1879. For the four weeks preceding Mr. Anderson's experiment the deaths had reached 1 in 48. The guardian goes on to say that though in August and September there was much diarrhoea among the old people from the oppressive weather, though stimulants had been suddenly swept away without any substitute having been given in their place, the mortality fell from 1 in 48 to 1 in 67 during the four weeks succeeding those in which £70
worth of stimulants had been used. It was during the last four weeks of the non-alcoholic experiment that the death-rate rose, reaching as high as 1 in 43. Such are the guardian's aver-
ments. If alcohol were withdrawn from chronic cases and no substitute given for it, I would expect an in-
creased mortality; but I trust that all the facts will ere long be brought to light, in the hope that we may be able to eliminate all the other contributory factors, and thus learn the truth as to what influence the diminution of al-
coholic drink has exercised in the inter-
esting experiment at Walton, for the in-
stitution of which Mr. Anderson merits hearty commendation.

Meantime, it is only fair to give the follow-
ing evidence relating to the ear-
lier experience of the West Derby
guardians. They report that in the year ending December, 1871, the cost of stimulants was £1,062, with an average weekly number of inmates amounting to 1,027, and the propor-
tion of deaths 1 in 245; while in 1872, with an average weekly number of 888, the cost was £146, the mortality being reduced to 1 in 355. In the Mill Hill Road Hospital the average weekly number of inmates was 222, the cost of stimulants £978, and the death-rate 1 in 30, while in 1872, with an average of 308 inmates, the cost was £450, the mortality being only 1 in 60. The West Derby Special Committee of 1871 reported, from the medical relief book at Walton, that in the quarter ending September, 1871, under one medical officer, with an average of 118 patients, the average supply was half-a-pint of ale or porter to every other patient, and three-
quarters of a glass of wine or spirits to every patient every day. The deaths on this side of the house were twenty-
five. To the female side of the hospital, under another medical officer, averaging 154 patients, the supply averaged half-a-pint of ale or porter to every fourth patient, and a glass of wine or spirits to every sixth patient each day. The deaths on this side of the house were sixteen—less than one-
half of the male side in proportion to the population.

Whatever the soundness of Mr. Anderson's contention that the lessening of the amount of liquor increased the mortality, it cannot be denied that the evidence in favour of the converse proposition is very weighty. At Wrexham, the statement embodied in the parliamentary paper already re-
ferred to, shows a slight decrease in the rate of mortality on the non-alco-
holic plan. At St. George's, Hanover Square, the mortality with a minimum of alcohol is below the mean of the other metropolitan workhouses. At Barnsley the death-rate was lowered; and no one has suggested that either at South Dublin or Holton has the mortality been increased. In the Man-
chester workhouse hospitals Mr. Stein-
thal informs us that the cost of stimu-
lants has decreased from £458 in 1876 to £204 in 1880; and that, while during the three years preceding the change the deaths were one in twelve of the total number of inmates, dur-
ing the subsequent three years it has been one in thirteen and a-half.

The experience of my lamented friend, Dr. Simon Nicholls, of Long-
ford, who was the first medical officer to give the non-alcoholic system a fair trial in a workhouse, is very striking. He adopted this plan in the poorhouse at Longford for 18 years, and reported in 1866 that he had found it most suc-
cessful. Dr. Nicholls informed me that while in charge of the Longford work-
house fever hospital and infirmary, from their first opening in 1841 till the cholera epidemic of 1848, he prescribed alcoholic drinks as a medicine as freely as was the usual custom in other hospitals. He then, the mortality being 94 per cent., became convinced that these beverages were injurious, and entirely discontinued their use with the most satisfactory results, the mortality from cholera at once falling to 33 per cent. In consequence of Dr. Nicholls' publication of his poor-
law experience for about two and a-half years, the Poor Law Board sent over a medical inspector, who conducted a searching inquiry into the facts of the case, and confirmed the accuracy of the returns. Between 1st January, 1862, and 29th September,
1864, a period of nearly two and three-quarter years, the mortality from fever in 115 cases was 41 per cent., and during the year ending September, 1865, in 451 cases it was only 24 per cent.

Mr. Brittain, of Chester, has been medical officer to the Chester Union workhouse for thirty-nine years. For ten years previous to 1876 the whole sum expended for stimulants was £6 17s. 6d., the highest expenditure in any one year being £1 16s. 10d., and the lowest 18. Mr. Brittain says that he has had in the house all kinds of cases—typhus, typhoid, &c.—and his treatment has been to administer full quantities of nutritious food, beef tea, rice, milk, roast and boiled beef and mutton, &c., and when stimulants were required, camphor, ammonia, and similar medicinal remedies. He adds, he has never had any occasion to regret what he has done.

Dr. Collenette, of Guernsey, attended the patients of two large hospitals, one in town and the other in the country, and the paupers of a populous parish for thirty years, and never once found it necessary to prescribe either spirituous, vinous, or malt beverages.

The late Mr. Bennett, of Winterton, for forty years prescribed no alcoholic liquors; and in a serious epidemic of typhoid fever, in 500 cases he had a mortality of only 4 per cent.

During thirty-four years of Mr. Sleeman's tenure of office as a workhouse medical officer at Tavistock, the cost of stimulants ordered by him came to half a crown.

Dr. Dixon, coroner for South Oxfordshire, has held a poor-law appointment for some thirty years, and has not recommended intoxicating drink as a medicine for the last twenty years.

Many other parochial medical officers, of whom the late Dr. Morgan, of Dublin, and the late Dr. Fothergill, of Darlington, were not the least notable, extensively adopted the non-alcoholic system, and expressed the greatest satisfaction with the results.

In the ordinary treatment of the sick poor I have myself found alcoholic drinks of every kind almost wholly unnecessary; and I have the record of some 30,000 cases of disease of almost every kind that have been treated without the aid of these liquids. I have often seen such beverages, when prescribed medicinally, accelerate disease and retard convalescence, and I have occasionally, though very rarely, seen cases in which limited doses of alcohol have been of service. The occasions on which I have thought it right to give alcoholic drink have been so few, and the whole quantity I have prescribed has been so small, that my practice may fairly be claimed on the side of those who take strong ground against the prescription of intoxicants. At the same time, I am convinced there are cases in which alcohol is a valuable remedy—a remedy, however, which ought never to be given except after due deliberation, and which ought ever to be administered in accurately defined doses with the extreme of caution, and with a renewal of the prescription when its continuance is deemed advisable.

I am not sorry that Mr. Anderson has boldly expressed his convictions, for some ardent temperance spirits have rushed to extreme conclusions for which as yet they have no warrant in facts; and I trust that this difficult question, for it is a difficult one, will now be investigated in that calm and unprejudiced frame of mind by which alone we can hope to obtain a glimpse of the truth. During the discussion of my paper at the Social Science Congress at Liverpool, a distinguished and most estimable temperance reformer pressed me very hard for confirmation of the theory that the death-rate among the sick fell pari passu with the consumption of stimulants. Fortunately, though I was compelled to admit that the West Derby returns seemed at first sight to indicate a coincidence of this nature, I did not fall into the trap, but took my stand on the ground that no accurate opinion could be based on any such statistics. The ages and constitutions of the inmates not only vary from day to day in the same workhouse and are ever
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an uncertain quantity, but no two unions follow the same practice as to the class of persons admitted. In one locality either the district medical officer, or the guardians, or the relieving officer, or all these three, send nearly every case of illness into the house. In another locality hardly any cases are sent in. In a third there are only cases of serious illness admitted. In short, there are not two workhouses which afford a common basis for a true comparison. It is as essential to have a thorough knowledge of the differing procedure in the various workhouses and districts as to have full particulars of the age, the sex, the disease, the history, and condition of the inmates. Only when we are able to eliminate all the other contributory factors, if in any instance this can be accomplished, will we be in a position to determine the true influence of non-alcoholic treatment on the death-rate and on the period of convalescence.

In the present state of our knowledge I do not think we are warranted in going further than saying that the preponderance of evidence points to the probability that the absolute withdrawal or minimum prescription of alcoholic stimulants has no real influence in increasing the death-rate or protracting convalescence. For my own part, I incline to the belief that, ceteris paribus, the mortality is likely to be lowest where stimulants, though not absolutely interdicted, are resorted to only on rare occasions, in accurately defined doses, and for a temporary purpose, the medicine being discontinued the moment the occasion for its use has passed.

At the same time, I am bound in candour to confess that we know little or nothing about the truth. The Irish returns, when analysed, clearly show this, though at first sight the mortality seems in a measure to follow the ratio of stimulation. In twenty of the unions included in the Mountmellick inquiry, in which the cost of stimulants for the year did not exceed one shilling per head on the average number relieved, the mortality was 22½ per cent. In thirty unions in which the cost exceeded one shilling, but did not exceed five shillings, the mortality was 22½ per cent. In thirty-four unions, in which the cost exceeded five shillings per head, the mortality was 25 per cent.

That no argument in favour of the non-alcoholic or mildly alcoholic system can fairly be based on these generalisations, will be clearly seen from the following analysis of the returns. Where the deaths show a percentage to the average number relieved of 8 per cent. the cost of stimulants per head on the average number relieved was 2s. 7d.; where the deaths were 10½ per cent. it was 3s.; where they were 12 per cent. it was 8s. 4½d.; where they were 18 per cent. it was £1 5s. 10d. Where the deaths were 20½ per cent. the cost was 2d.; where they were 21 per cent. it was 1s. 1d.; where they were 28 per cent. it was 3½d.; where the deaths were 30 per cent. the cost was 5½d.!! where they were 35½ per cent. it was 2d.!!

In one union, with an average death-rate of 12½ per cent., the expenditure was 6s. 4d. per head. In a second, with the same death-rate, the expenditure was 2s. 6d. In a third, with yet the same death-rate, the expenditure was 17s. 6d. Again, while £1 5s. 10d. yielded a death-rate of only 18 per cent., no alcohol at all gave a mortality of 19 per cent. in one workhouse (!) and 28 per cent. in another!!

English returns gave similar evidence. From the West Derby special committee's report of 1871, I find that the average cost of stimulants in Marylebone, on an average of two years ending March, 1871, was at the rate of 7s. 9d., and the mortality one in ten and a half. In St. Pancras the cost was 6s. 5d., and the mortality one in thirteen; in Lambeth, 5s. 9d., and one in seventeen; in Leeds, 11½d., and one in eighteen; in Manchester, 11d., and one in thirty-eight; in Birmingham, 10d., and one in twenty; in Edinburgh, 5d., and one in thirty; in Armagh, nothing, and one in twenty-one and a-half; in Lurgan there was no charge for liquor, and the mortality was one in twenty-six; in Newbury no strong drink was supplied,
and the deaths were one in thirty-eighth.

From the more recent returns of the second special committee of the West Derby Guardians, that of September, 1880, I gather that during the preceding twelve months, Marylebone, with an alcoholic expenditure per head of 6s. 1d., had almost the same death-rate as Walton, with an expenditure three and a half times as great, viz., £1 18. 7d. The deaths in Walton were 1 in 3'86, and in Marylebone 1 in 3'83. Sunderland, with an expenditure of 21d. per head, had a death-rate of 1 in 4'87, while the Isle of Thanet, with an expenditure of 11s. 9d., had no more deaths than 1 in 4'79. In other words, there is little difference in the mortality, though the latter union spent fifty-six times as large a sum in intoxicating drink as the former! Sheffield, spending 25'7d. per head, has a death-rate of 1 in 3'06, while Glasgow, spending 48. per head, has a death-rate of 1 in 3'07, or nearly identical. Liverpool, spending 5s. 5d., has one death in 2'37, a much higher rate of mortality than Paddington (1 in 2'37 against 1 in 3'36), spending nearly four times as much.

Scotland has equally contradictory and conflicting testimony. In 1877 the poorhouse of St. Cuthbert, Edinburgh, spending only 21d. per head on alcohol, had a death-rate of 27'85 per cent., while Peebles, though spending £3 3s. 10½d. per head, had a death-rate of 22'4 per cent. That is to say, though spending 552 times as much on alcohol as the former, it had some 5 per cent. less mortality!! Moray, with an expenditure of 38. per head as against the £3 13s. 10½d. of Peebles, had the same death-rate, viz., 22'4 per cent. The Abbey, Paisley, while paying more than five times as much for stimulants as Morayshire—16s. 2d. against 38. had a mortality of only one-fourth of the rate of the latter.

I was deeply grieved some time ago on reading the report of a statement publicly made by an excellent abstaining medical officer, for whom I have a high regard. This gentleman presented an abstract of his parochial cases treated without alcohol, and compared his own results with those of his predecessor, who prescribed alcohol, showing a considerable decrease in the death-rate under the non-alcoholic régime. A more mature experience will prove that all such comparisons are valueless and very apt to be misleading, and that no trustworthy conclusions can be drawn from them. I have already pointed out that we must eliminate all the other factors contributing to the mortality, and demonstrate that the age, sex, disease, occupation, surrounding circumstances, and state of health of the groups compared, fairly correspond before we are justified in the claim to have formed a sound judgment. We ought to be very careful not to rush to a rash and unwarranted conclusion ourselves, and we cannot be too chary in making assertions that cannot be borne out by a searching and critical scrutiny. In the present absence of definite information, no one is in a position to dogmatise on the subject. All we can do meanwhile is to endeavour to add to the mass of reliable statistical data now rapidly accumulating, in the hope that the time may one day arrive when sufficient thoroughly sifted material will have been gathered to enable vital statisticians to establish unimpeachable general laws. That time is not yet.

As a typical exemplification of the fallacy of drawing a dogmatic conclusion from defective data, let me adduce the interesting statement of the master of the Eton Workhouse in a recent number of the Local Government Board Chronicle. The cost of ale, brandy, gin, and wine for the sick at Eton for the five years, 1871-75, was £541. The cost of the same liquors for the succeeding five years, 1876-80, was £63. The number of deaths during the first quinquenniad was 168, and during the second 146. Whereupon the worthy master rushes to the conclusion that alcoholic drinks were not beneficial to the health of the sick inmates. Let us see what ground his returns afford for such an assertion. The number of inmates for each year is not given, so there is nothing to show what the percentage of mortality
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really was. The figures are thus value-
less. Even if all the usual particulars were
given, and it were shown that the rate of mortality fell simultane-
ously with the consumption of intoxi-
cating drinks, till we are favoured with
the age of each pauper, his state of
health and other circumstances con-
cerning him, in addition to the nature
and duration of the disease which
killed him, we would be in no position
to form a true opinion. Imperfect and
useless for the purposes of scientific
accuracy as this Eton group of statis-
tics is, an analysis of them as pre-
sented to us does not bear out the
master’s statement. It is true that if
we take the sum of the deaths in each
quinquenniud, we have an absolute
(we have no means of knowing if it is
a proportionate) decrease, in the whole
number, of twenty-two deaths during the
second quinquenniad, when there
was a great diminution of the quan-
ty of liquor ordered. But any infer-
ence from this crude generalization
would be unwarranted and misleading,
for, on looking into the master’s table
of the deaths in each year, I find that
the year in which by far the smallest
amount of money was spent in in-
toxicants, in the second quinquen-
niad, was the very year in which
there was the greatest number of
deaths. Further, taking the whole
ten years, while there were thirty-
seven deaths with £7 spent during
the year on drink, there were only
three deaths more (forty) when twenty
times that amount (£140) was the
outlay!! Again, when the annual
alcoholic expenditure was £94 there
were twenty-seven deaths during the
twelve months, while when the annual
expenditure was only £14 there were
actually two more deaths (twenty
nine)!!

There can be little difference of
opinion as to the propriety of limiting
the supply of intoxicating liquids to the
smallest consumption compatible with
safety, and no one can sympathise
more warmly than I do with every
guardian who is desirous to reduce
the expenditure on such articles.
That I have done all in my power
to arouse public interest in this very
important question renders it all the
more incumbent on me to insist on
zeal being tempered with discretion.
Time and again newspapers have been
sent to me from different parts of the
kingdom, in whose columns I have
read with pain most misleading and
incorrect statements regarding the
practice of certain medical men. In
the excess of their zeal some enthu-
siastic guardians have gravely in-
formed their colleagues that their
own local medical officers were behind
the age if they did not exclude alco-
holics from their practice, an example
set “in London by Sir William Gull,
Sir Henry Thompson, Dr. Benjamin
Richardson, and Dr. Norman Kerr.”
That the statement is true of Dr.
Richardson I know, but it is not
true of the others. No one would be
more surprised than would either of
the two first mentioned gentlemen to
hear that he had discarded alcoholic
drinks from his practice; and though
I very rarely prescribe these potent
remedies, and then only with a tem-
porary object and in definite doses, I
emphatically deny the soft impeach-
ment. I would no more dream of
proscribing alcohol than I would of
proscribing prussic acid.

It will also be seen, from an able
article on “Alcohol as an Antispas-
motic,” in the Medical Temperance
Journal for January, 1881, that Dr.
Richardson himself, in certain cases,
recommends considerable doses of
alcohol in combination with other
medicinal substances.

There are some medical men who
concede the prescription of alcohol as
alcohol, ethylc or methylic, but object
to it in the form of brandy or wine.
With this view I have much symp-
athy, and, wherever practicable,
order proof spirit in cinnamon water,
with the addition of other aromatics.
But I have met with cases in which
no preparation of alcohol was retained
but old mellow brandy, or other alco-
holic liquor; and though I never
resort to the wine and the spirit
bottle if I can find as satisfactory a
remedial agent elsewhere, I would be
very sorry indeed not to have them at
command. Let me entreat our ardent
temperance friends, of whose unselfishness and devotion I cannot find words adequately to express my admiration, to be on their guard lest they unintentionally give to professional utterances a meaning these were never intended to convey, and thus hinder, instead of forward, the great cause whose interests we all have so much at heart.

In their zeal to put an end to the many evils which undoubtedly arise from the presence of intoxicating drink in workhouses, some boards of guardians have hastily adopted measures of doubtful, and even of illegal, procedure. One board, for example, when a new medical officer was about to be appointed, induced him to enter into a contract to supply all the stimulants he should deem it necessary to prescribe, for the sum of £30 per annum. The Local Government Board at once wisely declined to approve of this extraordinary compact, and the resolution of the guardians was therefore rescinded. It would, indeed, be an anomaly if, at the very time when the medical profession is becoming more alive to its dignity, and gradually severing, as far as practicable, profit by the sale of drugs from legitimate fees for medical advice, Government medical officers were to contract to furnish the medicines which intoxicates. In the interests of the pauper it is desirable that his medical attendant should have no pecuniary interest in the quality or the quantity of the remedies employed. The practice of no medical man ought to be exposed to the risk of being even unconsciously influenced by considerations of personal emolument from the medicines taken.

Again, another board of guardians went so far as to pass the following resolution:—"That the large amount of alcoholic stimulants supplied for the use of the sick inmates of this union is unwise; that it is unjust to the ratepayers; and that, subject to the approval of the Local Government Board, such stimulants shall be discontinued for the future." The Local Government Board, I need hardly say, withheld their approval. One official, and one alone, is responsible for the medical treatment of the patients. That official is the medical officer. So soon as his hands are tied by the prohibition of any of the medicinal agents he deems needful, just so soon will his responsibility for the treatment of his patients cease. There can be no divided responsibility. So long as the medical officer has sole direction of the medical care of the sick, just so long will the pauper have fair play. The moment the doctor's resources are crippled, the responsibility is shared between him and the party curbing him, and between the two stools the pauper cannot fail to fall to the ground. Hence the Local Government Board did right in declining to limit the medical officer's choice of remedial agents.

A strong effort has been made in different parts of Ireland to have ordinary alcoholic drinks included under the denomination of drugs, to be supplied to the patients by the dispenser, like any other therapeutical remedy. Were the liquor always given as part of a not too pleasant and fascinating medicinal mixture, this might be a benefit to the sick poor, inasmuch as they would not know they were getting an intoxicant, and thus they would not be so liable to be confirmed in their strong prejudice in favour of alcohol as a beverage. But, unfortunately, this was not the aim of the agitation, the object of which was, confessedly, to save the rates, by securing, if possible, the cost from the State under the head of drugs. At present, the whole expense for stimulants is borne by the locality. I fear that, if this agitation had been successful, the consumption of stimulating liquor in our workhouses would have been greater than ever.

The Local Government Board have declined, as indeed was to have been expected, to comply with this request to sanction an arrangement by which all stimulants used in workhouse hospitals might be regarded as drugs, be placed in charge of the dispenser for administration under the orders of the medical officers, and be charged, like other medicines, on the Parlia
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mentary grant. The issue of stimulants, the Local Government Board stated in their reply, was already restricted to cases in which the medical officer might give directions in writing for their use in individual cases, and no part of the costs of stimulants such as wines or spirits could be defrayed out of the Parliamentary grant for medical purposes.

The public, in many localities, are taking great interest in the consideration of this question of workhouse stimulants, and it is useless, if indeed it were right, to attempt to stifle the controversy. The wisest and most prudent course is to direct the popular agitation into such a channel as will effect the greatest amount of good. Now that I have pointed out what all interested in this subject ought to avoid, I am bound to indicate what seems to me to be the proper method of procedure. First, recognise the medical officer as the sole arbiter of what medicines his patients ought to receive. Starting with this as an axiom, no right-thinking person can possibly object to either the guardians or the general public using every courteous means of presenting to the medical officer a fair statement of the moral risks inseparable from the indiscriminate and profuse prescription of alcoholic liquors, and of the experience of an increasing number of his colleagues in the Poor-law service, who have made a genuine trial of either the complete exclusion of these drinks, or a very great diminution of their consumption. No intelligent and fair-minded member of the medical profession can take offence at any respectful request for his candid perusal of scientific and thoughtful treatises on the influence of alcoholic drink on the individual and on society at large. Guardians may do much, and yet duly respect the office and dignity of their medical officer. I am acquainted with parishes where a respectful and polite request from the board to the medical officer to give the matter his best consideration in the interests of the poor and of the general community, has resulted in a thorough study of the question on his part, and the consequent institution of a legitimate and successful experiment.

It cannot be denied that medical officers have sometimes laid themselves open to criticism by lavish and indefensible prescription of intoxicants. For instance, in a parish in Ireland in 1873, a district medical officer prescribed creature comforts to an outdoor pauper to the extent of £1 6s. a week. During the discussion of the case at a meeting of the Board of Guardians, the doctor recommended the addition to the grant of £1 6s. of from fourteen to twenty glasses of brandy weekly. The Medical Press and Circular very properly condemns this indiscriminate prescription of liquor as a most unjustifiable use of authority, and, in the interest of poor-law medical officers, a subject for regret and deprecation.

Whenever intoxicating drink is prescribed to any pauper, the medical officer should scrupulously take care to write the case off the books, or in some way discontinue the allowance so soon as the end for which the liquor has been ordered has been gained. Otherwise the alcoholic remedy, once ordered, is apt to be continued indefinitely. By way of example, let me refer to the statement made by the medical officer of an extensive London workhouse in the spring of 1873. Attention was called to the enormous consumption of brandy, and the medical officer stated in explanation that the brandy, when ordered by him, was continued to each patient longer than he had intended in consequence of an oversight on his part in not stating in the indoor medical book when the brandy so ordered was to cease.

Not infrequently the friends consume the brandy meant for the outdoor sick pauper. I was called once to a district parochial case in another district, where the sick man, his wife, and his wife's sister were all under the influence of the liquor which was ordered medicinally for the sick man alone. Such cases are by no means uncommon. It would be a decided gain if, when brandy or any other alcoholic stimulant is ordered by the
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medical officer, the liquor were given in combination with some medicinal bitter, and were supplied to the patient in a mixture as a medicine, and not as an ordinary beverage. By many medical officers this course is followed. The only caution requisite here is to avoid adding to the attractiveness of the liquor, as has been done in one case with which I am acquainted, the spirit being made more palatable than ever by the addition of cinnamon water.

When I believe a powerful and prompt stimulant to be urgently needed, I hesitate to order wine or spirit (for therapeutic reasons) mainly because I have no confidence in the composition and strength of the liquid, fermented wine, above all other drinks, is of very uncertain alcoholic potency. Ordinary port and sherry, for example, range from about 30 to 60 per cent. of proof spirits. On such uncertain and variable compounds the enlightened medical practitioner can place little reliance. Then what is sold as wine is often a mere chemical concoction, in which the juice of the grape is either conspicuous by its absence, or is present only in a homoeopathic proportion. When pressed by clergymen and wealthy district visitors to order port wine in fever to the sick poor, I have told them that if they would place at my disposal some of their own genuine blue seal at 66s. a dozen, I would seriously think of it; but with the common port of commerce, such a prescription would be a mockery, and reliance on such a sham endanger the suffering sick one's life. For these reasons, from a scientific point of view, I prefer, where stimulants are indicated, to rely either on alcoholic tinctures, such as spirit, ammon. aromat., and spirit chloroform, or on spirit. vini rectificat. and tenuior, in combination with cloves, cardamoms, cinnamon, or other aromatic. By this method I know what I am prescribing, and I can prescribe the exact dose which seems to me called for. From a moral standpoint, too, I hesitate before ordering an intoxicating beverage. The bulk of our pauperism springs from drinking, and a large proportion of the diseases we are called upon to treat among the poor arises, directly or indirectly, from indulgence in drink. When we order them brandy, or wine, or beer, in illness these wretched inebriates are delighted. Not only are their prejudices on behalf of their destroyer confirmed, but unhappily fuel is added to the fire already raging within them, and their craving for alcohol is strengthened and intensified.

Though probably if I had been in his place I would have prescribed even a smaller quantity of stimulant than he has, it seems to me that the true spirit in which to order stimulating drinks is well exemplified in a remarkably ingenuous and candid letter in the Belfast News Letter from the medical officer of the Coleraine Workhouse, Dr. Carson says that the medical officer of a workhouse occupies a responsible post. He must do everything he can to save life, and, as far as consistent with this, save the taxes of the people. The plan he adopts as most satisfactory to his conscience is this: Never to prescribe ale, porter, wine or brandy, but to order malt whisky as the best of stimulants. He never gives stimulants as a mere cordial or luxury to nurses or any one else, old or young; but he gave whisky to all whose lives he believed it would assist in saving, and to none others. The number of patients on his sick list daily ran from forty-five to ninety, according to the season of the year, and he found, from a return made out for him by the clerk, that the quantity of whisky prescribed during two years ending September, 1879, was just forty-five quarts altogether. Dr. Carson adds that he has been a teetotaler since boyhood, and prescribes stimulants on principle, not from taste.

If we carry out the experiment in Dr. Carson’s spirit, we will ere long be justified in coming to some definite conclusion as to the true usefulness of alcohol and alcoholic drinks in the treatment of the sick poor. Mr. Dolan, of Halifax, justly says that, with the ample material at our command, fur-
nished by the numerous union infirmaries in England, it must be possible to arrive at an approximate and truthful estimate of the real value of alcohol in the treatment of pauper patients.

May I venture to appeal to my colleagues in the Poor Law service throughout the kingdom to give the whole subject serious and impartial attention? That evils, many and grievous, arise from the presence of strong drink in our workhouses, no one will venture to deny. The entrusting of a night supply of intoxicating liquor to nurses and attendants, in the event of a sudden call for a prompt stimulant, especially among the aged and infirm, is a temptation too strong always to be resisted. There are stimulants which would answer the purpose as well, which would not present such temptations to abuse. A comprehensive and exhaustive description of non-alcoholic stimulants has been prepared for the South Dublin guardians by the chairman of their Stimulant Committee, the experienced and judicious Dr. Ewery Kennedy.

Nothing mars the good conduct and discipline of a workhouse as does the presence of intoxicants. At a recent meeting of the Shoreditch Guardians the master reported the house to be so full that he was obliged to use the receiving wards to accommodate paupers when they returned to the house the worse for liquor. To see indoor paupers, in the garb of the house, intoxicated in the streets of London, is no uncommon sight. The shocking prevalence of drunkenness among the inmates on their return in the evening of their day for leave of absence is well known. The records of our police-courts amply attest the existence of this deplorable state of things. In the Holborn Workhouse lately a woman represented to the doctor that she was very ill, and was allowed a certain quantity of brandy. It was afterwards discovered that immediately the allowance was given to her she began to sell it to the other patients in the ward. So impressed were the Lords' Committee with this aspect of stimulants in the workhouse question, that they inserted the following in their report:—"The supply of alcoholic drinks to the poor, whether given in workhouses or to outdoor poor (except in cases in which it is medicinally indispensable), has a tendency to create a taste for stimulants in those who perhaps would not otherwise have acquired it, and it leads ignorant people to conclude that as wine and spirits are prescribed for them by the doctor, and supplied by the relieving officer, they must be a needful remedy in most cases of illness, and thus the habit of flying to the bottle for relief is created, and the groundwork is laid for habits of indulgence and intemperance, which would otherwise never have been acquired."

Such being the evils so apt to flow from the presence of intoxicating drink in workhouses and infirmaries, and as it is an acknowledged fact that the great majority of our pauperism springs from intemperance, would it not be a most excellent consummation if the ordinary profusion of these beverages were almost, if not altogether, dispensed with? There is, as we have seen, reasonable ground to believe that the health of the poor would not suffer, and that the mortality would not be increased. It is certain that the morale would be improved, that many painful scenes would be prevented, and that discipline would much more easily and effectively be enforced. I ask not for the absolute exclusion of alcohol, but in the interest of the poor themselves, of the ratepayers, and of the community at large, I do earnestly entreat my colleagues to steadfastly set themselves to inquire whether they can conscientiously try the experiment of treating the many afflicted ones under their care with the smallest amount of alcohol compatible with safety.
THE ANNUAL BREAKFAST TO MEMBERS OF THE BRITISH MEDICAL ASSOCIATION.

The British Medical Association held its annual meeting this year at Ryde, and on Thursday morning, 11th August, the National Temperance League, as has been its custom for some thirteen years past, invited the members to breakfast, and about 120 responded. The invitation card was endorsed by the Rev. Canon Connor and Mr. W. B. Robinson, Vice-Presidents of the National Temperance League, and by Mr. W. R. Selway, Vice-Chairman of the Executive Committee of the League. The breakfast took place in the Victoria Rooms, Ryde.

The Rev. Canon Connor presided, and the first speaker was Mr. B. Barrow, F.R.C.S., J.P., President of the British Medical Association, who said: Mr. President, I am extremely glad to see you in the position you occupy, but at the same time I must express the wish that your place had been filled by the President of this Association, Mr. Bowly, for whom I can assure you, sir, both I and all the members of this Association feel a very great respect. There is no gentleman I have ever met who is, in my opinion, more fit to preside over a meeting like this than Mr. Bowly, and for this reason—that Mr. Bowly is a temperate man—temperate in all things. He does not abuse, nor does he call in question the action of other men who do not think exactly as he does. I am quite convinced, having for a great number of years taken a deep—as I trust it will be a lasting—interest in the temperance cause, having watched it carefully, and having seen the results of small as well as of large meetings, I have come to the conclusion that it is only by temperance and temperate language that associations of this kind, and the men connected with them, can be led to become temperate if at any time they have been in any degree intemperate in any of their actions. I am quite sure that violence of language and uncharitableness of expression towards those who do not think exactly as we may do, or others may do, is not the true way of leading men into the right path. I trust, therefore, that the profession may escape the stigma which is too often levelled at them, that they are promoters of intemperance. I stand here, not as a teetotaler, not as a man pledged to temperance in any shape or form, but, I trust, strengthened by Providence to feel and act temperately in all things in this life. Gentlemen, when I look around this table, and I see the faces and also the noses of those around me I am quite certain that you are one and all temperate to the highest possible degree. I have seen on more than one occasion at meetings of this sort the nasal organ present characteristics which it had no right to if its possessor had been temperate. Today, sir, I can assure you that I see a vast improvement in that organ, and I am quite certain that meetings of this sort are good, be our opinions what they may. I am always extremely glad to attend them, to show sympathy with a cause which I believe, and which I know, to be fraught with good. I admire any man, and I admire every man, who holds to his own convictions, and who preaches that which he believes to be right; but at the same time I do think that those men who preach and who speak as my friend Mr. Bowly does—always temperately—speak from the fulness of their heart. They speak what they believe to be true and to be right, and therefore they must always give me and give you permission to speak and to do what we think right, although we do not always quite believe in all that they may say to us upon occasions like this. Gentlemen, I am here this morning to sympathise with you and with those gentlemen who believe in total abstinence (although I don’t approve of total abstinence, nor do I approve of your pledge-takers), and therefore I am here to sympathise with your chairman, who does believe that total abstinence is a good thing—is
the thing which men ought, to a great extent, to follow. I respect him for
upholding his opinions and acting on
them, but at the same time I ask that
the same privilege may be allowed to
us when we come to them to hold our
opinions steadfastly and firmly as re-
gards our views on temperance. I wish
those who are here who are pledged
tee-totalers, and our chairman, to believe
that the medical profession have set,
and are day by day setting, their faces
as strongly as men can do, pledged or
unpledged, against people tippling and
taking more than is absolutely good
for them. I believe we are doing
this as a profession more strongly
than any other profession, or any
other class of men. I will detain you
no longer, for I know my friend Dr.
Carpenter is anxious to address you
before we have to depart from here on
other business. I will thank you for
your kind attention, and assure you
that it will always give me great
pleasure to be present at gatherings
of this kind; and believe me that I
sympathise with those of you who do
not think exactly as I do.

Dr. Alfred Carpenter, of Croy-
don (President of Council): Mr. Pre-
sident and Gentlemen. There is one
point upon which I am quite sure the
President of the Association will agree
with me, and that is that total abstin-
ence is the very best thing that can
be advised for children. I do not
think that he will hesitate for one
moment on that line, but will agree
with me most positively that, as far
as children are concerned in health,
that to give to them daily doses of
alcoholic drinks is positively wrong.

Mr. Barrow: Certainly.

Dr. Carpenter: I think that on
that point the whole profession is
agreed. I never heard yet a medical
man get up and advocate the daily
administration of doses of alcoholic
liquor to children. Then comes the
question—Where are we to draw the
line? Where are we to say that
children have reached that time of life
at which the administration of daily
doses of alcoholic liquors becomes a
right and natural thing? I do not
believe there is that line, and I am
quite of the opinion that provided
children are brought up as total ab-
stainers there is no necessity whatever
for them ever to become addicted to
the daily use of intoxicating liquors.
I think upon that point there will be
no difference of opinion amongst all
medical men. I think now we can
say most assuredly that, provided
men have never touched intoxicating
liquors, they never become addicted
to their use, and there is no reason
why they should take them at all. I
have come to that opinion from per-
sonal experience. I have on many
occasions experimented upon myself,
and the result has been that I have
come to the conclusion that I am far
healthier, far more comfortable, far
happier in my own existence, while
abjuring intoxicating liquors than
when I took them, though I am not a
pledged total abstainer. I do not
take them habitually, and I feel and
know that I am far better as the result
of such abstinence. I will give you
an illustration of that. In connection
with our last Cambridge Meeting I
had been doing a large amount of
sedentary work, and one's waistcoat
was getting tighter than one liked it
to be. After that meeting was over I
went to Cumberland, amongst the hills,
and determined that I would set my-
self a task. I went to the top of every
one of the Cumberland hills that is
more than 2,500 feet high. Every
other day I did one of those hills, and
took two of my sons with me. There
was no beer to be had on the tops of
those mountains, and I determined
that I would try whether I could not
achieve my task without touching
intoxicating liquor at all. I did it,
but at the expense of flesh, because
when the month was up I was my
natural girth. I had got rid of a large
quantity of fatty matter, and after
going to the top of Helvellyn, and
Skawfell, and Skiddaw, &c., I was
not one bit tired, and I did not
take one single drop of any kind of
intoxicating liquor. I had two sons
with me. One, like myself, never
touched any kind of alcoholic liquor.
The other, who had had a little expe-
rience at Cambridge, liked his beer,
Annual Breakfast to Members of the

and I was not going to tell him to give it up—I never draw the chain so tight as that; but I found the elder one, who was accustomed to take his beer every day, was unable to get to the top of either Helvellyn or Skiddaw. There was the experience of two of the same family, the one never touching alcoholic liquors at all, and the other accustomed to take 1 or 1½ pint of beer a day, yet not having the vigour, the go, or the ability to withstand fatigue in the same way the water-drinker did. I am certain from observation that it is far more conducive to strength, to energy, to ability, to overcome fatigue if you habitually let intoxicating liquors alone, and accustom yourselves to do without them. Then why should we take them? Why should you get up in the morning with headache, with indigestion, and those changes of constitution which we know do arise from the habitual use of alcoholic liquors, and subject yourselves to them, when undoubtedly, if you will only go on for a little while, and get over the stile, you will overcome those evils that you think arise from not taking them, and you will find yourselves happier and better men? I am just going to say one word with regard to the treatment of disease, more particularly as I see here a considerable number of young medical men. Let them dismiss from their minds the idea that the non-recommendation of these things as remedies for ordinary complaints can do other than good service. They may help forward the temperance cause, and also be doing more good to their patients by far than by advising the habitual use of intoxicating liquors. With regard to the treatment of disease in its acute stage I will not say anything except this, that liquors of a certain kind are undoubtedly valuable medicines, but they are dangerous things to be used by unskilled hands. If a child has placed in his hands certain sharp instruments known to us we know for certain he will cut himself. I am sure alcoholic liquor is a sharp instrument, and if it be played with by individuals without medical advice they will cut themselves undoubtedly, and if it be habitually ordered by the doctor it will be supposed that it is of great service and that it is necessary, and they will cut themselves in that way. I therefore urge my friends not to let that be in their prescriptions as a daily dose of something that is to be gone on with, but that they should when they do advise the use of alcoholic liquors limit their application, and take care to say to their patients that this is given as a medicine, and that it must be left off when the necessity has passed away. This is the more necessary seeing that medical men are very frequently abused for ordering these drugs. If we order doses of castor oil or rhubarb it is not to be supposed that the patients are to go on taking them every day of their lives, and why should another powerful medicine—which is powerful in its proper use—alcohol, be treated differently. If our younger practitioners will be careful to follow the advice I now give them they will save many and many a person from going in a wrong direction. I am satisfied, from observation extending over thirty years, that we do occasionally (I won't say how often) lay the foundation for those habits which develop themselves later on in life, and lead persons if not to drunkenness, at any rate to the formation of disease in different organs of the body. It is an established fact, which cannot be gainsaid, that the tendency of alcohol when taken into the body is to prevent the removal of matters which should be oxidised and got rid of—to harden them and so to prevent them being removed by the different channels which act as purifiers of the body and should render their removal easy. That material becomes deposited in different organs, remains in them and lays the foundations of those diseases which carry people off who never have been guilty of excess. That is a reason why in ordering stimulants they should be ordered only as medicines, and why we should set ourselves steadily against the habitual daily use of intoxicating liquors under the idea of their being necessaries of life. I am always
pleased whenever I can to have an opportunity of giving my own experience in connection with this matter before my medical brethren, because I know it is a difficult subject, and it is also a dangerous ground sometimes for young men to take who are determined that they will be total abstainers; but I hope the day is coming (and we are upon its threshold) when a medical man may take that course and not risk his position in life. In past years, as I have felt, it has been a serious injury to a medical man to take the course I have done with regard to the administration of intoxicating liquors, because there is no doubt that those that like them won't go to and consult the doctor who never orders them. On the other hand, a very large number of persons who know that they are too fond of liquor will rather go to the doctor who doesn't order it than to one who does. There is an innate principle in our constitution, that it is dangerous in such a case to go to the doctor who is fond of his glass. I ask you to consider that point and bear it in mind, and as the result you will find you have continued in health many persons who but for your advice would certainly have gone to an early grave. I have seen two men suffering from the same condition of brain disease, which most people thought had originated from overwork. They both had used alcohol freely, and the one continued it, but the other let it alone. The man who used alcohol broke down, it is supposed through overwork, but in reality from over-stimulation. The one who gave it up has got rid of the cerebral condition which was his bane, and has found his health restored. The one has gone to the grave suffering from what is called softening of the brain, or some form of paralysis; the other has recovered and can go on with his work; for I am satisfied that regular work, properly conducted, never caused a man to break down. I make these observations, not desiring to force upon others the views I hold, and being careful not to condemn men who do not agree with me.

The Chairman: I beg to express to you the very great responsibility I feel in attempting to supply the place of the absent President. I likewise wish to express to you the great honour I feel has been conferred upon me in being selected to supply that place, in consequence of the impossi-
bility of Mr. Bowly being present on this occasion. There is, I think you will permit me to say, a suitability in a person occupying the position I do, and being connected with the clerical profession, in taking the chair upon the present occasion. Gentlemen, the profession which I here, as it were, bring before you as a clergyman, and your profession have been united for years and for centuries. Our professions may well be called 'sister professions.' You will recollect that in the very earliest days of our Christi-
anity there were two men who were closely allied in their work, which they had so very much at heart. There was the great Preacher and Propagator of Christianity in the person of St. Paul; there was the great Biographer and Recorder of those startling events in the early days of Christianity—viz., the beloved physician, St. Luke. These two men worked hand in hand; the one declaring the grand message of his Master, the other giving the strength of his influence and his experience as a man belonging to your profession, and likewise recording those great historical truths which are our greatest comfort and the mainstay on our behalf as Christian people. Then, I think, there is somewhat of a suitability that we of the clerical profession should meet you of the medical profession; for surely whatever we may do we attempt to go hand in hand. We meet together in private houses; we take our parts in the most solemn scenes; we are, as it were, called into houses and places for the purpose of administering relief which I trust I shall always be able to administer and you on your parts, and therefore we are continually meeting, and it is of the very greatest consequence that in this great cause we should take counsel together. Standing apart often begets estrangement, alienation, and dislike, and if on our parts anything has been
said strongly with respect to the medical profession, and if you have been tempted to think that we thought injuriously of you, I am quite certain those feelings will be dissipated the more we know of one another, the more we meet with one another to discuss temperately those great things which belong to the temperance cause. I have alluded to the companionship of the Beloved Physician and St. Paul. It is a remarkable fact that St. Luke uses in the Gospel written by him, and in the Acts of the Apostles, also written by him, no less than 400 terms and phrases in medical use, and which are to be found in the old Greek medical writers, showing that he was not only an enthusiast with respect to literature, for his writings are of the most perfect kind, but likewise that he was an accomplished, a learned, and a skilful medical man; that he was a physician of very great repute because his use of these terms and phrases proves that he was a reader of the old school of medical men who belonged to the great Grecian nation. I say it is a great pleasure to me to meet so many men of your profession, and, like a former speaker, I was greatly struck to find so many of the younger members of the profession here today. I could not help making this observation that ten or twenty years ago it would have been impossible to have got at this early hour of the day so many men gathered for the purpose of discussing this great cause. Therefore I think that we are in a great measure advancing. My own profession has greatly advanced from the dark days when the clergy, and indeed all classes, were very dark and ignorant with respect to great spiritual subjects. I think that your profession has advanced too. I am quite certain that the medical profession is very different to what it was in the days when it only took Crabbe—the Poet, the Physician, and the Pastor—six months to qualify, and then, having qualified in that time, he came down and he "practised his profession right and left." But now, I almost lose my breath when I speak to some of the young students of my friends and hear details of the manner in which they are obliged to read and study and then go through the horrors of those competitive examinations! The marvel is the human brain is able to stand it, and that any man can surmount difficulties so great. It is something like six or seven years that you are obliged to spend, one way or another, in order to qualify for your profession; and I think if the clerical profession has advanced out of the darkness of past times—I might almost say out of the unspirituality which existed in the early part of this century—if we have advanced out of the darkness, you have also very much advanced. But still I think we want to know a good deal more than we do. We want to take up the text in this matter especially, that prevention is better than cure. And therefore in all such matters as I have had to do with in the temperance cause, while I would do all I can to cure, to re-instate, to bring back the poor victim of intemperance to a right mind, and to sit clothed at the feet of wisdom and of proper life, yet I think we ought not to forget that it is our duty to take difficulties out of the path, and to do all we can, not only by our moral sway, but by legislative interference, to remove the great temptations which are continually put in the way of persons who would otherwise maintain their position in life, and not fall victims to intemperance. I am thankful to think that this great country is beginning to learn the value of this principle—that prevention is better than cure. What loss would be avoided, what great outlay of strength and of everything that we want to utilise we should save if we only knew the real depth of truth there is in this axiom! I am most anxious simply on the present occasion to set the ball rolling, and by any remarks which I am making to prepare the way for the remarks which shall follow. We who may be said to stand apart from science, and simply to take the ground of experience, may sometimes have used utterances which were considered to be violent and extreme; but I hope you
will understand that if ever we have used words which may be so interpreted, it is because we have known not how else to show our horror, and to express the depth of our despair respecting things that have come under our notice. I am quite certain that for years my eyes were holden, and though I had lived so long in a very large parish I took no action in this matter of temperance. Therefore when my eyes were opened, and when I saw things as they existed and do exist, I felt in my soul that for the condition of things as it lies about us, for the wretchedness of individuals and households, for the misery which is entailed, no language could be strong enough to express what one heard and saw. But it is an immense benefit when the drag is put upon us, when we are balanced by your science, and when we are, as it were, indoctrinated by what you have made your special study. With respect to the advance that is made on this question, it is of the most excellent kind. We clergy, laity, and others, cannot be too thankful for the manner in which you are endeavouring so to educate the young student on the alcohol question, that your researches may tend more to the elucidation of the facts connected with it. It is a matter of the greatest moment that you should support us who are endeavouring to do what we can in our way by your science, and therefore I do call upon you, my friends (and I am thankful to say I number all the physicians in my own parish amongst my nearest and my closest allies), to help in this cause.

A great and intimate friend of mine went to consult a distinguished physician in London the other day. The physician said, “I know that you are not very well, and you will require very great care; but I know you to be a total abstainer, and I believe that in your present delicacy the smallest quantity of alcohol would not only do you no good, but would do you positive harm. This friend of mine carried out the prescription given to him by this eminent doctor. He of course abstained not only because it is his wish to do so, but likewise because he was following, as he ought to do, the advice given him. He has recovered the full tone and strength of his constitution, and he has done so without the use of alcohol. Therefore it was a grand prophecy of a man who, by a great inspiration, was able to see through his patient and what he required, and was able to say, “Alcohol will do you no good but positive harm.” While, at the same time, the distinguished physician holds as I do that there are circumstances in life when alcohol may be a proper medicine, and that there are times which you, I think, call “secondary health,” when physicians even of the strongest way of feeling may be called upon to administer it, I know there are some who have said, no matter what might be their condition, they would never under any circumstances take alcohol. With these persons I cannot agree, for if it is a medicine which you feel called upon to administer—life being the great gift from God, and not being our own but His, we have no right to interfere between Him and that life; and so if you, as scientists and as physicians, say, “Your life will be prolonged if you take this medicine at our hands,” then I say we who stand on the other side have no right to say, “I know it to be wrong and therefore I will have nothing to do with it.” We total abstainers are often misjudged, and wilfully misrepresented. Things have been put into my mouth and matters said of me which are abhorrent to my own nature and feelings. We know there are persons who dislike the very mention of anything like total abstinence, and so they are anxious to do the cause as well as the individual all the harm they can. I am perfectly certain that you, gentlemen, who take the moderate view on the total abstinence question have only, as it were, to merge your differences, so as to join with the clergy and ministers of this great country in trying to rid it of the greatest evil that ever went against its happiness, its purity, and its prosperity.

Mr. W. R. Selway, M.B.W., Vice-
Chairman of the Executive Committee of the League, said: Mr. President and Gentlemen, I represent on this occasion the National Temperance League, whose invitation you have been so kind as to accept. This is by no means the first occasion on which you have done the League a similar honour. It has happened now for several years in succession, but it is possible that meeting here as we do there may be some gentlemen present who have not attended previous meetings of ours in connection with the British Medical Association, and it may be necessary just to say in a word that the object of the League is to call public attention to the very great evils which result from the use of intoxicating liquors, and to ask medical men, as we have asked the clergy and other leaders of opinion, to be good enough to give this subject their careful and candid attention; for we feel persuaded that much of the evil which unquestionably affects our country (no one will doubt the evil or its extent) has grown upon us, and has continued in consequence of leaders of thought and of opinion simply ignoring it, and going on in the old habits which we have inherited from our ancestors. Now, gentlemen, we simply ask (and we hope we are not intrusive in coming to your Association and doing so) you to come here for a few minutes to consider so important a question as this, which most materially affects not only the moral but the physical condition of the people, and as the highest aim (as I think and know is the opinion held and expressed by a very large number of the medical profession) of your profession is to prevent disease rather than to cure it, if the great aim of the physician is to promote sanitation, which should prevent the evils that afflict mankind, I venture to say, gentlemen, that we are warranted in asking you kindly and thoughtfully to look at this great question as being one of the chief preventives of suffering and disease which could possibly be discovered. I shall not weary you with any statistics, but allow me just to say that evidence is at command which will show you that total abstainers suffer less sickness than those who take intoxicating drinks moderately; and if you rejoin upon me that the statistics to this effect are not over a very large area, and that possibly therefore they may be open to question, then I say that we have statistics of an unquestionable character, extending over some 30,000 persons which show that life is extended by the habit of total abstinence. These facts show at any rate that abstinence from intoxicating drinks is consonant with the most perfect health and vigour, and, may I add, even with longevity. So that, gentlemen, we are not asking you to take any step that will prejudice those who come under your care—quite the reverse. The Rev. Canon has referred to the march of public opinion, and especially as pervading the medical profession. I was very much struck with this quite recently. I have a son who is a student at the present time, and one day he came home from his lecture and said, "We have had a lecture to-day upon alcohol." The Lecturer upon Materia Medica had taken alcohol as his subject, and he gave me this as the teaching of one of the most eminent medical men of the present day—that alcohol was utterly useless as a beverage, and that it would be well for mankind and for the medical profession if it were relegated to the surgery and there only. That struck me as being a very great advance indeed in the teaching of the medical profession. Of course alcohol may be prescribed. We do not ask, gentlemen, that you should refrain from prescribing alcohol, or from doing anything which the science that you follow leads you to adopt, but we do ask this, and most respectfully suggest that in the prescribing of alcohol you should prescribe it as alcohol and not leave your patient to adopt any form of intoxicating drink that he or she may prefer in order to obtain the alcohol which you may think is necessary for their recuperation. If that be done, it does occur to me that a very serious blow would be given by
the medical profession against a habit which we think so injurious to the people as that of relying upon stimulants upon every conceivable occasion. I close as I began by simply asking you kindly and thoughtfully, to consider the effects of alcoholic drinks upon the people and as sanitarians to ask yourselves whether the teaching and practice of abstinence amongst them would not prevent an enormous amount of disease and of premature death.

Dr. J. Stewart, Clifton: During the last few years I have had the opportunity of tracing the history of a good many of those who are called "dipsoniacs." Now here let me appeal to my medical brethren to do all in their power to discourage the use of this term "dipsomania," which is doing much harm and which temperance reformers especially should do their utmost to stamp out. We (the medical body) look upon ourselves as professional men, and should never use any term which commits us to a theory which I believe the majority of the medical profession are not prepared to support. There is a theory involved in the term that it is a disease of the brain which signifies the occlusion of the mental powers. I do not think the theory can be maintained. The term "dipsomania" should be abolished and we should call it "drink-craving." We should be honest and straightforward and not put a cloak over the cowardice which leaves persons when troubles lower without the fortitude to meet them, and leads them to drink in the hope that their troubles may not affect them. Do not hesitate to say to the patient who comes to you enslaved by drink that he may leave off alcohol at once and for ever. I remember a county magistrate coming to my house late one evening from the North of England so that he might be removed from temptation. He said he would be dead in the morning if he did not have some alcohol—indeed he had been told so. I replied "I will answer for the result." Well, he had no alcohol, and he did not die in the morning, but has lived to thank and bless me to this day. I could multiply these cases by scores. I cannot believe that we are so poor in our pharmacopoeia that we cannot supply drugs which will take the place of alcohol in such an emergency. There is a third way in which we can help this movement and that is by showing that we are amongst the hardest workers with brain and body breathing, obliged to go without sleep and to endure fatigue, can live happily, comfortably, and in health, without the use of alcohol at all. My own example has always been more powerful than my teaching, and I can only regret that some of my medical brethren who have a desire to help the cause do not manifest the courage to come forward boldly and identify themselves with it. A fourth way to help the cause is to tell your lady-patients that porter is not necessary in order that they may nourish their babies. One of the most beautiful women I have ever seen has brought up her large family most admirably, and never taken a drop of alcohol. Women will not listen to theory, but point to such an example as this and they will think more of it than fifty fine-spun theories.

Dr. C. R. Drysdale: I would like to call attention to the fact that the Medical Temperance Association is now composed of 250 members, at the head of which is Dr. B. W. Richardson. I do so because neither he nor the Secretary, Dr. Ridge, is present. We want our (at present) small band to consist of 20,000 members, which is about the number of the medical profession in this country. As a beginning, we would like to enrol a certain number this year. We were in great trepidation when we begun, but have gathered courage as we have proceeded. For my own part, I have never taken alcohol, because I have not felt myself strong enough to do so. Neither have I been strong enough to inhale tobacco. My opinion is that we ought to set an example of bodily hygiene. The clergy point the way to heaven, and we ought not merely to point, but to walk in the way that leads to a long and healthy life. Our business is to get
people to live till ninety-five. The way we can do that is by having very good habits, and I am quite convinced that the taking of alcohol is not to be included in that category.

Mr. Folker, of Hanley, said that though not an abstainer, he took great interest in the cause, but was of opinion that temperance societies aimed too much at making temperate men sober, instead of going amongst those who were much more seriously affected. He hoped that those societies would turn their attention to grocers' licenses, which had done much harm, more particularly to women. To cure a man of the drink craving was possible; to cure a woman almost impossible. An immense source of evil would be removed if grocers' licenses could be abolished.

Dr. J. P. Scatfield added some words with reference to the Medical Temperance Association in addition to those already offered by Dr. Drysdale.

Dr. J. W. Sherfy said that, after all, the real business before temperance reformers was to get moderate drinkers to abstain, and then the drunkards could very soon be dealt with. Had medical men ever considered that in prescribing alcohol they might unwittingly be leading a reformed man back into the temptation from which he had escaped as by fire? Had they also ever considered that their patients might have the inherited appetite ready to be wakened up by a thoughtless prescription?

The Chairman intimated that the discussion must now close, but said it had been most agreeable and useful. Temperance Associations were far from being impractical, for they were endeavouring to do everything that had been suggested to-day as requiring to be done. In his own parish at Newport, for example, there was a flourishing Temperance Society holding regular meetings; a Band of Hope; a Soldier's Institute, to prevent the gallant defenders of their country from being destroyed by the liquor traffic when they returned home; and a splendid Coffee Tavern in the forefront of the High Street, opened by the Coffee Company of the Isle of Wight. He wished devoutly that they could stop the grocers' licenses, and also put down those pest-houses, the public-houses. As at present conducted they were left almost without control, and while this was so preaching and working seemed alike to be in vain.

The meeting was then brought to a close.

**Acute Alcoholism simulating Hydrophobia.** — In view of the frequent appearance of reported cases of hydrophobia, Dr. W. B. Hazard has published in the *St. Louis Clinical Record* a case of the above character. The patient suffered for several days from pharyngeal and laryngeal spasms, and had not been able to swallow any liquids. He was at first rational, and had no tremor. In a short time, however, furious mania developed, which ended in chronic convulsions and death. Post-mortem examination showed no characteristic changes anywhere. His previous history showed him to have been a hard and constant drinker.

**Alcoholism.** — The physiological antidote of alcoholism is strychnine; and there is a direct antagonism between the effects of the two. Strychnine opposes stimulation to alcoholic inertia, and repairs its regressive changes. The sulphate of strychnine is the excito-motor *par excellence* of the nervous centre, restoring normal activity to the languishing vitality and to the functions of organic life. Dr. Luton (*Bulletin de Thérapeutique*, September 30th) urges, therefore, a more general use of strychnine in alcoholism; and he thinks it is given, at present, with too much timidity. The researches of M. Richet appearing to establish that the danger is less
due to the poisoning of the nerve-centres, than to too direct an action on the respiratory laryngeal muscles, which are maintained in a condition of tonic spasm, it follows that the principal remedy for strychnine-poisoning is artificial respiration. In delirium tremens, hypodermic injections of strychnine may be continued almost to the commencement of tetanic action. In imminent alcoholism, a few drops of the tincture may be given at the commencement of meals. Dr. Luton has no doubt of the preventive action of preparations of strychnine.

**British Medical Journal.**

**President Barrow on the Alcohol Question.**—At the close of his opening address as President of the British Medical Association, Mr. Benjamin Barrow, F.R.C.S., alluded to attacks upon the profession by the laity, with the assistance of men in its own ranks, and gave as his first illustration "the temperance question." He said: "I respect every man who acts up to his principles; but no man has a right to accuse another of leading his patient to an immoral life because, in his judgment, some moderate stimulant is necessary, either to assist in the cure of disease or to maintain the standard of health. The man—I care not who he is—that scares the public by saying 'stimulants are of no use in any class or case of disease,' says that in proof of which he can produce no sound philosophic or scientific reasoning; he makes a declamation which I should have been sorry to carry out in my years of practice, and which is no sounder than that made by a man who once said, 'He cured all cases of cholera with salt.' Medical men have been traduced on this subject most unfairly, most unscrupulously. Take away stimulants altogether from the treatment of disease, and I believe you take away one of the chief anchors of medical treatment. I know that stimulants were at one time too freely administered, and they may be so still in rare cases; but who dares to say that the prescriber did not so conscientiously, believing it was for the benefit of his patient? Beware of giving way to doctrines wholesale, which may be prejudicial to health and dangerous to life!"

**Homes for Inebriates.**—At the annual meeting of the British Medical Association, at Ryde, on the 12th August, Dr. Alfred Carpenter introduced the report of the Habitual Drunkards Committee, detailing at length the measures the committee have taken since the meeting of the Association at Cambridge to obtain from the Legislature in provision whereby habitual drunkards who became chargeable to the rates should be placed under such restraint as may lead to their being reclaimed. The committee state that they have applied to the Local Government Board on the subject, and have been referred to the Boards of Guardians throughout the kingdom, the answers received from whom had generally been that it was desirable that guardians should have the power to pay for the detention of habitual drunkards in retreats, though they were equally anxious they should not be invested with power or receive order by Act of Parliament to appropriate the rates of their respective districts to the maintenance of such retreats. In the face of all the difficulties which have presented themselves the committee added that they had determined, if re-appointed, to become enrolled under the Limited Liability Act, for the purpose of establishing retreats on the Dalrymple type, and to apply to the Board of Trade for power to eliminate the word "limited" as applying to their company, on the ground that it would be established on philosophic and charitable principles, and not for commercial profit.—The report was unanimously agreed to, and the committee re-elected.

**Alcohol in a Canadian Asylum.**—In the Annual Report for 1880 of the Asylum for the Insane, London, Canada, Dr. R. M. Bucke, the medical superintendent, says:—"No beer, wine, whisky, nor brandy has been used at this asylum during the last twelve months. In place of these, in certain cases of illness where alcohol appeared to be indicated, we have given this in
its pure form, mixed of course with water, as most other medicines are. In this way we have consumed, in the course of the year, four gallons six pints and fifteen ounces of alcohol, equal to about nine gallons of whisky, or one gallon of whisky to every hundred patients under treatment, as against (in former years) three hundred dollars’ worth of beer, wine, and whisky to every hundred patients treated. I do not believe that alcohol has been withheld in any case where its use would have been beneficial to the patient, and I am quite sure that of the very little that has been given, a large proportion has done no good. I do not know of a single case in which alcohol has been given, during the past year, in which I could say positively that it has done good, and the doubt that I have had for many years, namely, whether alcohol ever does good, is stronger now than ever it was. Speaking of the disuse of alcohol last year, I noticed that the death-rate was somewhat lower than the year before that; this year it is still lower. From the time that the asylum was opened (excluding 1871, which was only a fraction of a year) until September 30, 1877, alcohol was used at the rate of about three dollars per patient per annum, and the average death-rate was 5.19 per cent. per annum. During the year ending September 30, 1878, when alcohol was being used at the rate of one dollar's worth per patient per annum, the death-rate was 5.1 per cent. And during the last two years, when (practically) no alcohol has been used, the death-rate has been 4.83 per cent. per annum, showing clearly that in the case of asylum inmates the use of alcohol does not tend to lengthen life or avert death."

HABITUAL DRUNKARDS.—Mr. H. W. Hoffmann, the Inspector of Retreats licensed for the admission of habitual drunkards, has presented to the Home Office his first annual report as required by the Act of 1879; and this report, together with the rules made by the Home Secretary for the management of these retreats, is published as a Parliamentary paper. It is not very encouraging. Only two retreats have been opened under the Act, at Sheepscombe House, near Stroud, Gloucestershire, and at Hall Court, Cannock, Staffordshire. “The short time during which the Act has been in operation,” says the Inspector, “is hardly sufficient to enable me to speak confidently as to results at present. I am unable to point out a single case where a permanent cure has been effected, but I can refer to several cases in which I think some good has resulted, and I am able to say that, as a rule, the general health of the patients has improved during their residence in these retreats; and, notwithstanding some difficulties in carrying out the Act in its present form, I believe that with a few amendments, which further experience of its working will probably show to be desirable, great progress may be made towards attaining the beneficial object for which it was passed. The licensees of the retreats have had many difficulties to contend with from various causes. There has been some hesitation to lay out money on establishments the licenses of which the justices might refuse to renew at the end of thirteen months, and where they are working under an Act which may cease at the expiration of ten years. With better means for the supervision of the patients during their absence from retreats, or with grounds better adapted for the healthy exercise and recreation of the inmates attached to the retreats, the public-houses would cease, I believe, to be, as they are now, a cause of anxiety. In the hope of being able to give a more encouraging account of the number of retreats licensed under the Act, and to gain a little more time for observation upon those which existed, I have ventured to delay submitting my report to you; but I regret to say that up to the present time, so far from applications for licenses being made, one even of the two retreats now reported upon has ceased to exist since April last, in consequence of the licensee having decided not to seek a renewal of his license. I am informed, however, that the opening of three new retreats is contemplated.”—Times.
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Original Contributions.

DR. A. CLARK ON ALCOHOL IN SMALL DOSES.

Dr. Andrew Clark has broken many a lance for the cause, under the banner of which it is our duty and our delight to fight. His eminence in the medical profession, and the deservedly high esteem in which he is held by his extensive clientele, which embraces many of the foremost men and women of the day, invest his utterances with no ordinary authority and power. All the weight of this authority and power has been fearlessly employed by Dr. Clark to deal trenchant blows at the common English superstition in the presumed physical and mental value of intoxicating drink. We cannot too heartily recognise the debt we owe to him for being one of the first men of light and leading, in the profession in London, to set his face against the profuse medical administration of alcohol. So decided was his stand that, long ago, a contemptible attempt was publicly made to attribute the death of a man of mark to what was termed "the lowering treatment of his physician, Dr. Clark."

It is also within our knowledge, that to Dr. Clark's sound advice the cause of Temperance is indebted for the return to the ranks of total abstinence of a distinguished philanthropist, who had been seduced for a time to dally with strong drink, on the plea of ill-health, by another eminent doctor; and that one of our foremost and most respected statesmen, who had been almost persuaded to give up abstinence and resort to intoxicants, by several high medical authorities, was confirmed in his abstinence from alcohol, and eventually regained his health without the aid of intoxicating drink, by the wise and firm counsel of Dr. Clark.

This accomplished physician has also, as our columns testify,
done yeoman public service to our cause by bearing clear and irrefrangible testimony to the truth of the scientific axiom on which the physiological argument for total abstinence is based—the poisonous nature and influence of alcohol. He candidly confessed, at the All Souls’ Church gathering, that health not only “cannot be benefited by alcohol in any degree,” but is a state which, “in nine times out of ten, is injured by alcohol.” Dr. Clark went still further, and testified that perfectly good health would, in his opinion, “always be injured, even by small doses of alcohol.”

In a word, the senior physician of the London Hospital called alcohol a poison, like “strychnine, arsenic, and opium.” Not content with describing the poisonous effects of alcohol on the body, Dr. Clark denounced it as taking the bloom off, and injuring the perfection of loveliness of mental and moral health, and as, by continuous use, producing such discord as to set the music of life out of tune. Dr. Clark further recorded a proportion of disease in his own practice occasioned by drinking, at least as high as even the most ardent advocates of teetotalism had ever attributed to this cause; overwhelmed with ridicule the excuse of many who timidly try total abstinence for a brief space and abandon it, on the ground that it does not agree with them; and showed that drinking does not help, but rather hinders work, and that the evils produced by strong drink, as well as the crave for it, descend to posterity. In addition to this plain speaking, Dr. Clark has explained that all these mischiefs are apt to arise not only from what is called drunkenness, but from drinking far short of drunkenness, in such language, and with such power, as to extort from the Rector of All Souls the admission that this indictment of strong drink was “the soundest thrashing moderate drinkers ever received in their lives.”

In view of such a potent and truly marvellous exhibition of prowess on the side of Temperance, and of the consternation thereby spread in the opposing ranks of the defenders of strong drink, only the strongest sense of duty can compel us to criticise any essay of Dr. Clark in this “war to the knife.” But there is a weak point in his armour which, however reluctantly, we must point out. At the close of a remarkable address at Galashiels some weeks ago, an address of wondrous eloquence and power, Dr. Clark offered a proposition which, in our judgment, and in that of most thinking persons, was in direct contradiction to the doctrine taught by him in his lecture at All Souls, and in his address at Galashiels.

In the latter, the learned speaker at the outset remarked that he was free to say that alcohol “did not and could not benefit health. Health might bear it, and it did bear it in certain doses, but it was not benefited by it.” Dr. Clark adds that some people
Dr. A. Clark on Alcohol in small Doses.

"had felt that a certain small quantity of alcohol could be taken with no sensible, no apparent, injury," and he designates this small quantity as "the physiological or normal quantity," which "observation, experiment, and a careful study of the influence of alcohol, had made apparent to him as a safe quantity for every human individual."

What can Dr. Clark mean by such contradictory statements? He says health is not benefited by any quantity, and that even in small doses alcohol is so disturbing an agent that it puts the music of life out of tune, and impairs the highest mental and moral health. And yet he tells hard-headed Scotchmen that there is a safe physiological quantity for every human individual!

Strange to say, Dr. Clark also calls this a "normal quantity." No quantity of a poison can be normal. "Normal" means, "according to rule or law." As Dr. Clark himself has taught, health is impaired by even small quantities of alcohol; so, according to his own teaching, no quantity of alcohol can be normal, i.e., can be conformable to the laws of health. If Dr. Clark were here referring to an abnormal state of the body, i.e., to a diseased condition, we could understand how the doses he defines so carefully could be in a sense "normal." We frankly concede that, if this were his meaning, his definition of a medicinal dose is clear and accurate. But this could not be what he intended to convey, for no one in his senses would think of prescribing even small doses of physic to "every human individual."

Dr. Clark may perhaps have applied the word "normal," without any relation to health or to the condition of the drinker, and solely with reference to the article; thereby indicating that what he calls the normal, i.e., regular quantity, is safe for every one, and that all quantities beyond this normal, i.e., regular quantity, are unsafe. If such were his meaning, all we can say is that his dictum is opposed to known facts. If it could be demonstrated, and the demonstration is impossible, that a regular limited quantity of alcohol is absolutely safe for many, there are cases with which most medical men and Christian workers are too familiar, where the smallest sip of an intoxicating liquid is not only unsafe, but dangerous. Not a few reformed drunkards, as well as not a few unfallen subjects of the inherited drink crave, can abstain and can drink to drunkenness, but to drink moderately is beyond their power. The smallest dose sets the latent fire within the breasts of such in a blaze, many a sad shipwreck of human life and human happiness attesting but too plainly that no so-called physiological or normal quantity is safe for "every human individual."
If there is any meaning at all in Dr. Clark's application of the term "normal," and we have little doubt that he used it inadvertently and without thought, the expression would involve the conclusion that the limited quantity he particularises ought to be the daily portion of every person. We cannot for a moment believe that Dr. Clark meant any such nonsense. He has, we think, been betrayed into the very error he deprecates when committed by teetotalers,—that of talking loosely and unguardedly on a matter which needs to be treated with the strictest scientific precision.

If Dr. Clark was right when he recently insisted that the continuous use of moderate quantities of alcohol disturbed and impaired physical, mental, and moral health, he cannot be right when he still more recently asserted that a certain allowance of alcohol was a safe physiological or normal quantity for every human individual. The truth is that neither Dr. Clark, nor any one else, has any absolute knowledge of the influence of doses of any poison, short of the quantity sufficient to produce the symptoms characteristic of the particular poison. This is as true of arsenic, aconite, and strychnia as it is of alcohol. We are bound by reason of things pertaining to temperance, as we reason concerning other things. We are bound to experiment and think and talk about alcohol, as we experiment and think and talk about prussic acid, or any other similar substance. All poisons can be taken, we will not say with Dr. Clark, "by every human individual," but by many human individuals, in quantities so small as to cause no apparent harm. Whether harm is actually done is beyond our power to demonstrate. It is not lawful, were it expedient, to vivisect a human being immediately after he swallows a very small dose of alcohol or any other poison, and therefore we shall never be able to prove, scientifically, that extremely limited quantities of even the most potent poisonous agent are injurious. In short, the conditions of proof are impossible.

Herein is the main error into which Dr. Clark has fallen. If he had qualified the statement "the physiological quantity is safe," with the word "apparently," he would have been within the limits of truth; just as he would have been had he said "to many human individuals," instead of "to every human individual." Even in this case, however, Dr. Clark would have been beating the air. It is incumbent on eminent physicians, no less than on ordinary mortals, to speak of common things in common language, easily understood by common minds. Common sense dictates that when we speak of arsenic being a poison, we mean that arsenic poisons when taken in quantities adequate to produce the special effects symptomatic of poisoning by this metal. So, common
sense enjoins that we speak of alcohol. Let Dr. Clark, abandoning his subtleties and refinements, talk plain common sense, and his deliverances on alcohol will, as of yore, commend themselves at once to the scientific and the popular mind.

This really is all that concerns us, as medical journalists, with Dr. Clark's Galashiels oration. With such an eccentric proposal as the founding of a new missionary society, to send agents into every parish to inculcate the new and erroneous doctrine of the safety of physiologically moderate indulgence in an irritant narcotic poison to every human being, we can have no sympathy. Neither, we imagine, can any thoughtful person, whether abstainer or non-abstainer. If the suggestion be not a joke, it is only a modern revival of the knight errantry of a former age. Don Quixote tilting at a windmill is not a more ridiculous spectacle than would be a crusade headed by a grave London physician, the leaders of which held up to the gaze of the denizens of every street, not a cross, but a glass containing "a tablespoonful of spirits or a pint of beer," and in burning words exhorted the populace to drink daily this "safe physiological or normal quantity." We are the more inclined to regard this extraordinary conceit as a jest, as such an association would have the purely selfish effect of teaching how to safely indulge in a fascinating, if dangerous, luxury. In the unselfish and noble work of reaching the intemperate, the members of a Safe Physiological Quantity Society could take no useful part.

Seriously, Dr. Clark has not been true to his convictions, or to himself. Let him recall to mind his own words, "Blessed and holy is the work of the teetotaler, and God be with it." Let him read once more his own grand and noble declaration—"It is when I think myself of all this, the terrible effects of the abuse of alcohol, that I am disposed to give up my profession, to give up everything, and to go forth upon a holy crusade, preaching to all men—Beware of this enemy of the race," and we feel convinced that he will, once and for all, give a clear and unmistakable testimony to the poisonous narcotic action of alcohol, and to the risk which every one, who indulges however moderately in it, runs. Nor is Dr. Clark likely to be content with this. He probably realises, by this time, that he has unsettled the belief in temperance principles in the minds of many by his complicated and inconsistent utterances; and he owes it to his reputation, to his profession, and to the world at large, to deliberately consider whether he cannot conscientiously throw in his lot with those abstaining reformers who are so manfully grappling with that destroyer which he so truly calls "An Enemy of the Race."
THE ALLEGED INCREASE OF MORTALITY IN THE WALTON WORKHOUSE (LIVERPOOL).

It will be remembered that in November, 1880, there appeared in the Times a paragraph stating that at a meeting of the Board of Guardians of the West Derby (Liverpool) Union, the medical officer of the Walton Workhouse, Dr. Anderson, had presented a report on the relation of the mortality and length of convalescence of paupers in the workhouse to the amount of alcoholic liquors consumed. He stated that in the course of two months, September and October, 1880, during which the amount of alcohol consumed was of the value of £31 17s. 7d., the mortality was nearly three times as great as during the same period of 1879, when it was of the value of £122 7s. 8¾d.; namely, sixty-three deaths against twenty-three. Dr. Anderson attributed this increase of mortality to the diminution of the quantity of alcohol.

This paragraph was largely quoted by provincial papers, and great importance was attached to it.

Into the various causes alleged for the increase of mortality, such as the non-supply of extra clothing during a cold autumn, &c., we do not propose to inquire. We wish simply to state the action which was taken in reference to this report by the Council of the British Medical Temperance Association.

The Council held a long discussion on the subject, and agreed that as the facts on which Dr. Anderson based his conclusions were not presented in the paragraph above referred to, it was necessary to suspend judgment until these facts could be obtained. It was therefore decided that the Local Government Board should be memorialised to institute an official inquiry into the alleged facts. Certain heads of inquiry were suggested, and a letter was drawn up by Dr. Richardson to the President of the Local Government Board, asking for the official inquiry.

The following were the facts which the Council declared as necessary to be known before any true conclusion could be arrived at:

1.—What was the nature of the disease in every case that terminated fatally during the time when the reduced amount of alcohol was being used by Dr. Anderson?

2.—What were the ages, sex, and conditions of the persons who died under these circumstances?

3.—What was the actual amount of alcohol daily administered to those who died under the circumstances named, and in what form of alcoholic stimulant was the alcohol supplied to them?

4.—What has been the precise rate of mortality per month, in relation to the number of patients during the past five years?
5.—What has been the expenditure for alcoholic stimulants per head, per month, for the hospital patients of the workhouse, during the past five years?

6.—What was the expenditure for alcoholic stimulants per head during the two months in which the quantity of alcohol was reduced, and in which the excessive mortality, supposed to have followed from the reduction of stimulants, occurred?

7.—What length of time was each patient, who died during the period of reduced administration of alcoholic stimulants, under medical treatment?

8.—What was the precise nature of the disease, and what the condition of the patient in each case where the convalescence was prolonged by the reduction of alcohol, and how long was each such case under treatment?

9.—What was the exact amount of alcoholic stimulant supplied to each case of prolonged convalescence as compared with the amount that would ordinarily have been supplied?

10.—How many days in each case was the convalescence prolonged by the reduction of the stimulant?

The request of the Council was acceded to by the Local Government Board, and Dr. Mouat went to the workhouse and endeavoured to obtain the information required. After some time had elapsed, the returns which had been furnished were, by the courtesy of the Local Government Board, placed in the hands of the Council of the British Medical Temperance Association, for them to analyse and report upon. A sub-committee, consisting of Dr. Richardson, H. Branthwaite, Esq., Dr. Norman Kerr, and Dr. J. J. Ridge, was then appointed to perform this duty, with the result that the following letter was drawn up, submitted to the Council, approved, and transmitted to the Local Government Board:

To the Secretary of the Local Government Board.

Sir,—The subject of your letter of 10th November came before the Council of the British Medical Temperance Association at its meeting held November 25, 1881, Dr. Richardson in the chair. Dr. Richardson reported to the Council that, acting on their instructions of May 20, 1881, he had placed the documents requiring calculation in the hands of Messrs. Cash & Co., in order that all matters involving figures might be analysed and calculated upon in the most impartial and complete form. Dr. Richardson had also himself entered into all the details bearing on the modes of death included in the report. The result of the whole examination was as follows:

1.—That alcohol was administered in several of the cases recorded as occurring during the two months of so-called non-alcoholic treatment.
2.—That many of the cases which ended fatally were cases in which it could not be said that the absence of alcohol had any relation to the result.

3.—That, in respect to the rate of mortality per month, in relation to the number of patients during the last five years, no satisfactory facts can be arrived at, unless the number of patients in each month of each of the past five years were supplied. Such data are wanting. Table A gives the number of monthly and annual deaths, and Table B is an analysis of Table A, with a statement of the average number and class of inmates, and the ratio of deaths to the number of inmates, but nothing more.

4.—That in respect to the expenditure of alcohol per head per month for the past five years, no satisfactory answer can be given unless the expenditure for alcoholic stimulants supplied to patients for each month of each of the five years were rendered. The table bearing on this subject only gives the cost of alcoholic stimulants supplied to the whole workhouse for the two years from the 1st March, 1879.

5.—That, in respect to the question of the expenditure for alcoholic stimulants per head during the two months in which the quantity of alcohol was reduced and in which the excessive mortality supposed to have followed from the reduction occurred, there are no data. In answering this question it would be necessary to know the number of patients there were during the two months (7th September to 2nd November) who consumed stimulants to the value of £31 17s. 7d., as reported.

6.—On the questions 7, 8, 9, and 10, in the letter by Dr. Richardson to the President of the Local Government Board, of November 30, 1880, no answer at all can be obtained from the returns.

On the whole this Council is of opinion that the facts and figures supplied to it by the Local Government Board do not afford sufficient basis for any conclusive opinion as to the effect of the reduction of alcohol upon the mortality of the Infirmary during the period named. They certainly do not afford any authority whatever for Dr. Anderson’s assertion that the increased death-rate and prolonged convalescence were due to the withdrawal of alcohol.

I am, Sir, your obedient servant,

J. JAMES RIDGE,
Hon. Sec. British Medical Temperance Association.
**Miscellaneous Communications.**

**WHAT SHALL WE DO WITH THE INEBRIATE?**

*By T. D. Crothers, M.D., Superintendent of Walnut Hill Home, Hartford, Conn., U.S.A.*

This was the title of a paper written by a very able physician, and published in a popular review in New England in 1858, in which inebriety was emphatically declared to be always a vice and sin, the treatment of which consisted in a more rigorous enforcement of the law, and severe punishment in every instance. A clergyman, who reviewed this article at great length, endorsed its sentiments, and urged the additional means of conversion, which he claimed would cure every case. This article, and its review, passed into literature as an authoritative discussion and answer to this question. Years after, it happened that both persons met in an inebriate asylum—the doctor, to visit his inebriate son, who was an inmate of the institution; the clergyman, to receive medical treatment for both the alcoholic and opium disorder. Thus, when this question demanded a practical solution in their own family circle, all previous theories were radically changed. In 1868, a very prominent physician and medical writer refused to aid in the building of an asylum, by either his influence or money, denouncing it as a humbug, and unworthy the name of science. Five years later he brought his son, a chronic inebriate, to this asylum for treatment, and warmly urged all means to sustain it. Later, his son relapsed, and reported the most extravagant stories of his freedom in the asylum to get all the alcohol he wanted. This the father believed, and became a bitter enemy of the institution. The death of the son, from delirium tremens, increased his enmity, and, today, he condemns physical means and appliances to cure inebriety, as exploded absurdities of the past; and a large circle of medical friends accept this as a final statement of facts. This illustrates the position of many of the profession. The public have assumed that inebriety is purely a vice, and can be reached only by moral and legal appliances. The great religious movements that are sweeping over the country, with their thousands of enthusiastic reformers, are urging this view as the only one that will reach the inebriate. To-day, in all the discussions of the effects of inebriety and its presence, the same remedy is urged, and, stranger than all, is accepted by many scientific men. The failure of the medical profession to study the nature and character of inebriety has opened wide the doors for a vast army of reformed inebriates and clergymen, who, in the most extravagant and dogmatic way, are instructing the public what inebriety is and how to manage it. In 1867, Dr. Parrish asserted that inebriety must be regarded as a disease, and treated by physical means; a fact that Vulpian had urged fifteen centuries ago, and which had been endorsed by leading men in every century from that time down; and yet the religious press sent up solemn protest against the admission of such unholy doctrines. Even the superintendents of some of the insane asylums joined in denouncing the disease theory; and, to-day, the unfortunate remark of Dr. Bucknill, regarding asylums for inebriates, “that they failed to cure a disease which did not exist, by remedies which were not applied,” is accepted by many as authoritative. In the future, the student who examines the history of medical
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progress of this century, and notes the extraordinary activity and practical character of all studies into the causes and prevention of diseases, will be amazed to find that inebriety was hardly recognised; also, that its study and treatment were left almost entirely in the hands of clergymen and inebriates themselves. The grim necessity for a practical answer to the question, “What shall we do with the inebriate?” is manifest in the great activity of temperance societies, churches and other efforts, not founded on scientific study or research. As an illustration glance at the temperance literature, filling whole libraries, and represented by hundreds of papers, all discussing and approaching inebriety from a moral standpoint; accounting for the presence of one hundred thousand inebriates through original sin, and a vicious element in the moral nature of man; ignoring the existence of the great natural and physical laws controlling the body and mind; while the medical literature of inebriety could all be put on a small table, and is represented by only one journal; which, nevertheless, is full of promise, and distinctly marks a new era in the field of psychological literature. Already, the disease of inebriety is clearly outlined, and the vast chains of conditions and causes stretch out into wide, unexplored fields, that are governed by laws which will be clearly understood in the future. This great army of inebriates, projected from the front line of civilisation, extending back through all grades of society, are but the victims of physical causes, and the results of conditions which await further study. Such study must be thorough and exhaustive, and include all the

conditions of inheritance and surroundings of mental and physical life, and of the time and circumstance of the first toxic use of alcohol. From these facts will appear some of the laws which control the development and progress of this malady. The following statement will represent the problem in its general bearings: Among all classes, and in all sections, are found men and women who persistently use alcoholic drinks to excess; suffering, both directly and indirectly, in health, character, position, also in social and pecuniary interest. This they continue to do, against all motives of self-interest, influence of others, and considerations of right and wrong, either slowly or rapidly going down to ruin and death. Through all this there is an appearance of health, and often a keen recognition of the situation, but rarely any successful effort to recover. Looking at these cases more closely, they seem to begin in some regular order, and follow a line of conditions and circumstances that are more or less uniform; that is, we may recognise a general chain of cause and effect, and note a continuous progress in each case, which is parallel. This suggests a physical origin, and if we make a record of the symptoms of two cases, as seen month after month, a more striking similarity will appear. Not unfrequently this is so marked that we can predict, from some general knowledge of the patient, much of the future progress of the case. As an illustration of the uniformity of the symptoms and progress, the following study is given of two ordinary cases, which differ in no way from many others:

**Case 1.**
A farmer, twenty-five years old.
Began to drink suddenly.
Inherited nervous diathesis.
Probable active cause: obscure injury and overwork.
Drinks steadily to excess.
Delusions of strength to stop at will.
Boastful and extravagant in speech.
Habits become irregular.

**Case 2.**
A clerk, thirty-four years old.
A long stage of moderate drinking.
No special history of heredity.
Active cause: general irregularities and bad living.
Drinks irregularly and at times to excess.
Same delusion.
Very egotistical and self-conscious.
Works spasmodically.
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Manners changing.
Morose and untruthful.
Very suspicious.
Melancholy and suicidal at times.
Unusual violent temper.
Extreme sensitiveness.
Both complain of the neglect of friends to aid them by not concealing their true condition.
Both make fitful efforts to recover and then sink back to worse conditions.
Long distinct free intervals of sobriety.
Sudden and prolonged intoxication.

Both came under treatment in an asylum, and both relapsed after being discharged.
Later failure of mind.

Religious melancholy,
Death from pneumonia.

Losing pride in appearance.
Untruthful, rude and hilarious.
Alternately suspicious and credulous.
Depressed and often exhausted.
Very quarrelsome.
Afraid of insults and sneers.

No free intervals.
Intoxicated only at long intervals, but always drinking.

Mind full of delusions of wealth, and great plans for the future.

In an insane asylum with general paresis.

degeneration, either inherited or acquired, that are present before alcohol is used, and break out into an inordinate desire for alcohol, or conditions of exhaustion, for which this drug seems to give relief. In the former case where alcohol appears to be the primary cause, there will be found many complex conditions; pathological changes coming from the different alcohols, that are practically unknown. Recent studies have shown that the toxical action of different alcohols depend upon the kind of alcohol, the substance from which it is made, and the process of manufacture, also the natural chemical combinations which follow after its manufacture. These different alcohols when taken alone produce different physiological effects on the body.

For instance, one form of alcohol will cause profound stupor, another will produce intense hyperaemia of the brain and delirium, a third is followed by muscular tremors and reduction of temperature, &c. The study of a few of these alcohols seem to indicate that each one alone has a special physiological action over the brain and spinal cord. If we consider the almost numberless forms of alcohol, and their equally complex combinations in the various forms of drink used, and the still more uncertain physiological actions on the body, the
magnitude of the subject will be partially seen. Practically, from this we may realise some of the many causes which result in inebriety. And the only wonder is that the effects of alcohol are not more pronounced and fatal in each case. In the second factor are conditions of degeneration, either inherited or acquired, present before alcohol is used, which develop into inebriety, or produce conditions of exhaustion, for which alcohol seems to give relief. The active causation of inebriety, from inheritance, appears either in a direct or indirect form. In the former it follows directly from father to son, or from family to family, and is manifest in childhood by a perverted brain and nerve force, and disturbed functional activities. In the latter it is often more remotely inherited, as from the second generation back, and breaks out from the application of some peculiar, exciting causes. Next to inheritance, directly from inebriate ancestors, are degenerative conditions of the organism, following all the various forms of insanity and epilepsy; also consumption, and many of the nervous diseases noted by intense exhaustion: all these transmit a diathesis to the next generation, which often appears in inebriety. Another series of causes will be found in the bad and imperfect nutrition of childhood. This period of life, between four and fifteen years of age, is often the starting point of inebriety. The nutrient degenerations, from both the quality, quantity and irregularities of food, also over-stimulation of the brain and nervous system, break out in inebriety in manhood. Again, we shall find climate, occupation, education and surroundings active causation which enter into many cases, modifying and changing the progress materially. All these factors are more or less present, and enter into the causation of nearly all cases of inebriety. Up to this time no studies have been made in this direction, and the general term of "vice" has been given to every obscure symptom of inebriety. Inebriety not only appears as the result of perversions and degenerations of the brain and nervous system, following the direct use of alcohol, but it is often a symptom, and follows other diseases as a hint of degeneration in certain cortical brain centres, notably in general paresis, epilepsy, tumours of the brain, and reflex irritations, dementia and melancholia, &c. Inebriety not infrequently merges into acute mania and other diseases, which pass rapidly to a fatal termination. The range of causes in inebriety are very complex, involving many conditions that require careful study from a scientific standpoint.

The special question of our discussion resolves itself into two general facts. First: The special appliances and methods of treatment which are indicated by the present study of inebriety, as successful in the cure of these cases. Second: Preventive measures and hygienic means that will lessen the number of persons who suffer from inebriety. First: No matter what the real cause may be we must recognise the presence of alcohol and remove it; for the practical fact is that the use of this drug in toxic doses, or continuously, causes tissue degeneration and starvation, and this interferes with the process of absorption and elimination, thus breaking up all chemical changes in the body. This may go on for a long time, and without marked evidence of the real condition. If the patient cannot be treated at home successfully he must be removed to some asylum or hospital, or properly quarantined, until positive exclusion from this cause can be obtained. Alcohol always masks and covers the real condition of the patient, and its withdrawal reveals the long train of causes that enter into the formation of the case, permitting more exact studies into the nature of the disorder. No case can be treated unless absolutely removed from alcohol. This can be most effectually done in a special hospital for this purpose, where legal restraint can be combined with surroundings to make it exceedingly difficult to procure spirits. After the removal of alcohol the sanitary surroundings of the patient demand attention. From whatever circle of
life or social condition he may come, there will be found a general neglect of all healthy habits of living and exercise. All regularity of work and proper care of the body, inordinate and insufficient food, want of bathing, ventilation, rest, and all the many conditions which enter into healthy activity of both body and mind, require careful regulation and treatment. If this cannot be done elsewhere it must be in special hospitals, conducted in the most methodical and hygienic manner. Not only the location, but the building must afford every facility to bring the best conditions of health. It may be large or small, situated either in the country or suburbs of city, but it must combine seclusion from alcohol, and the best sanitary conditions for restoration. Residence in such a place must be positive and exact, and not depend on the feeble will and impulse of the patient.

The duration of this residence should depend on circumstances and the history of the case. The legal principle which should apply in these cases is, that whenever any person by the excessive use of alcohol not only injures himself, destroying his property, but perils the rights of others, and the good order and harmony of society, he should be restrained, and forced to adopt such measures as will lead to a speedy recovery. He is for the time substantially irresponsible and incapable of exercising full liberty of choice, and should be treated the same as a small-pox case, or a suicidal mania. If he will not go voluntarily into the special surroundings necessary for health, it is the duty of his friends and society to force him to do so.

The question is not of the degree of responsibility or capacity for self-restraint, or of the moral state of the patient’s mind; but the immediate means to meet the demands of the case, on the same principle that the surgeon when called to treat a fracture, having first ascertained the kind of injury, uses the exact appliances to meet the case without regard to other causes which may have been present. In special hospitals the study of inebriety can be conducted with much accuracy, and all the many symptoms which distinguish it as a disease pointed out, and their proper treatment more positively ascertained. The application of the principle of rest in the treatment so essential, can be more thoroughly carried out here, where all the surroundings are under the control of the physician. Nervous exhaustion is more or less present in all cases. The application of rest to both mind and body requires a nice adjustment of means and remedies based on an accurate study of the wants and history of the case. For instance, a patient accustomed to active brain labour, needs a different kind of rest from the gross lethargic case, that has but little mental exercise. The one gets rest from diversity, the other from quiet and regularity. The treatment by rest enters into all the conditions of functional and mental living. The inebriate hospital should be a rest-cure in its broadest scientific sense. Turkish baths are undoubtedly the most valuable medical means to rouse up the diseased organism; they seem to have a marked power over the vaso-motor paralysis, and increase the eliminating process of the skin, &c. Electricity and bitter barks, also arsenic and strychnia, are of great value in certain cases, while the bromide chloral and other depressants should be given guardedly, and not without positive indications of their necessity. The common practice of treating patients at home by such chemical restraints as may be obtained from chloral, bromides, opium and other drugs of this character is excessively dangerous, and always prolongs the duration of the disease, increasing the organic degeneration and making recovery more difficult. In two cases which came under my care, one for chloral, and the other opium inebriety, the origin was evidently from the use of these drugs to relieve the effects of excess of alcohol. The use of such narcotic drugs in inebriety should be contra-indicated, as a rule, from the natural tendency of this disorder to merge into diseased cravings for these substances. A physician whose son
had been under treatment at Binghamton Asylum for dipsonia, and
had relapsed after being discharged, commenced active treatment by chemi-
cal restraint at home when the attack came on. By profoundly narcotising
the patient on the appearance of the
attack, and keeping it up until the
paroxysm was over, he was prevented
from using alcohol. The physician
was delighted and rushed into print,
in an article, to show that inebriety
could be successfully treated at home
by these agents. Two years after
this son was sent to an insane asylum
demented and idiotic, and the history
indicated clearly that bromide of
potassium and chloral were the active
causes.
The inebriate, although appearing
to be in possession of his mind, will
always be found on the other side of
that mysterious border-line of mental
health. The ego is always very active,
and delusions of strength and capacity
to endure and recover are present to
the last moment of existence.
The inebriate in the lowest chronic
stages, with the adverse experience of
twenty years, will talk and act confi-
dent in his ability to stop the use of
alcohol absolutely at his pleasure.
Alcohol seems to act on some cerebral
centres of the brain, causing what is
variously termed moral paralysis or
degeneration, marked first by false
reasoning on matters of right and
wrong, and timidity of character.
Then a general progressive degenera-
tion of all the higher elements of man-
hood, also confused efforts to conceal
his motives and character behind a
mask of deception and intrigue.
Prevarication, want of veracity, slander-
ing and decline of pride with impul-
sive selfishness, alternating with un-
bounded benevolence, may be noticed
in every case. These mental symp-
toms rarely attract attention until the
case has become chronic, and even
then are observed only by his most
intimate friends. In all these cases
the mind needs treatment as well as
the body. An asylum that will provide
remission from alcohol with good sur-
roundings and rest, must bring mental
appliances that will reach these ob-
sure psychical conditions. Of these,
restraint is important; not the bars of
a prison or the control of a lunatic
asylum, but a combination of the two
applied at times with military exactness,
and alternated with freedom. Each case
should be governed by conditions and
circumstances which depend on the
history and causes. Often restraint is
injurious and the direct cause of men-
tal irritation that may bring on a
relapse; again it is a powerful stimu-
lus, rousing up the feeble will and
debilitated organism into a healthy
activity. It may be termed either an
irritating depressant, or a stimulat-
ing tonic, and the proper application of
this means is a valuable remedy.
Some of the many complex conditions
which enter into this question of
when and how far active restraint
may be applied with benefit to the
case, will be better understood in some
illustrative cases.
Case I.—An Irishman and farmer,
who had, in all probability, inherited
an insane neurosis, having drank
irregularly, from fifteen years of age.
At thirty, he was a periodic inebriate,
with free intervals of three months.
These paroxysms came on from some
unexpected condition, usually intense
depression from some external cause.
In one of these paroxysms he was
brought to the asylum, and was filled
with delusions of the bad motives and
purposes of his friends. For some
days he suffered from muscular agita-
tion and extreme restlessness, then
recovered. For weeks after he was
pleased to be restrained and watched;
said he felt more secure and confident
of recovery by this means. Four
months after admission he complained
of this restraint, and wanted full liberty
to go and come. This was denied
on general principles. He then be-
came suspicious, and attributed this
refusal to the worst motives; was
alarmed and went about in a dazed,
restless manner. The watching and
restraint were increased under the
impression of the return of paroxysm
of drink. At last he escaped, at the
risk of his life, by climbing from the
window of a third storey, and drank
very seriously. He was returned in a
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few hours, and recovered without any noticeable incident, submitting very cheerfully to all the restraints of the institution. Two months later, he began to complain, as before, of the confinement and watching. As an experiment, he was given full liberty within certain limits, only required to be exact in the observance of all other rules. His mind seemed at rest, and he continued a most cheerful, exemplary patient for six months, until discharged. During this time he remained in bed for a day or more on several occasions, giving as a reason a feeling of uncertainty and depression—evidently a premonitory symptom of the paroxysm of drink, which yielded readily to quiet and medicine. At this time, two years later, he is in good health and active business. Here it was clear that restraint, beyond a certain limit, was irritating and injurious. The freedom of the will acted as a tonic, giving him greater vigour and capacity. He was repeatedly watched in conditions of temptation, and always manifested strength and vigour.

Case 2.—Illustrates an opposite condition, demanding continuous restraint. B. was a graduate of college, and lawyer of much eminence. For some constitutional debility in childhood he had been given wine and beer for years, daily. Epilepsy, catlepsy, and consumption, had appeared in various members of the family, both in present and past generations. During college life he was intoxicated frequently, and at twenty-five he drank, steadily, beer every day. At thirty-two he was brought to the asylum, an impulsive inebriate. Drinking to intoxication every week, or oftener, depending on circumstances, and using some form of spirits every day. He was suicidal, and suffered from intense depression, with general muscular exhaustion. His mind was impulsive and full of delusions of either extravagant hope or abject despair. He recovered, with firm convictions and very earnest protestations that he would never use alcohol again. At times he complained of the restraint as being unnecessary, but submitted quietly, although very emphatic in his thorough recovery. After three months' treatment he relapsed from the most trifling temptation, and from this, during his entire residence of a year and a half in the institution, he could not be trusted a moment, but would procure spirits under all circumstances, and at all times, although seemingly the soul of honour and honesty. He would apparently regret having fallen at the time, and seemed anxious to avoid any temptations in the future, but soon after display intrigue and cunning to procure spirits with every opportunity. He drank on being discharged, and continued up to his death, a year later. This case needed the restraint of a military asylum, controlling all the little events of every-day life; and the more exact and complete, the better he would be.

A third case is given as combining many of the characteristics of both:

Case 3.—Was a merchant, forty-six years old, who was an accidental inebriate. That is, he used alcohol only to relieve conditions of exhaustion and excitement that came on suddenly. After a few weeks' residence in the asylum he became impatient of restraint, and was allowed to have a certain amount of liberty, which he soon abused, and relapsed. Four months of careful restraint followed, and he was given liberty again. Two days after he was so much agitated that he was again restrained. From this time and during six months' treatment, alternate restraint and freedom were given him, depending upon his mental and physical condition. If he was restless, irritable, and nervous, careful watching was instituted; but if he was cool and quiet, he could go about with safety. Great care was given to have him under observation in the afternoon and at night, as these were considered dangerous periods. This patient is now doing well, and is a good example of the indications of treatment from a thorough study of the case.

Continuous restraint and unlimited freedom were both contra-indicated from a clinical study, but the wise
application of each was found to be absolutely essential in the treatment. This is undoubtedly a means of treatment which should be used with the same discretion and judgment as medicines. In the practical application of the treatment of these cases in an asylum, three distinct classes will be found.

The first class is probably most prominent of all others, and is found to be deficient by inheritance. They have an exceedingly low sense of duty and conceptions of right and wrong. Very frequently they display distinct criminal tendencies, associated with weak will and low passionate impulses. As inebriates they need sharp, active discipline, and exact military surroundings, regulating every duty and act of life. This continued for a long time in an asylum, with medical treatment, gives much promise of permanent cure. After two or more years in an asylum, if they can be placed in some position removed from all general temptation, and actively employed for a long time, their restoration is assured.

For a long time these cases have been regarded as types of all inebriates, when, literally, they are simply strongly marked cases of defective brain and nerve force, alternately criminals, insane and inebriates, from accident and circumstance. They are freighted with a peculiar diathesis, which breaks out into either criminality, insanity, inebriety, or trampism, or one or more together, depending on circumstances, and are always more or less incurable. Superintendents of insane asylums, and judges, have based all their conclusions of inebriety from observations of this class. In the insane asylum they are the most troublesome of all cases; in the courts they are the repeaters that are sent to gaol regularly for intoxication; and in all circles they are the pests of society, continually drinking, committing petty crime, and outraging society by all kinds of excess. In inebriate asylums they abuse all the privileges, and bring every effort to help them into discredit, injuring the other patients, and continually keeping up an atmosphere of insubordination and irregularity. When discharged, are full of slanderous stories about the asylum, and stand around the corners of streets advertising the failure of the institution to effect a cure in themselves. The State of Connecticut has chartered a company to organise and conduct an asylum workhouse for this class, which will provide active work, sharp restraint, with medical care and educational influences; not with the idea of permanently curing these men, but to relieve the community of their presence and make them self-sustaining. The law provides that such cases may be sentenced to inebriate asylums for a period of three years. After the first year they may be released on parole at the option of the managers. The building is not erected, only a farm has been bought for this purpose; but the plans and much of the preliminary work has begun. On simple, economical reasons, the value of such an asylum is apparent. Some of these cases are permanently restored in the imperfect asylums of to-day. Inebriates of this character are reported cured from long confinement in many of the English prisons, under adverse conditions, and without anything but absolute control and regularity of surroundings. In a military workhouse can be combined all the means and methods of treatment which are especially applicable to such cases. This class of inebriates are universally misunderstood, and never studied clinically; yet they will be found to have a distinct cause, development, symptomatology, and termination. Nothing is more erroneous than the very common expression of the incurability of inebriety, based on empirical efforts to cure the criminal or insane inebriate, by means that are not only inadequate, but unfounded on any knowledge of the nature of the disorder. I protest against all deductions to what inebriety is, and how it may be treated, founded on a limited observation of such cases, which are always exaggerated types. The second class of inebriates who come for treatment are less prominent, and are
What shall we do with the Inebriate?

the victims of circumstances and some accidental causes not understood. They come from the middle classes, and represent the hard-working, active brain-labour of the country. Heredity is always more or less obscure; and, usually, the history of nervous and constitutional disease is not in the direct line of inebriety, but in some collateral branch. They are particularly noticeable from the prominence of delusions of strength to stop all use of spirits at their pleasure. Yet they never do, notwithstanding all their past failures, insist, with earnestness, that they have the full power and capacity to recover. In these cases there are general conditions of ill-health present, such as general exhaustion, anaemia, neuralgia, and functional disorder of the heart and stomach. Injuries of the brain and spinal cord, profound shocks from both mental and physical causes, sun-stroke, and exhausting diseases, can be often traced as the active causes in many cases. Dr. L. D. Mason has recently published some very significant studies into the causes of inebriety, which indicates how much of this subject is almost entirely unknown. This class will be found to represent an average physical and mental capacity, with, not frequently, great activity, and ambition to attain either wealth or distinction in life. From various circumstances, depending on ill-health, irregularities of living, bad surroundings, over-work, mental worry, and many other causes, the use of alcohol commences as a temporary relief, and culminates in a toxic condition or intoxication. From this time, pathological changes begin, and alcohol is demanded ever after. After a period of constant use of alcohol, they frequently merge into periodic inebriates, with a free interval of more or less uncertain length. Many of these persons are strong temperance workers in the free intervals, and appear to be in good health and in full possession of their will-power. To their friends they are enigmas, and seem to be under control of an evil spirit, and are never able to understand why or when they will drink. These are literally very hopeful cases, even in the chronic stages, and, when they remain a long time in the asylum, recover. I think that a very large per centage of these cases can be permanently cured. They need, most of all things, seclusion from alcohol and physical rest, also change of life and activities, with long-continued hygienic and medical treatment to build up the system. These are the cases which get well all unexpectedly, from no special means other than the will to do so. They are often the shining examples of prayer-meetings and temperance societies, and seem to relapse and recover in the most mysterious, uncertain manner. In the asylum treatment of these cases great care is necessary in the matter of restraint and effort to keep the mind occupied all the time. Each case demands special conditions and methods of treatment, which shall educate the patient's mind and teach him to observe the utmost regularity in all habits and duties of life. After treatment in an asylum, such cases need a change of labour and living, also freedom from excitement or long-continued exhausting work. If the mind can be kept active and buoyant, the vigour of the body is sustained. Such cases cannot be treated at home, under any circumstances, but must have both change of life and surroundings.

A third class of inebriates, differing from both of the others mentioned and equally prominent, are always seen in the asylum. They are noted for the exhibitions of great extremes of strength and weakness. The patient will stop the use of alcohol at home suddenly, and under the most adverse conditions come to the asylum, either alone or with his friends, and give strong evidence of great earnestness and honesty of purpose. On the way to the asylum he will pass through great temptations and never touch spirits; but in one hour after arrival, he will plan and execute the most cunning schemes to get spirits. He will exhibit at times a kind of a malicious mania for alcohol, and then
be bowed down with the greatest contrition and sorrow, and do all that is possible to repair the injury. Unlike the class last mentioned, there will be found a certain method in both his relapses and recoveries, that to many will seem exceedingly suspicious. This class always inherit an uncertain nerve and brain condition, and come very often from intellectual and hard brain workers. Politicians, lawyers, editors, brokers, railroad men, and over-worked clergymen contribute the largest number of descendants to this class. They usually possess a degree of talent that borders on genius or madness, and seem to have no fixed principle or purpose in anything. They often come from wealthy, luxurious surroundings, suffering in childhood from bad food and no training, and general imperfect physical growth, nervous excitement in early life, wine on the table, surfeit of food and many other causes which break up natural healthy growth. I have traced the early causes of many of these cases to nervous shock and exhaustion at puberty from the first sexual act. A condition of feeble reaction from any kind of exhaustion is always present, and wine and spirits are used to counteract this effect. They are always filled with the delusion that the moderate use of alcohol is a normal healthy state, and all their ideals of life centre on this condition. In the early stages they are constant drinkers, but later, when more debilitated, are impulsive, irregular inebriates. In some cases a wonderful power of self-control is seen, which seems to be of the nature of paralysis, by which the patient will unexpectedly stop all use of alcohol and go about in the worst conditions of temptation for a long time; and the only explanation which he gives is, that he made up his mind to drink no more. A remarkable example of this was seen in the history of Judge Raymond. When thirty he was a confirmed inebriate, and given up by his friends. All unexpectedly he resolved not to use alcohol again until he was seventy years old. From this time he was a strict temperance man, and finally became a judge, and was a very eminent and exemplary man. On the morning of the seventieth birthday he became very much intoxicated, and died two years later of delirium tremens, having drank in the meantime almost constantly. These cases are frequently marked in the later stages by delusions or suspicions of injustice from their nearest friends. Extreme degrees of mental and physical exhaustion characterise the case in its later stage. In treatment, the necessity for absolute quiet and rest with extreme regularity of surroundings and varied restraint are apparent. This class are for a long time irritable and fault-finding, but seldom are unmanageable. They enter heartily into all plans of treatment for themselves, and although they will sympathise and plan to get alcohol for the newly arrived patient, yet never touch any themselves. They are often very emotional and deeply religious, and recover readily in ordinary asylum treatment, but seem to be influenced by circumstances and health more than any other classes. Their ultimate recovery depends on complex conditions, which are largely unknown, and are always questions which the intimate study of each case will determine. In this class I have seen less complicating diseases, and been able to trace a range of connected symptoms from the beginning to the end in many instances. The study and successful treatment of these cases can only be assured in well-ordered asylums. In this very general description of three classes of inebriates, which appear in every study of this subject, the varied complexity of the causes requiring special means are apparent. No question of treatment or means to lessen the number of inebriates can be determined except from a clinical study. Inebriety is curable to a large degree, and if taken in the early stages, recovery would be the rule, and failure the exception. Even now many chronic cases, under adverse circumstances, recover permanently, and nearly all are largely benefited by asylum restraint and medical care. Inebriety will be no mystery when we shall understand its
nature and causes, and its treatment will be no doubtful matter when we can classify and treat each case according to its special demands. We have indicated that inebriety can be reached most successfully: **First.**—By isolating the patient in a special home or hospital, where all his surroundings can be under the care and control of a physician. **Second.**—Here a special study of the case will reveal the minute chain of causes which have increased or directly brought on the disorder. **Third.**—From this study will be marked out the particular treatment essential to the cure in each case. The second general fact covers all those preventive measures and hygienic means that will lessen the numbers of persons who suffer from inebriety. Inebriety is both epidemic and epidemic. In the former it is incident to our times and civilization, following the intensity of American life and the revolutions of society which spring from new inventions, with new and constantly changing conditions of living. The type is also different, notable in the precipitation and rapidity of process of degeneration and exaggerated emotional symptoms always present. Very many forms of mania and delusions in inebriety seem almost peculiar to this country. Inebriety is also epidemic, and moves in cycles and waves, appearing in certain towns and cities, and for a few years raging with great intensity, then dying away, only to re-appear after a certain interval. In a New England village of a few hundred inhabitants, twice within eighty years inebriety has been noted for its prevalence. Following these were distinct seasons of great freedom from its presence. Records of police courts show this fact quite distinctly. In frontier towns this epidemic character of inebriety is also apparent. Further studies of the social progress of the age will point out some of the many causes which gather and break out into inebriety, developing through different stages, then declining to almost extinction. The rise and fall of great temperance movements are but ripples on the surface of these tidal currents of inebriety. Inebriety will follow certain conditions of living in society, and in the individual, with the same certainty that the plant comes from the seed. It is always epidemic when the causes are in the surroundings and social conditions, and clearly follows a certain course to extinction. In the individual or family it may remain long years, or one or two generations, but, through the wise limitation of nature, change and extinction always follow. In the almost unknown field of prevention the study of heredity meets us at the outset. Already we have found certain inherited conditions extremely favourable to the development of inebriety, and in such cases may expect, with much certainty, the appearance of this disorder. Applying these and other facts, we shall be able to prevent it, and not only antagonise, but remove many of the active causes. From this study we shall learn what special appliances to use and how to conduct the treatment, so that restoration will be permanent; also, to be able to distinguish between the incurable and curable conditions. My studies into the causation of inebriety have pointed to childhood as a period of extreme susceptibility to this disorder, which may break out in manhood, or later, from the application of peculiar exciting conditions. I am convinced that, at this period, perisions of nutrition, defects of digestion, begin, which become the starting-point of inebriety. Children that are over-fed, using food far in excess of the wants of the body, or food that is defective in some quality, always have a starved, defective organism, whose functional activity is perverted and irregular. Over-stimulation of the digestive organs, during this period of growth, is followed by exhaustion and demands for relief, which alcohol seems to meet most readily.

The children of the very poor and very wealthy are subject to constant irregularities of hunger and satiety, and inebriety is often but an expression of the injury which follows. The prevention of inebriety should begin with a study of the diet and nutrition.
of the tissues in childhood, and the removal of every obstacle to the healthy growth of the body. Every condition that perverts or prevents this healthy growth favours the development of both functional and organic disease, of which inebriety is prominent. Want of education and general training, which shall extend to the purposes and objects of life, very commonly develops inebriety. The child grows up with all its faculties undisciplined, every emotion and appetite indulged in, with no motive except the gratification of every physical want, all the passions constantly stimulated, and in an atmosphere of unhealthy excitement inebriety is a natural sequence. I have no doubt that the present system of education, particularly over-stimulating the brain and nervous system in bad sanitary surroundings, to the neglect of the physical growth of the body, which ends in both physical and mental dyspepsia, often lays the foundation for inebriety. This is verified in any general study of the health and mental condition of college and highschool graduates. The unnatural and perverted tastes and feeble will power, with ignorant eccentricities often seen in this class, are the fertile fields which need only the exciting cause to break out into this malady. Certain seasons of the year, marked by sudden climatic changes, and certain kinds of labour noted by extremes of excitement, muscular activity and exhaustion, also all bad physical and social surroundings, are among the predisposing causes which must be removed and studied in both the treatment and prevention of inebriety. The early treatment of inebriety will be practically the most active source of prevention. Remove the patient from his dangerous surroundings, and effectually quarantine him with the first intimation of the disorder, and his cure is assured. Neglect this until he has become chronic and the difficulties are increased, also the possibilities of cure diminished. No other disorder is more difficult to cure in its chronic stages. The public mind must outgrow the crude notion that inebriety implies vicious weakness on the part of the patient. They must realise that he is but the victim of physical laws, whose violation must be paid with great exactness. Dyspeptic persons should never use alcohol as a medicine, or any form of bitters which contains spirits. Epileptics, hysterical persons, and those who suffer from nervous injury of any kind, such as shock to the brain from sunstroke, violent concussions of the system, followed by symptoms of headache and any disorder of the spinal cord, should never use alcohol in any form. Exhausting diseases and conditions of extreme anemia, and all the forms of inflammation of the mucous membrane of the stomach and bowels, also contra-indicate the use of this drug. In many cases the free use of ice-water has produced an acute attack of dipsomania.

From a careful study of the sanitary and psychological conditions which surround us, there will be found many special exciting and predisposing causes which can be removed, that are almost unknown to-day. The mortality from inebriety exceeds all other maladies which affect the race, and when we shall study it as a physical disease and understand the causes, its prevention and cure will mark a new era in the civilisation of the world. The question, What can we do with the inebriates? can and will be practically answered in the future, by these methods which I have merely outlined.

The frontier lines of this subject have been hardly crossed by scientific investigation. Standing on the borders we can discern faint outlines of hills and valleys, and vast stretches of unexplored lands full of mystery, that will be found, under the domain of law, rich in physiological fact and principle. A knowledge of this unexplored land will vanish the fog and traditional superstition which hangs over it, and all the conflict of opinion and theory will be solved, and inebriety will be known and studied as a physical disease, both preventable and curable to a large degree. Some of the facts which I have made prominent
THE USE OF STIMULANTS IN WORKHOUSES.*

By Norman Kerr, M.D., F.L.S.*

Our subject for to-day’s discussion embraces three distinct and independent questions, “Stimulants in Workhouses” may be considered with reference to:—(1) The officers’ beer ration; (2) The beer allowance to healthy paupers; (3) The use of intoxicating drink in the treatment of the sick poor.

THE OFFICERS’ BEER RATION.

On the first question, the officers’ beer ration, there will probably be little, if any, difference of opinion.

Intoxicating liquids are not essential to health. They repair none of the losses the body is constantly undergoing. They furnish us with no new supplies to replace the material of the human frame, the fluid so indispensable to life, the vital heat, and the force we are ever losing. Man’s power to work, both with brain and muscle, is not increased, but rather diminished by drinking. Alcohol is not a necessity, but, at the best, a needless luxury, never to be indulged in but at a certain risk.

Intoxicating drinks are not conducive to good order and discipline.

Where these beverages are in ordinary use a disturbing agent is present, which ever and anon excites to insubordination and disorder. The recent experience of Dr. Davies at the Barming Heath Asylum corroborates the experience of all similar experiments. He found that the ordering of the establishment was more regular, and the conduct of the attendants more satisfactory when they received no allowance of liquor than under the previous régime.

The Parliamentary return of 1871 stated that the officers of the Union of St. Austell, Cornwall, were all total abstainers (an honourable distinction, truly!), and that the master of the Eton Workhouse, though allowed ale, did not drink any.

The proportion of the expenditure on alcohol for the officers and healthy inmates is often considerable. In one union, where the whole alcoholic expense was £300, no less than £390 was for officials and inmates not under medical treatment. The 1871 return showed that in England there were 171 unions spending nothing on beer, &c., for the staff, while 413 supplied their officers with intoxicating beverages. In Wales, of 45 unions, 33 gave no beer ration. In Ireland last year (1880), 87 of the 163 unions em-
braced in Mr. Whitworth’s return to
the House of Commons supplied to
their officers no intoxicants.

Of the 171 English unions in which
there was no officers’ beer ration, a
number gave an allowance in money,
varying from £2 to £4 11s. per
annum.

It is manifestly fair that officers,
who either are abstainers on principle,
or do not care to drink the beer al-

dowed them, should have a cash or
other equivalent. In St. Marylebone
some officials have a ration of some
really valuable articles of food instead.
It seems to me that there would be
very few dissenting voices in the
country if that habitual offender
against public and private morals—
strong drink—were prevented from
disturbing the good order and govern-
ment of workhouses and infirmaries
by the abolition of the whole official
allowance of liquor, with a reasonable
pecuniary grant in its stead.

BEER FOR THE HEALTHY PAUPER.

2. The inmates of workhouses may
be divided into two classes—the sick,
who are under medical treatment;
and the whole, who need no phy-
sician. Of the former we will speak
presently. Let us consider, for a few
moments, the relationship of the
latter to intoxicating drink. In many
unions it is the custom, on various
pretexts, to supply inmates not under
the therapeutic care of the medical
officer with a regular allowance of
beer, or other form of strong drink.
Cleaning windows is by some Boards
of Guardians apparently deemed so
exhausting an operation as to require
an alcoholic reviver. In other unions
washedwomen are favoured with the
too-common indulgence of the sister-
hood—to wit, a daily modicum of beer,
or other intoxicating malt liquor;
though the one complaint of the
managers of laundries, and the mis-
tresses of private households, is the
imperfect washing, and the destruc-
tion of the clothes washed, through
the drinking habits of the washers.
One union furnishes the alcoholic re-
ward also to cooks, scullery-maids,
extra night nurses, and whitewashers.

Where intoxicating drinks abound
there is frequently need for moral
whitewashing.

In one union the baker and laun-
dress come in for a share of the so-
called “good things.” In another the
luxury is extended to the stokers, the
pantrymen, the carpenters, and the
sitters-up with the sick. Alas, poor
sick! How many untimely deaths,
even in the homes of the wealthy,
have I, a helpless looker-on, seen
brought about by the unseasonable
somnolence of the night attendant,
who ought to have been wide-awake
and alert during the night watches, at
the critical stage of some serious acute
ailment, when a few minutes’ relaxa-
tion of vigilance has meant the loss
of a human life!

In yet another union the tailors are
treated to the favourite dole. In some
unions the furnacemen, the engineers,
the gardeners, and the sons of St. Cris-
pin, are not left out in the cold. There
is no end to the excuses for extending
the alcoholic ration to paupers not sick.
In one northern workhouse over 1,300
pints of beer were in 1871 presented
to inmates employed in fieldwork and
in the garden. The pumping of water
is by one Board regarded as establish-
ing a claim to the daily portion of a
pint of ale. Two unions, in whose
ordinary dietary alcohol has no place,
display their gallantry, the one by
allowing women ale on washing days;
the other by giving gin instead of beer
to the nurse.

The remarks on the non-necessity
of alcoholic drink under our first head
apply with equal force under this head.
The uselessness of a ration of alcohol
to a healthy pauper inmate, is at least
as patent as is its uselessness to the
permanent official staff. The ability
of the pauper helper to work is not
increased, but rather hindered. But
even if alcohol could goad him to in-
creased sustained effort, there can be
no justification for extracting from
him a greater amount of work than
good nourishing food, unaided by
artificial stimulants, can accomplish.
The practice is as unwise morally as
it is futile physically. Alcohol is the
prolific mother of disturbance, and
The Use of Stimulants in Workhouses.

where intoxicating liquors are, there the cost of supervision is increased.

ATTITUDE OF THE LOCAL GOVERNMENT BOARD.

Intelligent Boards of Guardians are alive to this. The special Committee of the West Derby Union (1871) strongly recommended the discontinuance of the supply of ale and porter to able-bodied paupers, because, among other reasons, this tended to keep alive the taste for drink in those who, for the most part, had been pauperised and sent into the workhouse by indulgence in drinking habits.

The Local Government Board—the long and efficient services of whose late Secretary, Sir Hugh Owen, have recently been recognised by a well-earned knighthood—have given utterance to no uncertain sound, as will be seen from the Consolidated Orders, Article 107: “The paupers shall be dieted with the food and in the manner set forth in the dietary table which may be prescribed for the use of the workhouse, and no pauper shall have or consume any liquor or any food or provision other than is allowed in the said dietary table, except on Christmas Day, or by the direction of writing of the medical officer, as provided in Article 108.” Article 108: “The guardians may, without any direction of the medical officer, make such allowance as may be necessary to paupers employed as nurses or in the household work, but they shall not allow to such paupers any fermented or spirituous liquors on account of the performance of such work, unless in pursuance of a written recommendation of the medical officer.”

SAVING IN MONEY.

In St. Marylebone £300 a year had been saved, for the last six years, by the cessation of this beer allowance to the healthy. A similar result, with other marked benefits, has rewarded the same action on the part of the Manchester, Liverpool, Sheffield, Newcastle-on-Tyne, Gateshead, Chester, Wrexham, St. George's-in-the-West and St. Pancras, London, and many other unions.

WHO IS RESPONSIBLE?

It may be said that the medical officer is to blame for the continuance of this reprehensible practice, which has been condemned alike in many large unions and by the Local Government Board. This is a mistake. The medical officer is often expected, as a matter of form, to legalise the expenditure by affixing his signature; but practically the guardians have this matter in their own hands.

NO DIFFICULTY.

In a few places there has been temporary trouble from the stoppage of the supplies, as in Brighton, where eight laundry women struck, and in St. George's-in-the-West, where the washerwomen took their discharge; but the firmness of the authorities soon quieted the commotion, which proved to be but a storm, if not in a teacup, at all events in a pint pot.

IMPROVED DISCIPLINE.

The experience of Dr. Davies at Barming Heath and Dr. McCullough at Abergavenny shows that no one but the brewer suffers from the change. Many shameful scenes have been witnessed, from the continual fostering of the drink crave in pauper inmates by a daily ration of strong drink. In London few days pass during which I do not see males and females, in the garb of pauperism, drunk in the streets; and the return of inmates after a day's leave is not unfrequently the cause of violent and most sad exhibitions at the workhouse gates. In Sheffield, one Christmas, twenty men returned at night to the house in a state of intoxication. In Fulham quite recently the leave of a female inmate, of seventy-seven years of age, had to be stopped owing to this cause. Looking dispassionately at the evidence, what true friend of the poor can cavil at the proposal to totally prohibit the supply of strong drink to the healthy inmates of our parochial establishments?

STIMULANTS IN DISEASE—AN INDEPENDENT INQUIRY.

3. This is an entirely different topic from the two we have just been con-
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Considering. The allowance of strong drink to the healthy pauper is one thing; the use of alcoholic liquors in the treatment of disease is quite another, and a separate thing. That an article of food or drink is unnecessary in good health, is no reason why it may not be most useful in the cure of bad health. Arsenic, strychnia, and prussic acid are at once useless and prejudicial to the healthy, but to the sick, when wisely administered, they are of almost priceless value. We may, therefore, discuss the question of stimulants in the treatment of the sick poor without prejudice, and with no bias from any opinion we may have formed as to the influence of these intoxicating liquids on the body and brain of the hale and hearty.

No Method in Stimulation.

In looking over the Parliamentary statistics of the amount of alcoholic drinks used in the various unions throughout the kingdom, one is struck with the extraordinary diversity of practice. In Cumberland, in 1871, the expenditure for alcohol was £327 for 632 paupers, or fully 10s. 4d. per head. In Berks it was £3,490 for 1,738, or fully £2 per head. In Wales, in the same year, the average for each pauper presented such varying rates as 2s., 8s. 2d., and 17s.

The discrepancy exists among both the outdoor and indoor poor. In England, the cost for the indoor poor was: in Cornwall, 12s. 10d. per head; in Devon, 14s. 6d.; in Durham, £1 10s. 8d.; and in Berks, £2 14s. In Wales, the average in Carnarvon was 4s. 7d.; in Anglesey, 5s.; in Denbigh, nearly £2; and in Radnor, £4 6s. 5d.

For the outdoor recipients of parochial aid, there is as marked a variety of stimulant prescription. At Chester the average per pauper was 1s. 10d.; at Cornwall, 4s. 2d.; at Dorset, 10s. 0½d.; at Leicester, £1 8s.; and in Berkshire, £1 13s. In Wales, the cost ranged from 9s. 8d. per head in Carmarthen to 4d. per head in Cardigan. In one English parish with five district medical officers, in one period of three months, one gentleman prescribed two gallons of wine, half a gallon of brandy, and one and a half pints of gin for 488 cases; another, half a gallon of wine and two and a half gallons of brandy, for 505; another, three pints of wine and four gallons of brandy, for 580; another, three and a quarter gallons of wine, for 1,100. On the other hand, the fifth gentleman ordered neither wine, brandy, gin, nor any form of intoxicant, for 1,086 cases.

In Ireland, in 1872, there were four unions where no intoxicating liquor at all was prescribed, while in the unions where these beverages were ordered the cost during the year varied from £1 5s. 10d. per inmate at Donoughmore to three farthings per inmate at Lurgan. In Ireland, in 1880, there was only one union, Armagh, in which no strong drink was consumed, and the average cost per pauper in the remaining unions ranged from one-fifth of a penny to 7s. 10½d. per head.

In Scotland in 1876 the minimum average expense per inmate was 1s. 2¼d., and the maximum £2 8s. 7½d.

London shows as pronounced an eccentricity in quantitative stimulation as characterises the provinces. In only one London workhouse in 1869 was whisky ordered, and in only one was the liquor bill for Bermondsey would have been £837 instead of £199.

From these confused and contradictory figures it is clear that alcoholic stimulants are prescribed to the sick poor on no clear and well-defined general lines. Whether refuse stimulation, restricted stimulation, or no stimulation at all, be the best practice, the members of the Poor-Law Medical Service, like their confrères in the profession at large, seem (shall we say hopelessly?) at variance. Alcohol is a powerful drug, whose value and mode of administration ought surely, by this time, to have been arrived at with some approach to accuracy.

Effect of Diminished Stimulation.

In some unions there has been a
considerable reduction in the amount of stimulants consumed. This has specially been the case at Wrexham, St. George’s, Hanover Square, Barnsley, and Helston. What has been the effect of this reduction? The medical officers and masters report an improvement in discipline and in the conduct of the inmates, with no impairment of health or increase of mortality.

THE LIVERPOOL FIASCO.

Mr. Anderson, of Walton, Liverpool, alone reports that the death-rate was raised during the few months he greatly limited his prescription of alcoholic liquor, and that the period of convalescence was protracted. He however, furnishes no data on which such an opinion can justly be founded. As the Lancet remarks, his figures are too bare to be of any scientific value. There has been a Local Government Board inquiry on the spot, the report of which has not yet been issued; but I have from the first never hesitated to predict that no information which can be obtained will be complete enough to warrant any conclusion whatever on the influence of alcoholic medication on the rise or fall of the death-rate, or on the duration of the convalescence. There can be no doubt that the rate of mortality was higher during the reduced alcoholic régime, but the strong probability is that other factors were the cause of this augmentation. Mr. Anderson deserves praise for his candour, but I feel convinced that no one more deeply regrets than he does himself the hasty and untenable conclusion he came to on data too incomplete to justify any judgment one way or the other.

IMPORTANT MEDICAL TESTIMONY.

Per contra, many medical officers, who have given a lengthened trial to non-alcoholic treatment, have given utterance to views totally opposed to Mr. Anderson’s. My late friend, Dr. Simon Nicolls, of Longford, abandoned his former practice of giving alcohol freely during the cholera epidemic of 1848, and was of opinion that the change reduced his mortality in that fell disease from 94 per cent. to 33 per cent. His results in fever were also very good. A host of medical officers, including Mr. Brittain (of Chester), Dr. Collenette (of Guernsey), the late Mr. Bennett (of Winterton), Mr. Sleeman (of Tavistock), and Dr. Dixon (of Watlington), have expressed their satisfaction with the effect of their almost total disuse of alcohol as a medicine.

PERSONAL EXPERIENCE.

In my own treatment of the sick poor I have very rarely had occasion to prescribe an intoxicating drink. Knowing the value of alcohol in certain cases I would not hesitate to order it, if it seemed indicated, to a dozen patients to-morrow; but it has so happened that only on rare occasions has there appeared any need for it. In its administration I have followed these rules:—1. Never to order an intoxicating drink if any other remedy will answer the purpose as well; 2. To prescribe an alcoholic remedy, when indicated, only in definite doses for a defined time, the medicine not to be thereafter continued unless again ordered; 3. When alcohol is indicated, to administer it, if possible, in the form of proof spirit, or an alcoholic tincture or other pharmaceutical preparation, and never to resort to an intoxicating beverage unless the better defined pharmaceutical form either is not available or fails.

INFLUENCE OF ALCOHOL AS MEDICINE NOT YET KNOWN.

What is the truth as to the discriminate alcoholic treatment of the sick poor on the period of convalescence and on the mortality? It has been contended by some ardent nepholists that the entire exclusion of alcohol from the therapeutic armament hastens recovery and lessens mortality. Of this, however, we have no proof. Statistics have been forthcoming, showing a marvellously low death-rate, such as the wondrous success of a medical man who, amid the plaudits of a delighted audience of the general public, exultingly pointed to some twelve cases of typhoid fever treated
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with no alcohol, and without a single
death; pitting this limited record
against a large number of cases of an
eminent authority on fever, who, like
all practitioners with considerable ex-
perience of this disease, had, of course,
some deaths.

No language can be too strong by
which to expose the fallacy and decep-
tion of such special pleading. Such
statements can only mislead the unin-
formed, obscure the truth, and bring
discredit on the cause of temperance
in educated and scientific medical cir-
cles. You may have an astonishing
run of fortunate cases in almost any
disease or operation, as I have myself
experienced repeatedly, but two or
three, or more, consecutive deaths de-
stroy your average, and dissipate the
fond delusion that you have been more
successful in your treatment than any-
one before you. Prior to venturing to
...tabulate your results and to deduce a
death-rate, you must have a collection
of cases sufficient to warrant you in
arriving at an estimate.

There are some who contend that
the smaller the quantity of alcohol
prescribed the lower will be the death-
rate. What do parochial statistics tell
us as to this? Simply that as yet there
are no facts known to us from which
we can formulate a general law. Take
the Mountmellick inquiry, for example.
At first sight, the mortality would
...follow the ratio of
stimulation. In twenty Irish unions,
in which the cost did not exceed 1s.
per head of the average number re-
...mortality was 22½ per cent.
...mortality was 22½ per cent.
...mortality was 25 per cent. Let us analyse
these returns. Where the deaths
show a percentage to the average
number relieved of 8 per cent., the
cost for stimulants was 2s. 7d. per
head. Where deaths were 10½ per
cent. it was 38. Where they were 12
per cent., it was 8s. 4½d. Where they
were 18 per cent., it was £1 5s. 10d.
Where the deaths were 20½ per cent.,
the cost was 2½d. Where they were
21 per cent., it was 1½d. Where they
were 28 per cent., it was 3½d. Where
they were 30 per cent., it was 5½d.
Where they were 35½ per cent., it was
three farthings! With an average
dearth-rate of 12½ per cent., the ex-
penditure was, in one union, 6s. 4½d. per
head; in a second, 12s. 6d.; and in a
third, 17s. 6d.; while £1 5s. per head
gave a mortality of only 18 per cent.
No alcohol at all gave, in one work-
house, a mortality of 19 per cent., and
in another of 28 per cent.!

In 1880 Marylebone, with an ex-
penditure per head for alcohol of
6s. 1d., had almost the same death-
rate as Walton, with an expenditure
three and a half times as great, or £1
18. 7½d. The deaths in the latter were
1 in 3'86, and in the former, one in
3'53.

Liverpool, though spending only a
fourth of what Paddington does on
alcoholic stimuli, has a much higher
rate of mortality, 1 in 2'37 against 1 in
3'36.

In Scotland, in 1877, the Abbey
parish, Paisley, had only a fourth of
the proportionate number of deaths
that there were in Morayshire, though
paying more than five times as much
for alcohol as the latter parish.

From these and other as striking
analyses, I find that in no return as
yet published has there been any reli-
able evidence of the effect of alcoholic
prescription on the death-rate. To
be candid, we know nothing whatever
about the truth. The simple fact is that
the circumstances of two unions are
not alike, and therefore the records are
not comparable. Before we can catch a
glimpse of the actual reality, we must
have a knowledge of all the contribu-
tory factors. Only when we can elimi-
nate all the other causes, such as the
health of the particular workhouse and
neighbourhood, the nature and dura-
tion of the disease, and the condition
of the patient on admission, may we
hope to discover the influence alco-
holic liquors, employed medicinally,
exert on the recovery and on the vital-
ity.

As a body of learned and scientific
men, it is our bounden duty to neither
suppress nor obscure the truth. Let
us then be honest, and declare without
The Use of Stimulants in Workhouses.

reserve that the parochial data, hitherto available, have been too incomplete to warrant any inference whatever as to the influence of the careful administration of intoxicating drinks as a therapeutic agent.

DUTY OF THE MEDICAL TEMPERANCE ASSOCIATION.

It is, too, our province to caution ardent social reformers against the use of medical testimony for purposes the witness never contemplated when he gave his evidence; and against the practice of quoting the names of medical men, in support of the non-alcoholic treatment, without authority or permission, or the clearest of proof that the testimony has really been borne. I have myself been held up in provincial parochial assemblies as one deserving of praise for never prescribing an intoxicant in sickness, praise which is quite undeserved, as I should be very sorry indeed to undertake the medical care of patients without such agents at command. Only a few weeks ago, during an important discussion on workhouse stimulants by an influential assemblage, certain physicians were referred to as being in favour of the very limited prescription of alcohol, than some of whom I know of no medical men more profuse in their ordering of strong drink.

COUNSEL TO ABSTAINING GUARDIANS.

Here let me proffer a word of counsel to such friends of abstinence as may be guardians. Not once, but many times, have I observed with pain persistent and bitter reflections at Boards of Guardians on the skill and discretion of their medical officer because he thought fit to order stimulating drinks as medicines. With my whole soul do I indignantly protest against such tactics. As a physician I can allow no private person and no corporate body to dictate what medicinal remedies I shall prescribe for my patients. The doctor, and the doctor alone, is responsible for the treatment, whether the suffering one be a pauper or a millionaire. The Local Government Board rightly insists on this, for the moment the medical officer is restricted in the choice of medicines, that moment someone beside himself assumes part of the responsibility. Between the two stools the unfortunate patient is tolerably sure of coming to the ground. Let guardians be content to use their moral influence with the medical officer, and courteously ask his perusal of the literature on the subject; and I am certain that no honourable practitioner will refuse to make a special study of the question. While I have known much harm done by irritating and carping criticism, I have known marked benefit follow a respectful request from a Board to their medical officer to consider the whole matter, with a view to ordering as little alcohol as he conscientiously can.

PRACTICAL HINTS.

As regards the outdoor poor, the thirsty, though healthy, friends not unseldom consume the liquor ordered for the sick person; and, in order somewhat to meet this difficulty, in some unions wine is administered in a medicinal tincture with gentian or other bitter. This is an excellent plan; but it is well to beware of enhancing the attractiveness of brandy, as is done in one parish to my knowledge, by giving it in cinnamon water.

There can be little doubt that the expenditure on alcoholic drinks, as medicines for the sick poor, is, in many instances, unwise extravagance. I know cases where the guardians and all the officers except the doctor are alive to the fact that the charge for intoxicating drinks might with propriety be only as many pounds as now it is hundreds. Such a condition of things is a reproach to us as a profession.

Let me entreat my colleagues for their own reputation, for the credit of the profession, and for the benefit of their patients, to seriously study the question of alcohol. Our knowledge of the nature of this drug, and of its action on the physical and mental constitution, has of late years been rapidly increasing. One lesson we ought to take to heart is that it is a
powerful and dangerous remedy, but too apt in many cases to prove more fatal than the original disease.

There seems no reason to doubt that the rate of mortality will not be increased, nor the convalescent period lengthened, by the careful and discriminate prescription of alcohol, and as this agent is ever a disturber of physical, moral, and social order, do I ask too much when I earnestly pray you to resort to an intoxicant only when there is no equally good therapeutic agent available, and when you do order this potent drug, that you will only do so in definite doses for a definite purpose, and for the immediate occasion only? By acting on these lines you will nobly fulfil the duties of your high calling, you will enhance the dignity and standing of an honourable profession, you will meet with the approval of your own conscience, and do some little to strengthen the weak and cheer the faint-hearted of; it may be, not a few of your sorely-tempted patients and their friends.

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REMARKS UPON CLINICAL PHASES OF POISONING BY ALCOHOL.*

By FRANK WOODBURY, M.D., Physician to the German Hospital, Philadelphia, &c.

"Chinese historians affirm that wine in which the feathers of the Tchin are macerated becomes a deadly poison."† Modern science confirms this clinical observation, but ascribes the fact to a more constant and less fabulous cause. Alcoholic liquors are poisonous because they contain alcohol. Since the various intoxicating beverages in use consist essentially of dilute ethyl alcohol, their toxic effects may be considered in common under the comprehensive title of alcohol-poisoning.

From the universality of the use of these beverages by all races‡ of men and in all ages, it would at first sight appear that alcohol might be a valuable food. So it was considered by Liebig; whose views were, however, entirely controverted by Perrin, Lallemand and Duroy, who showed that it was excreted by the lungs, the kidneys, and the skin, without undergoing oxidation in the body. Later observers, notably Subbotin, have shown that the ingestion of alcohol does not increase the excretion of carbonic acid, but, on the contrary, reduces it; does not raise the daily amount of urea, but lowers it; does not increase the temperature of the body, but positively reduces it; and does not increase haematoysis, but, on the contrary, interferes materially with the blood-making function. Such effects are certainly not those of food, but of an agent which directly impairs nutrition. Anstie and Dupré declared that a certain amount of alcohol disappeared in the passage through the system, and believed that this comparatively small amount was assimilated as food. Parkes and Wollowicz subsequently determined the maximum amount that could be thus assimilated by a healthy man to be from one and-

* Read before the Philadelphia County Medical Society, January 12, 1881.
‡ The Mohammedans and Hindoos have been cited as exceptions to this rule because such use is forbidden by their religion; but no one will claim that therefore drunkenness is entirely unknown among them.
Remarks upon Clinical Phases of Poisoning by Alcohol.

a-half to two ounces of absolute alcohol per diem.* The latter observers found that when an amount of liquor corresponding with only one ounce of absolute alcohol was administered, no alcohol could be detected in the urine. Upon repeating these experiments, however, I found in an adult of temperate habits, that so small a quantity as one-fourth of the above gave decided evidence of its presence in the urine; and I believe Anstie also detected alcohol in the urine after a single glassful of sherry. Possibly, this may be explained by idiosyncrasy, but it seems more probable that the person experimented upon by Parkes and Wollowicz had by habit acquired the power of consuming a greater quantity than could be assimilated by an organism unaccustomed to its use.

I am, therefore, forced to the conclusion that alcohol is not a true food in the sense that it favours nutrition in a state of health. Of its value as an accessory food under certain emergencies I shall not speak at present, as it is not germane to our subject; nor shall I enter upon a consideration of the dietetic use or abuse of alcohol. I have broached the subject of its use in health merely in order to establish, if possible, the commencement of its toxic effect. From personal experiment I have concluded that the standard adopted by recent experimenters, of one ounce and a-half to two ounces of absolute alcohol, is rather above the average amount which can be assimilated by the healthy organism, unless given in frequent and very small doses. Alcohol is eliminated slowly from the system, except when excessive amounts have been taken; it then rapidly appears in the urine, in which traces of it usually continue for from sixteen to twenty-four hours. In one case, within ten minutes after drinking about four ounces of whisky, a quantity of limpid urine was passed, whose specific gravity was only 1004½; it evidently contained considerable alcohol.

Of the fact that alcohol, in certain amounts, is capable of causing death, there can be no question whatever: on this point all writers upon toxicology are agreed, and numerous cases are cited in proof. Tardieu, for instance, records a medico-legal case where a man was induced by a wager to drink within a short time a bottle of brandy. He accomplished the task, fell to the floor in a state of coma, and died in sixteen hours.*

In its concentrated forms, when taken into the stomach, alcohol may cause death from local action upon the mucous membrane, producing softening and abrasion and violent gastro-enteritis. Two table-spoonfuls of 60 per cent. strength have proved sufficient to cause the death of a child.† As in other remedies, different effects may be expected when exhibited in the single toxic dose, in the interrupted dose, and in the continued dose. For convenience of discussion, although not exactly synonymous, let us consider the clinical accidents arising from the first two under the head of acute alcoholic poisoning, and those of the latter under chronic alcoholism. In so doing we shall follow the dictum of Magnus Huss, who first called the attention of the profession to the symptoms of chronic alcoholic poisoning under the title of alcoholism.‡

Let us first consider the effects of acute alcohol-poisoning, where coma, with complete muscular resolution, exists. Since this condition often terminates fatally, it is important to

* The equivalent of alcoholic beverages for a healthy adult, as stated by Parkes, is as follows: Two fluid ounces of brandy, or five ounces of the strong wines (sheries, &c.), or double the quantity of the weak wines (clarets and hocks), or twenty ounces of beer. "If these quantities be increased one-half, one and a-half ounces of absolute alcohol will be taken, and the limit of moderation for strong men is reached." Parkes's Principles of Hygiene, 5th ed., Philadelphia, 1878, p. 298.

† Deutsch's case, Schmidt's Jahrbücher, Bd. xxv.; from Preust. Vereinzeitung.
‡ Die Chronische Alcoholkrankheit, Stockholm, 1832.
distinguish it from insensibility from other and widely different causes, such as cerebral apoplexy, hysteria, uremic coma, opium-poisoning, concussion of the brain, and similar conditions. Dr. H. C. Wood says that "when the patient is simply seen in the advanced stage of deep coma an absolute diagnosis cannot be made out." * I think, however, that by attention to the objective conditions we may make a tolerably certain diagnosis by exclusion. Without taking up each of these different diseases with which alcoholism may be confounded, let me say, in brief, that, while in this condition coma and complete muscular prostration may exist, there is no difference between the two sides of the body as regards muscular tonus or surface-temperature; the latter is below rather than above the normal. More especially is it to be noted that there is no hemiplegia. The pupils are not constant; generally they are moderately contracted; before death they may dilate. There is no conjugate deviation of the eyes, as often occurs in apoplexy and injuries of the brain. Hemorrhage into the pons Varolii, however, is said to be accompanied by contracted pupils, coma, and general muscular resolution. The pupils in cerebral hemorrhage are usually irregularly dilated. MacEwen, of Glasgow, recommends the alteration which occurs in the pupils when the patient is disturbed as a reliable sign of alcohol-poisoning. The pupils in such a case will dilate temporarily if the patient be shaken or his beard pulled. This merely proves that the condition is rather one of deep stupor than of complete coma. I cannot believe that a case of true coma would have a mobile pupil, or, if it should dilate under such circumstances, that it could afterwards again contract.

I have not mentioned as distinctive the test commonly relied upon, i.e., that furnished by the alcoholic odour of the breath. Where it exists it furnishes confirmative rather than conclusive evidence, since the individual may have taken a stimulant just before the attack of illness, or it may have been administered afterwards. It thus becomes a nice question to decide in some cases whether it is alcohol or disease, or both. A much more reliable test is furnished by the urine. In all cases of narcotic poisoning the bladder, as a matter of routine treatment, should be evacuated by a catheter. The urine may be tested for alcohol by adding to it a small quantity of chromic acid test (potassium bichromate one part, acid sulphuric three hundred parts) as proposed by Anstie. But I would recommend the adoption of a slight modification, which has yielded very satisfactory results in the few cases in which I have tried it, as follows. In a medium-sized test-tube about a drachm of clear, colourless sulphuric acid is placed, and about three times the quantity of urine to be tested is then to be poured down the side of the test-tube, so as to prevent immediate mixing of fluids; a small crystal (split-pea-sized) of potassium bichromate is then dropped into the tube, which is then given a gentle rotary motion, so as to dissolve a little of the bichromate and diffuse it through the sulphuric acid. The tube is then set aside in the rack. The limpid lower stratum of liquid will in the course of from a few minutes to an hour assume a decided emerald-green coloration, the depth of the colour being proportionate to the amount of alcohol. This test may be confirmed by fractional distillation, provided that enough alcoholised urine can be secured to render it practicable.

In attempting to differentiate these cases from those of apoplexy, it should not be forgotten, however, that alcohol stands in a direct causative relationship to cerebral hemorrhage, as autopsies have proved. In seven cases of death during acute alcoholism, Tardeu * found two with hemorrhages

into the lungs, meningeal apoplexy in six, and in four there were also ventricular effusions of blood. This authority concludes that "in death coming on rapidly during the state of drunkenness, pulmonary apoplexy, and especially meningeal apoplexy, are lesions which, if not constant, are at least extremely frequent and almost characteristic." Hughlings Jackson reported a case in which alcohol impregnated not only the breath but the urine, and at the post-mortem examination a large clot was found covering nearly the whole of one hemisphere. The question of treatment of these cases I reserve for discussion farther on.

In other cases of acute poisoning by alcohol, convulsive symptoms supervene, and occasionally epileptiform seizures are very marked, probably owing to the action upon the medulla oblongata of blood deficient in oxygen. I have seen but one case of this kind, which occurred in a mulatto some years ago. After taking from the arm about ten ounces of extremely dark blood, the convulsions ceased and did not return. The next day the man was apparently as well as usual and ready for another spree. In this connection I may also be permitted to mention a case of catalepsy in a slender young man, about nineteen years of age, who came under my care some eight years ago, while resident physician in the Pennsylvania Hospital. He was brought to the institution perfectly unconscious and perfectly rigid. I remember there was some difficulty in getting him out of the carriage, as his body was fully extended, and he was carried in supported by his heels and his head. I found that on forcibly placing his limbs in any position they would remain thus extended in the air as if they were frozen. Upon lifting the closed eyelids the eyes were seen to be rolled upwards, and constantly in motion (nystagmus); the pupils were dilated moderately. It was said that this condition came on after drinking a single glass—his first glass—of whisky, and that he was not subject to such attacks. The application of faradic electricity quickly restored the patient to consciousness, and he would gladly have gone home at once if he had been permitted, but he was kept in bed till morning, and then discharged perfectly well, no further treatment being required.

I now come to speak of a form of acute poisoning from the abuse of alcohol, with which all are familiar, the so-called mania à potu or delirium ebrius. I will not, therefore, weary you with any reference to cases. Let me say, however, in a word, that the distinguishing trait of this condition is that it occurs as a result of an over-indulgence in alcohol in an organism unaccustomed to its use; it is the form that appears in men who go on occasional sprees, with periods of temperance or total abstinence between. Such cases have active delirium, characterised by delusions and homicidal tendencies. The condition is characterised by great nervous and vascular excitement, the face is flushed, the eyes bright, the ego elevated. The diagnosis and prognosis are based solely upon the history of alcoholism, for to all intents and purposes the patient is suffering from acute mania. When this condition is compared with chronic alcoholic poisoning, and in its characteristic form, delirium tremens, a marked contrast is seen to exist. This condition, as originally described by Sutton, is essentially one of nervous and vascular depression. The face is pale, the eye dull, there are illusions in place of delusions, a suicidal tendency takes the place of a homicidal, and melancholy replaces mania. Sleeplessness exists in both, but in one it is due to cerebral congestion; in the other to cerebral exhaustion. Tremor of the muscles is a marked symptom of the latter, and gives it its name.

I shall not here attempt a detailed consideration of the various diseased states that are associated with chronic alcoholism, since so many of them are only indirectly due to it. In the words of Boehm, "The poison

of alcohol, either alone or combined with other pathological causes, produces bodily or mental diseases which in themselves afford nothing characteristic of the effects of alcohol.” That it is a most fruitful source of disease, both physical and mental, all authorities are agreed, the tendency of alcohol being to cause fatty degeneration and sclerotic changes in all the soft tissues of the body. Nor shall I essay the enumeration of the various diseases attributed to alcohol; in the words of Bartholow, they may be summed up as “sclerosis and steatosis.”

The point, however, that I would now insist upon, and which I consider has a most direct bearing upon the treatment of alcoholism, is this: the long-continued existence of alcohol in the blood produces important changes in nutrition, to which the system in a measure accommodates itself, so that the patient requires less food to support life than without the alcohol (as in a case quoted by Anstie,* where a tailor drank a bottle of gin daily for years, and who took in addition a small piece of bread each day as his only sustenance). In such cases it cannot be doubted that alcohol plays the rôle of an accessory food, and changes take place, converting the organism into an alcohol-burning apparatus, and correspondingly unfitting it for the ordinary carbo-hydrates and hydro-carbonaceous food. This will, I think, serve in a measure to explain why depriving a drunkard of his drink may cause a sudden failure of nutrition with the rapid appearance of an outbreak of delirium, denotive of cerebral exhaustion, and characterised by failure of mental power, hallucinations, prostration, and muscular tremor. Let me repeat the fact that in health, if at all, only very small amounts of alcohol are consumed by the system, but in chronic alcoholism the tissues have undergone such changes as to confer upon them the power to derive force from alcohol, which unfit them to a corresponding extent for normal nutrition.

The term delirium tremens was adopted by Sutton in a work published in 1811, in which he took especial pains to show that the symptoms were not due to phrenitis or meningitis. He showed also that bleeding and blistering were generally fatal, and that these cases need a supporting treatment, and especially opium.

Strangely enough, in “Ziemssen’s Cyclopedia” (loc. cit.), Prof. Boehm, in referring to Sutton’s work,* gives this author due credit for originality in the use of the term delirium tremens; but, on the other hand, he states that it was reserved for Rayer in 1819 to indicate alcohol as the prime factor in the etiology of the disease. It is quite evident that he had not read Sutton’s tract on Delirium Tremens, or he could not have said that this author had overlooked its connection with alcoholic excess. Here is what Sutton, after reporting several cases, says †:—“It has been remarked in several of the above instances that the parties attacked by delirium tremens have been given to drinking; and I feel firmly persuaded that all cases of this disease are connected with indulgences of that nature.” Could language be more plain and unequivocal than this? Again, he says,‡ “But that fermented liquors, and more especially spirits, are the general cause of the disease, is rendered certain by the frequency of it in situations where the indulgence of them can be had at a reasonable rate. On the coast of East Kent, where I was first led to distinguish this affection, and at the time indulged in, spirits brought in by smugglers might be had in great abundance at a cheap rate; and such as laboured under delirium tremens in that quarter were mostly those who confessedly indulged in the use of spirits to excess.”

Several varieties of delirium tremens have subsequently been indicated, by


† Loc. cit. p. 47. || Loc. cit., p. 50.

‡ Tracts on Delirium Tremens, on Peritonitis, and on some other General Inflammatory Affections, and on the Gout. By Thomas Sutton, M.D. London, 1831, p. 2.
industrious investigators which we cannot now consider, such as febrile delirium tremens, which, according to Magnan, generally runs a fatal course in a few days, and is probably connected with some local inflammation, such as meningitis. Nor need I discuss the uraric form of Surmey.* Epileptic insanity may at any time occur as a complication. Dipsomania is undoubtedly a psychosis, often inherited, sometimes due to traumatism or severe mental shock, not necessarily dependent upon previous alcoholic excess. The clinical forms of confirmed alcoholism known to the alienist—such as pachymeningitis, hemorrhagic, general paralysis, melancholia, and hopeless insanity (hopeless because dependent upon sclerotic and fatty changes with atrophy of the brain)—are conditions belonging directly to our subject, but which need not at present engage our attention.

Let us, however, in conclusion, consider very briefly the therapy of the three forms most commonly encountered by the general practitioner—i.e., alcoholic coma, mania a potu, and delirium tremens,—a subject which has given rise to a good deal of controversy. In the first place, I will consider coma. In rapidly fatal cases of alcoholic poisoning, failure of respiration commonly occurs previous to cessation of the heart's action. Therefore, besides the ordinary treatment of narcotic poisoning by the use of the stomach-pump and purgative enemata, and the application of warmth to the extremities, it will be proper to fortify the action of the respiratory centres by the hypodermic administration of (gr. 1/4) atropia with (gr. 1/4) morphia, repeated at proper intervals. The urine should be drawn off, both for examination and to encourage the action of the kidneys. It may also be necessary to employ electricity and artificial respiration to assist the lungs in excretion of the surplus of carbonic acid, which now tends to accumulate in the blood. Indeed, Sampson, an English physician, in the treatment of such a case found himself obliged, as a last extremity, to resort to tracheotomy, which proved successful.*

Reginald Southey,† in a recent lecture on this subject, deprecates active measures, because if the case should happen to be one of hemorrhage into the pons Varolii, instead of one of alcohol-poisoning, such treatment would be improper; but since the cases of hemorrhage into the pons must be quite rare compared with those of alcohol-poisoning, and since they are invariably fatal under any method of treatment, I regard them as entirely out of the question, and should treat such a case as one of alcoholic coma. As soon as the patient has his stomach emptied by the stomach-pump, a pint of hot coffee may be thrown into its cavity and allowed to remain. Inhalations of ammonia will greatly assist in reviving the patient. An individual supposed to be insensible from alcohol should never be allowed to remain in a state of coma to sleep off a fit of drunkenness. Too often it proves his last sleep, either from carbonic acid poisoning or from secondary cerebral hemorrhage.

Acute mania induced by alcohol is commonly subdued by ether and chloroform inhalations and hypodermic injections of morphia. In such cases I have known a grain of morphia to be administered with only good results. The standard prescription for the minor forms of acute alcoholism is one containing bromide of potassium in decided doses, given every two hours until sleep is obtained. When there is much arterial tension, the tincture of hyoscyamus or hyoscyamia has been highly recommended. Care should also be taken to give nourishment frequently, in a form easy of assimilation on

* De quelques Formes peu connues de la Cachexie alcoolique, &c., L'Union Médicale, pp. 19-21, 1868.
† London Lancet, December 18, 1880.
account of the possible gastric inflammation. The patient will be found more manageable when confined to his bed, and it often becomes necessary to strap him down. During convalescence stomachic tonics to improve the digestion may be given. For this purpose occasional laxatives and tincture of capsicum, tincture of nux vomica, and compound tincture of cinchona may be used with advantage. To diminish the appetite for strong drink, a freshly-prepared fluid extract of cimicifuga with tincture of capsicum may be steadily employed, as recommended by Bartholow.

I will not dwell upon the treatment of delirium tremens further than to say that it requires pre-eminently a symptomatic and supporting treatment. Such cases generally suffer from numerous other evils, among which we notice prominently chronic gastric catarrh, owing to local action of the alcohol upon the mucous coat of the stomach causing atrophy of the peptic glands and increase of submucous connective tissue. Foods, therefore, which are digested in the small intestine, and peptones, are particularly required.

If I have correctly stated the conditions existing in acute and chronic alcoholism, I think it will be seen that good reasons exist why the administration of alcohol as a part of the routine treatment is as necessary in true delirium tremens and in chronic alcoholism as it would be improper in acute alcoholic poisoning. I am fully aware that the routine administration of stimulants is not uncommon in these cases,—which is partly due, I think, to the fact that these states are often confounded clinically under the common title of alcoholism, although their different pathology is insisted on by almost all the textbooks. Then, if we separate clinically the effects of acute alcoholic excess from the condition of chronic alcohol poisoning, with or without delirium, I believe that we are in a position to institute a rational treatment for mania à potu and delirium tremens.

To summarize:

1. Acute alcoholic poison, manifesting itself in the forms of coma, convulsions, and mania à potu, is characteristic of the physiological action of alcohol upon a system unaccustomed to its use. Its treatment, in cases of coma and convulsions, is like that of the other narcotic poisons producing paralysis of the respiration, but in mania powerful cerebral sedatives are required. During the after-treatment alcohol is not necessary, but, on the contrary, every encouragement, both by precept and by prescription, should be given the patient to adopt total abstinence as his only chance of safety.

2. Chronic alcoholic poisoning, exhibiting itself in the form of the horrors, vigilance, delirium tremens, or melancholia, on the contrary, bespeaks the existence of a depressed condition of the vital powers due to saturation of the system with alcohol, and consequent degenerative changes. Such unfortunate cases, suffering from what might be called an alcoholic diathesis, require careful nursing, a supporting treatment, and the continuance of stimulants, which to them have become both food and drink. — Philadelphia Medical Times, April 9, 1881.

Effects of Intoxicating Drink on the Memory.—In the new illustrated magazine of science, Knowledge, for November 18, there is an interesting article on "Brain Troubles: Impaired Memory," which concludes thus:—

"The excessive use of stimulants produces unmistakably mischievous effects. Temporary attacks of loss of memory have been caused by intemperance. 'By an old Spanish law,' Dr. Winslow mentions, 'no person was admitted into the witness-box to give evidence in a disputed case who was proved to indulge in habits of intemperance, as an excessive use of stimulants was considered to weaken and destroy the memory.'"
THE USE OF ALCOHOLIC STIMULANTS IN THE IRISH WORKHOUSES.

By E. Macdowel Cosgrave, M.D., Dublin.

WHilst admitting that the Poor Laws should be put in force so as to prevent dangerous suffering from want, and to render it certain that no one need die from starvation, it is also manifestly just and right that the burden of supporting our poorer brethren ought not to be unnecessarily oppressive, and whilst people should be assisted in, and tided over, the time of destitution, this relief should, as far as possible, be temporary, and such as is best calculated to restore the recipients to their position as self-supporting citizens, and not such as would tend to encourage them to become life pensioners.

To carry out poor relief many precautions are necessary, as we have to deal, not only with those who in spite of all exertions are driven to want, but with those who come to poverty by crime, dissipation, and laziness. Remove the discomforts of poverty, the bonâ fide poor are benefited, but the punishment looming ahead of the dissipated and careless is removed, the incentive for the lazy to be active is lost.

Since the opening of our workhouses, in 1840, the consumption of stimulants in them has merited far more consideration than has ever been paid to it. Of late years, however, public attention has been more and more called to the subject, and it has been discussed at a former Congress. Up to the present, however, the effect has been but slight, and much money is still unprofitably expended in this way.

The three questions I would briefly deal with in this paper, are:—(1) The amount of stimulants used in our workhouses. (2) Why they are so used. (3) The results that would follow if their quantity was materially reduced.

I.—THE AMOUNT OF STIMULANTS USED.

During the year 1880, 120,198 sick persons were treated in the Irish workhouses; of these 48,751 or 40 per cent., received alcoholic stimulants. The percentage varied from 09% in Ulster, to 76% in Leinster. The cost of the stimulants used was £11,845 8s. 7d. The cost per head of the total number of sick was 1s. 11½d. This varied from 9½d. in Ulster to 3s. 3d. in Connaught. The cost per head of the sick on stimulants was 4s. 1½d., which varied from 3s. 11½d. in Leinster, to 11s. 6½d. in Connaught. In the Dublin unions the rate was 2s. 10d. per head of the sick and 7s. 6½d. of those receiving stimulants.

In Armagh, no stimulants were used. In Stranorlar, out of 135 sick, only one received stimulants, at a cost of 1s. 9d. In Limerick was the largest proportion of sick on stimulants, viz., 3,856 out of 4,898. In Roscommon there was proportionately the largest amount of stimulants used, the average being 7s. 11½d. per head of all the sick, and 15s. 8d. of the sick receiving stimulants.

Besides giving stimulants to the sick, in seventy-six unions they are also given to attendants. Twenty-one unions give no stimulants to attendants, and sixty-six make no return on this head. In all 980 attendants are returned as receiving stimulants last year.

The amount of stimulants used is probably on the whole declining. Thus, in Longford, although during the last few years the average number of inmates has increased 8 per cent., the value of stimulants used has fallen to half. In the South Dublin Union the value of stimulants used has been but little changed during the past five years, but, as during that time the number of inmates has about doubled, the ratio per head is only about half.
what it was. In the North Dublin Union, however, the increase in the amount of stimulants used has outstripped the increase in inmates, so that whilst during the last five years the cost of stimulants per head of total inmates has in the South Union fallen from 2s. 9d. to 9d., in the North Union it has risen from 5s. 3d. to 8d.

This is shown in the following tables:

**SOUTH DUBLIN UNION.**

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of Inmates</th>
<th>Cost of Stimulants</th>
<th>Amount of Stimulants per head of Inmates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876</td>
<td>11,846</td>
<td>£1,198 19s. 8d.</td>
<td>2s. 0d. 261</td>
</tr>
<tr>
<td>1877</td>
<td>11,587</td>
<td>778 5s. 3d.</td>
<td>1s. 9s. 83</td>
</tr>
<tr>
<td>1878</td>
<td>13,784</td>
<td>815 3s. 1d.</td>
<td>1s. 2d. 121</td>
</tr>
<tr>
<td>1879</td>
<td>17,372</td>
<td>982 17s. 7d.</td>
<td>1s. 5d. 57</td>
</tr>
<tr>
<td>1880</td>
<td>23,773</td>
<td>936 9s. 5d.</td>
<td>0s. 9d. 45</td>
</tr>
</tbody>
</table>

**NORTH DUBLIN UNION.**

<table>
<thead>
<tr>
<th>Year ending 29th Sept.</th>
<th>Number of Inmates</th>
<th>Cost of Stimulants</th>
<th>Amount of Stimulants per head of Inmates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876</td>
<td>7,362</td>
<td>£532 3s. 0d.</td>
<td>1s. 5d. 348</td>
</tr>
<tr>
<td>1877</td>
<td>7,759</td>
<td>458 15s. 0d.</td>
<td>1s. 4d. 93</td>
</tr>
<tr>
<td>1878</td>
<td>7,861</td>
<td>829 16s. 5d.</td>
<td>2s. 1d. 221</td>
</tr>
<tr>
<td>1879</td>
<td>8,419</td>
<td>1,022 15s. 7d.</td>
<td>2s. 5d. 156</td>
</tr>
<tr>
<td>1880</td>
<td>11,753</td>
<td>1,038 5s. 6d.</td>
<td>8s. 9d. 201</td>
</tr>
</tbody>
</table>

2.—WHY STIMULANTS ARE USED IN WORKHOUSES.

Stimulants might be meant as (a) food; (b) food adjuncts; (c) medicine.

(a) Alcoholic stimulants are often carelessly spoken of as foods, chiefly because when taken they give rise to those sensations which we are accustomed to connect with the taking of food. But to entitle a substance to the name of food, it must be shown that it is capable of undergoing combustion in the body; but further (for even strychnia and opium are partially burned in the body) it must be shown that it has not toxic properties; that it burns in such a way to give out energy in reasonable proportion to its amount and cost, and that it does not hinder the combustion and assimilation of other foods. Alcohol can only be called a food in the same sense that sulphur is a fuel. Sulphur burns, but emits a noxious vapour, is an expensive means of obtaining heat, and chokes the fire, hindering the combustion of the other materials contained in it — so that although it burns it will never be classed as a fuel. So alcohol cannot be looked upon as more than a theoretic food, it is decidedly toxic, taken in sufficient quantities it is a strong narcotic-irritant poison, and taken for some time in quantities which produce no immediately apparent result, it injures the nutrition, and causes degeneration of the parts.
The use of Alcoholic Stimulants in the Irish Workhouses. 85

Also from an economic point of view it is easily shown that alcoholic drinks can never be classed as practical foods. They cannot give more than they possess, and the food elements they contain are scanty, and bought at a high price. It is doubtful at present how far alcohol can be consumed in the body. As far as our present knowledge goes some of it disappears, but not all, much being given off unchanged in the breath, perspiration, and other excretions. But even supposing that all was burned and used to the greatest possible advantage in the body, and selecting the form of stimulant that is usually looked upon as the most feeding, it can be shortly shown that the cost at which the nutriment is obtained is excessive.

An imperial pint of Guinness's stout contains 14 oz. alcohol, 2 oz. solids, and 16½ oz. water. The feeding properties of the solids at the highest estimation may be reckoned as equal to those of the same quantity of sugar. The 14 oz. alcohol contains 375 grams of carbon, and 62 grams of unused hydrogen, equal in value to 188 grams of carbon—say in all 563 grams of carbon, which are equal in value to 1,338 grams, or a little more than 2½ ozs. sugar. So that even if all the alcohol could be burned, the nourishment in an imperial pint of Guinness's stout could only equal rather less than that in 5 ozs. of sugar.

To put this in another form, the South Kensington Food Tables show that 3½d. worth of bread is equal as a force producer to 3s. 4½d. worth of Guinness's stout.

It is unnecessary to do more than point out that the possible food values of spirits and wines are even still lower.

(b) It is unnecessary to say much with regard to the use of alcohol as a food adjunct. Food adjuncts are substances taken with food which either assist its digestion, or are pleasant to take with it. Alcohol is certainly considered by many to be pleasant to take, and, even if it cannot be shown to assist the digestion of any article of food, it may, by an irritative action, cause the secretion of the gastric juice; but even so, it is certain that the effect of continued irritation is the inability to act without it, and the consequent gradual loss of functional power.

But even if alcohol occupied a much higher position as a food adjunct, that would not justify an annual expenditure in the workhouses of Ireland of nearly £12,000.

(c) Alcoholic drinks are probably meant to be used as medicines, as they can only be given under the direct order of the medical man, and the Local Government Board have refused to sanction the practice of giving beer for extra work or special duties. At the same time they are not put upon the same footing as ordinary medicines, as the Local Government Board refused to grant the request of the Cork Board of Guardians to have stimulants regarded as drugs and charged on the parliamentary grant. That they are not always used as drugs is shown by the fact that 980 attendants received them last year.

As medicines they should of course be used, provided the medical men consider them necessary, and believe that no cheaper or less injurious substitute would do instead; but it is certain that in a large proportion of cases, even if alcohol is necessary, alcoholic beverages are not; for, notwithstanding the various virtues that are attributed to the different classes of stimulants, there is only one action which they are sure to have, and that is the result of the only one constant constituent—alcohol. Nor is this to be wondered at, as the diuretic gin, the calming whisky, and the stomachic brandy that the paupers get, are generally silent spirit, flavoured, adulterated, and otherwise doctored, to imitate the required liquor.

It would be much better to use the spirit undoctored, to give alcohol of a known quantity, diluted with water to a known strength. Such a practice would admit of scientific accuracy, it would render it more likely that the patients and not the attendants got it, it would lessen the encouragement to malingering, it would be much cheaper,
it would be far less likely to form or revive a fatal craving for stimulants.

3.—THE RESULTS THAT WOULD FOLLOW IF THE QUANTITY OF STIMULANTS USED IN OUR WORKHOUSES WAS MATERIALLY REDUCED.

It has been calculated that drink is the cause of seventy-five per cent. of the pauperism in the United Kingdom, so that anything which lessens the drinking habits of the people will lessen the amount of pauperism. Drink also prevents people rising from pauperism to independence. For these reasons alone it would be well if stimulants were excluded from our workhouses, as even taking them in small quantities keeps alive the taste, or revives it, if lying dormant.

Many also who enter the workhouses are descended from drunken parents; in their case, there may be an inherent tendency to excess which only abstinence can control. So great, too, is the love of drink, that even a small quantity of stimulants may retain as inmates those who without it would leave. For all of which reasons giving stimulants to paupers tends to render pauperism more permanent.

The expense of maintaining workhouses would also be lessened. Primarily by the saving in the cost of stimulants, but also by the number in the workhouses being lessened, their stay shortened, and their return being made less likely.

The withdrawal of stimulants would also be conducive to the preserval of order, both amongst inmates and attendants.

As to the result on the health of the inmates and on the death-rate, it is at present impossible to speak with certainty. The Parliamentary return granted this session, is, of course, not sufficient to throw much light on the question, as, owing to local variations in other particulars, the results arrived at in one workhouse with small quantities of stimulants, can hardly be compared with those arrived at in one where larger quantities are used. If, however, the return is granted annually, it will, in a few years, be possible to compare the experiences of the same workhouses when using varying amounts.

There are, however, many reasons for thinking that the results will be in favour of the workhouses that use little or no stimulants. It can no longer be urged that alcohol is necessary to life, since many thousands are doing without it, and experience even teaches us that those who abstain are healthier; this is shown, for example, by the small death and sick rates of the Rechabites as compared with non-abstaining societies, and in the experience of the United Kingdom Temperance and General Provident Institution, in which, out of equal numbers, 100 moderate drinkers die for every 70 abstainers. Experience in English workhouses also shows that a reduction in stimulants can be accomplished with benefit. Statistics of the two Dublin, and of the Wexford Unions, which, as far as they go, even show that reduction in stimulants goes with increased healthiness, are given in the following tables. It may also be mentioned that in Roscommon, where the largest proportion of stimulants is used (7s. 11d. per head of all the sick), the death-rate is 148.7, as compared with 102.72, the average amongst the sick throughout all the Irish Workhouses.

Such, then, are some of the important points in connection with the use of alcoholic stimulants in the Irish Workhouses. At present a large sum is so expended, and it is important to know whether a large proportion of this money might not be saved to the ratepayers.

If it be true that the withdrawal of stimulants would lessen the abuse of poor relief; if it would improve the morale of the workhouses; if it would only affect their healthiness by improving it, then it would be well to reduce the quantity used as much as possible—a step which would do something to inculcate habits of sobriety, and to render those leaving the workhouse less likely to return, and more likely to change from rate absorbers to rate producers.
### A LECTURER'S ADVICE TO HIS STUDENTS.*

I CANNOT stand here to-day and look upon so many young faces without very mingled feelings. There is, doubtless a future not only of promise, but of usefulness, prosperity, and happiness to many of you; but I know from sad experience that this cannot be said of all. Some who started with twenty-two out of twenty-six Roman Catholic clergymen in Waterford have signed in favour of the extension of the Sunday Closing Act to that city.

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* From an Opening Address to the Students attending the Edinburgh School of Medicine, delivered 24th October, 1881. By A. G. Miller, M.D., F.R.C.S.E., Lecturer on Surgery, and Senior Assistant-Surgeon, Royal Infirmary.
some have made shipwreck who promised to carry all before them? Is this not so? And yet these are exceptions to the rule. The men who early overcome difficulties are those who succeed ultimately; and the men who aim low to begin with are those who miss the mark in the long run. With such thoughts as these in my mind, it has occurred to me that I might spend our few minutes together not unprofitably to you by directing your attention to some of the dangers that lie before you, that are even now present, and that have often (too often) caused the ruin of those who have preceded you.

Ours is a noble profession, gentlemen. The great and noble among earth’s sons have practised it; and He, the greatest and noblest of all, the Son of man, was a healer of the sick. And yet this noble profession is beset with many temptations from the beginning to the end; and, sad to say, many have fallen under these. I could myself enumerate many. I shall not refer particularly to the temptations to selfishness and greed, or to pride and arrogance, and such like. There are some who have come far short of the glory of their profession by caring, not for their patients, but for their fees; others who have equally missed their reward by supposing themselves the masters, instead of the servants, of suffering humanity. There are many other ways in which we may fail in attaining the highest ideal of our Christ-like profession, but of these I would not speak at present.

There is one evil which has often struck down the student and the practitioner, and which has impressed itself on my mind as one of the worst temptations which beset the path of those, especially, who are entering the profession. I mean intemperance. Now, there are many ways in which intemperance manages to ruin men, and it often appears as an angel of light—for instance, in the matter of hospitality. I once took charge of a practice in the country for a friend to let him get a holiday. I was tolerably well known in the district, and consequently was received in a manner considered most hospitable. But I can assure you, had I partaken of the half of what was offered to me in the way of drink, I should never have reached home of myself. Of course, I was quite safe, being a teetotaler; but I gave great offence to several kindly- intentioned people, for total abstinence was not so well understood fifteen or sixteen years ago as now. Those of you, therefore, who are total abstainers will not find it so difficult now to persuade your patients that you can live and work without whisky as those before you did. The social customs of the people are truly a difficulty in the way of the medical practitioner, especially when he is beginning. But they are more; they are a great danger. I wish I could impress you all with this, and I wish I could persuade people that when they complain of their doctors “taking to drink,” they have generally themselves to blame. I have not unfrequently heard of some districts where the doctors, one after another, have broken down through drink. About such a district I have felt sure of two things, at any rate—first, that the people are fond of treating their medical attendants; and second, that none but a teetotaler had a good chance of getting on there.

Another great temptation to a doctor is the hard work, exposure, fatigue, and especially the night work, which he has to go through. Under such circumstances one is apt to suppose that it is impossible to get on without stimulants. Now, I don’t mean to attempt to give you a dissertation on the science of the question, but I can safely say this—that it is now well known, from the experience of many, that hard work can be done without stimulation, and done better. What I wish mainly to impress you with at present is, that there is a danger ahead, a danger from intemperance, a danger in regard to which no man can say that he will never be exposed to it, and against which therefore, we ought all to protect ourselves as thoroughly as we can. Perhaps you ask why am I trying
to warn you against dangers a long way ahead? I answer that some of you are just completing your studies, just about entering on the practice of your profession, and therefore just about to be exposed to these very dangers. But I answer, also, that even to those of you who are entering on your studies, the danger (and it is a real one) must not be looked upon as something in the far distance which cannot reach down to you at present; for, as we have seen, the future is oftenest seen in the present, and as is the student, so, generally, is the practitioner. The rule is not so inflexible but that the best may fall or the worst recover himself, but it is mostly certain that the student-life forecasts the after-life. The practical deduction I would make from this is, that now is the time to prepare for the danger, now is the time to be independent of thoughtless though well-meaned hospitality, now is the time to be independent of stimulation, except those natural stimulants to work which the desire to acquire information and to get on in one’s profession afford. Scientific men who have studied the subject tell us that stimulants ought never to be required by the young and healthy, that they are peculiarly inappropiate for brain workers, and that when taken it is always at a cost the price of which must be paid sooner or later. Unfortunately, the postonement of the penalty often encourages the indulger to go on till the day of reckoning comes as a surprise, and the penalty is a heavy one. Men of observation tell us—and you may, I am sorry to say, see it for yourselves any day—that in the case of many medical men the so-called use of stimulants leads to the abuse, and before long, to the ruin of practice, character, body, and soul. Having sounded my note of warning, I must add my advice in the matter of prevention.

You are doubtless prepared to hear that I recommend you to become total abstainers. I must, however, give you reasons. In the first place, it is quite evident that as long as a man is a total abstainer from alcoholic stimulants he is in no danger from them. Secondly, the teetotaler is in no danger from the would-be hospitality of his patients. When asked first he has his answer ready, and he is not likely to be bothered again. He is also safe from the temptation to refresh himself either after or before fatigue. When a man is an abstainer, and feels that alcoholics must not enter into his calculations, it is wonderful how little he thinks of them or cares for them. For myself, I never know what it is to wish for a glass of wine or beer, or anything stronger than tea or coffee. But I know well how to enjoy a drink of cold water. I know well what a refresher it is.

With regard to the possible help to be got from stimulants towards doing hard work, I may quote Dr. Andrew Clark, who looks upon the idea as a delusion. He calls alcohol not a helper, but a hinderer to work, and says that if a man is wise, the more busy he gets the less stimulant he takes. The apparent refreshing action of alcohol taken after fatigue is attributed by some to a paralysing action on sensation. In other words, the man is quite as tired as ever, but he does not feel it. If, therefore, under such deceitful influence he should attempt more work, he is running into great danger of a breakdown altogether. The total abstainer, on the other hand, feels exactly as he is, and therefore knows what he is fit for; and, as has been abundantly proved by experience as well as experiment, he is actually more capable of work than the other. I shall not trouble you with further enumeration of advantages or disadvantages, but shall simply ask you, for your own sakes, to study the subject in all its aspects. And above all things, I advise you to give a trial to abstinence. It can do you no harm. No one ever got harm by it; and if you give it a fair trial, I am sure you will like it, and will find it a blessing in the long run.
TREATMENT FOR THE HABITUAL DRUNKARD.*


The issue of the persistent agitation, under the successive guidance of the late Donald Dalrymple and Stephen Alford, carried on by the Social Science Association, the British Medical Association, and the Society for the Promotion of Legislation for the Control and Cure of the Habitual Drunkard, has the Habitual Drunkards Act, 1879. The real merit of this Act, the passage of which through the Houses of Parliament was mainly due to the perseverance and tact of Dr. Cameron, M.P., and Lord Shaftesbury, is that for the first time in British legislation there has been affirmed the principle of the compulsory detention of the habitual drunkard for curative purposes. It is true that, to secure the passage of the bill, its sponsors were compelled to make such concessions as greatly diminished its practical value.

HINDRANCES TO THE SUCCESS OF THE ACT.

The confirmed inebriate must, when in his or her sober senses, voluntarily appear before two magistrates and confess himself in writing to be an habitual drunkard within the meaning of the Act. How this provision impairs the usefulness of the measure is but too well known to those who are consulted medically in these distressing cases. The friends invariably shrink from publicity, as the publication of an application from a dipsomaniac for detention in a retreat casts a slur on the applicant and on all his family connections.

The Act will expire in eight years, having been in operation for two years. The whole period was so short that it afforded little inducement to anyone to sink the amount of capital indispensable to the equipment and maintenance of an adequately-appointed Retreat. The result is at the present time there is only one Retreat, licensed under the provisions of the Act, that I can commend. At this establishment the lowest rate is £3 3s. per week.

There is thus no city of refuge, no secure haven, to which the ordinary police-court or impecunious dipsomaniac may for a time consign himself, where he will be in circumstances favourable to cure by the exclusion of the narcotic alcoholic poison which has been the cause of his undoing.

THE DALRYMPLE HOME.

Impressed with the urgency of the case of the habitual drunkard with no means at all, or even with moderate means, a project, emanating from a public meeting at the Mansion House, London, under the presidency of the Lord Mayor, has been set on foot for the establishment of a model retreat under the Act.

It is worthy of note that a preliminary condition is that no member of the committee of management will be allowed to derive any pecuniary profit from the undertaking. The scheme is intended to be enrolled under the charitable provisions of the Limited Liability Act, and no contributor can receive any financial return for his contribution, any profit made going to the extension of the work. Some £2,000 has already been promised, but £2,000 more is needed before a suitable house and grounds can be acquired. There are two funds, one consisting of donations to equip the institution; the other constituting a guarantee fund, in the event of the enterprise not proving self-supporting. The latter fund is most important, as, judging from past experience, the great majority of the applicants will be persons who have wasted their substance on intoxicating drinks.

It is much to be desired that ample pecuniary aid will be forthcoming, for many reasons; but especially because there is good reason to hope that if we can succeed in demonstrating that we have cured a number of typical cases of habitual drunkenness, the Legislature will not only permanently renew

* A Paper read at the Social Science Congress, Dublin, October, 1881.
the Act at the expiry of its term, but probably so improve its provisions as greatly to extend its usefulness.

PAUPER DIPSOMANIACS.

The British Medical Association, desirous to provide an opportunity to dipsomaniac paupers to avail themselves of the provisions of the Act with a view to reclamation, recently communicated with the Local Government Board and with Boards of Guardians throughout the kingdom. No definite promise to do anything was elicited from the former. As regards the appeal to the guardians, while some boards were desirous to have the power, if they should think fit to exercise it, to pay for the detention of pauper habitual drunkards in Retreats, the majority of the boards did not wish for any power to enable them to add to the rates of the poor.

SUCCESS OF VOLUNTARY FEMALE HOMES.

These are homes, on a more or less extensive scale, for the reformation of female inebriates, but in none of these has it been deemed needful to apply for a license under the Act, the curable inmates having generally been found desirous to voluntarily remain till cured. Accusations have been made as to mis-management and ill-treatment, which, so far as I can see from personal investigation, are mostly without foundation, and which have tended to invalidate the success which has rewarded the praiseworthy and philanthropic efforts of the promoters of these institutions.

NEED FOR THE GOVERNMENTAL INSPECTION.

But the inquiry I have made has convinced me of the desirability of Governmental inspection of all such places as are supported wholly or partially by public subscription. An accurate record should be kept in a book of the particulars in each case, the treatment while in residence, and the after history, so that the successful treatment pursued at the home may be available for purposes of public usefulness. The managers of reformatory institutions should welcome official inspection as affording the best guar-

antee of sound management and the most effectual reply to accusation and innuendo.

REPLY TO RECENT CRITICISM.

The somewhat discouraging first report of the Inspector of Licensed Retreats has been the occasion of various leading articles in the London daily Press, ridiculing the possibility of the cure of the confirmed drunkard, and stigmatising the licensing of retreats as an attempt to treat the inebriate as a lunatic.

The latter accusation is refuted by the clause in the Act providing that no one who has the care of lunatics can obtain a license for a Retreat. We do not propose to treat the dipsomaniac as a lunatic at all, but as the subject of a true disease. One of the conditions of the cure of this disease is the absence of the intoxicating agents which have either originated or developed the disease. This freedom from the chief hindrance to cure is secured by the exclusion of these agents from the Retreat.

That in many instances a cure can be effected is demonstrated by the success of the well-known Inebriate Institution at Fort Hamilton, New York, and of various other inebriate reformatories both in America and Britain.

APPEAL ON BEHALF OF A DALRYMPLE HOME.

At present there is ample accommodation at excellent private establishments for the wealthy dipsomaniac, but for the habitual drunkard in moderate circumstances, or in a state of destitution, there is no provision whatever. Magistrates, clergymen, and medical men are constantly calling for inebriate Retreats, which they could speedily fill with suitable inmates. Shall the appeal of men so well qualified to form a sound judgment be unheeded? Can we turn a deaf ear to the distressful and despairing cry of so many victims to our national vice, whom a little money and a strong hand might, by such Retreats as those whose cause I plead to-day, transform from paupers to ratepayers, from drones to workers, from disease to health, and from misery to happiness?
Proceedings of the
British Medical Temperance Association.

President,
B. W. Richardson, M.A., M.D., LL.D., F.R.S., F.R.C.P.

Honorary Secretary,
Dr. J. J. Ridge, Carlton House, Enfield, Middlesex.

Registered or registerable medical practitioners are admitted as members on condition of personal abstinence from all intoxicating liquors as beverages, and payment of an annual subscription of not less than five shillings. Registered medical students who are total abstainers are admitted as Associates on payment of an annual subscription of half-a-crown.

NOTICES.
Members and Associates receive the Medical Temperance Journal free by post.
Members and Associates who have not paid their subscriptions for the current year are respectfully requested to send them to the Honorary Secretary.
The next Quarterly General Meeting will be held at the Medical Society’s Rooms, 11, Chandos Street, Cavendish Square, on Tuesday, February 14, 1881, at which a paper will be read by Dr. J. J. Ridge, on the Influence of small quantities of Alcohol on the Nervous System, with demonstrations on Living Subjects.

NEW MEMBERS.
J. E. Gabb, Esq., Stonehouse.
Roger Hughes, Esq., Bala.
Dr. Hutchinson, Caunbore.
Dr. J. Johnston, Bolton.
Dr. Yewen, Leytonstone.

Enfield, December, 1881.

J. J. Ridge, M.D., Hon. Sec.

ALCOHOLIC STIMULANTS IN WORKHOUSES.
At the quarterly meeting of the Medical Temperance Association, held at Chandos Street, Cavendish Square, on Tuesday, November 15, Dr. Norman Kerr read a paper on “The Use of Stimulants in Workhouses.”
The President of the Association, Dr. B. W. Richardson, occupied the chair.
After Dr. Kerr had read his paper, which we publish elsewhere,
Dr. C. R. Drysdale remarked that the question of giving alcohol to the recipients of Poor Law relief could not be well understood until it was clearly seen what were the conditions of this form of relief in this country. The main point in considering the subject was whether people who were supported by others should or should not have given to them anything except the most necessary constituents of human life. If we would not give alcoholic liquors to those we loved best, it was hardly to be expected that we could vote for them being given to those who are quite under the power of medical authority. The dietary of persons under superintendence is arranged by medical advice, and, such being the case, it is clear that the pronouncement made some years ago by a large body
of the most celebrated medical authorities of the day which declared that alcohol was in no way useful to persons in health, has settled the question, and that we need no longer attempt to argue that it would be dangerous to the health to cut off the beer, &c., from the inmates when in good health. The famous Act of the 43rd of Elizabeth undertook, on the part of the public, to provide work and wages for all the destitute able-bodied; and there is little doubt that if the intent of that Act had been fully carried out, and no means had been adopted by the administrators of relief to neutralise its natural tendencies, the poor-rate would by this time have absorbed the whole net produce of the land and labour of the country. It is not at all surprising, therefore, that Mr. Malthus and others should at first have concluded against all poor-laws whatever. It required much experience and careful examination of different modes of poor-law management to give assurance that the admission of an absolute right to be supported at the cost of other people could exist in law and in fact without fatally relaxing the springs of industry and the restraints of prudence. This, however, was fully substantiated by the investigations of the original Poor Law Commissioners. Hostile as they are unjustly accused of being to the principle of legal relief, they are the first who fully proved the compatibility of any poor-law in which a right to relief was recognised, with the permanent interests of the working class and of posterity. By a collection of facts experimentally ascertained in parishes scattered throughout England, it was shown that the guarantee of support could be freed from its injurious effects upon the minds and habits of the people, if the relief, though ample in respect to necessities, was accompanied with conditions which they disliked, consisting of some restraints on their freedom, and the privation of some indulgences. Under this proviso it may be regarded as irrevocably established that the fate of no member of the community need be abandoned to chance; that society can and therefore ought to ensure every individual belonging to it against the extreme of want; that the condition even of those who are unable to find their own support need not be one of physical suffering, or the dread of it, but only of restricted indulgence, and enforced rigidity of discipline. This is surely something gained for humanity, important in itself, and still more so as a step to something beyond; and humanity has no worse enemies than those who lend themselves, either knowingly or unintentionally, to bring odium on this law, or on the principles in which it originated. Apart from any metaphysical considerations respecting the foundation of morals or of the social union, it will be admitted to be right that human beings should help each other, and the more so in proportion to the urgency of the need, and none needs help so urgently as one who is starving. The claim to help, therefore, created by destitution, is one of the strongest which can exist, and there is prima facie the ampest reason for making the relief of so extreme an exigency as certain to those who require it as by an arrangement of society it can be made. On the other hand, in all cases of helping there are two sets of consequences to be considered—the consequences of the assistance itself, and the consequences of relying on the assistance. The former are generally beneficial, but the latter, for the most part, injurious, so much so, in many cases, as greatly to outweigh the value of the benefit. And this is never more likely to happen than in the very cases where the need of help is most intense. There are few things for which it is more mischievous that people should rely on the habitual aid of others, than for the supply of subsistence, and unhappily there is no lesson which they more easily learn. The problem to be solved is, therefore, one of peculiar nicety as well as importance—how to give the greatest amount of needful help with the smallest encouragement to undue reliance on it. In prisons and refuges alcohol is never given. Alcoholic fluids cause many persons to enter workhouses and commit crimes.
Hence, all things considered, no alcohol should ever be given to persons who are in receipt of Poor Law relief.

Dr. Rogers, president of the Medical Poor Law Officers’ Association, and medical officer to the Westminster Union, said that having been a workhouse medical officer for thirty-five years, he had seen the consequences of intemperance to a degree that was absolutely horrible; but, at the same time, he complained that abstainers were not altogether fair in their treatment of this question. Let them not drop down too heavily upon the workhouse medical officer and his assistants—it should be stated that Dr. Rogers arrived too late to hear the paper read—more particularly when they passed over the large voluntary hospitals, where abuses (if they were abuses) existed pretty much as they existed in workhouses. As to what Dr. Drysdale had said, he (the speaker) had yet to learn that, under the system of administration he had seen carried out, a workhouse was a place people would not care to go to if they knew exactly what it was when they got there. Paupers were not treated with luxuries. Able-bodied people did not come there except for forty-eight hours; in fact, they had not enough able-bodied paupers to do the workhouse ordinary work. Those who knew nothing of workhouse management were also ignorant of the difficulties it presented. Go against the abuse of alcohol in all establishments, but do not be too hard upon those in charge of workhouses when advocating this change. Boards of guardians were too ready to come down upon the doctors with aid from persons outside. It was not by working through individuals so much as by a general consensus of opinion that this cause would be advanced both within the workhouse and without. Miss Stanley sent him a paper containing the account of a medical practitioner who had cut off stimulants entirely. He made further inquiries about it, and found that, after an experiment of six or eight months, denying the paupers any stimulants whatever, this practitioner wrote to his Board and asked for an increased stipend on the ground that he had saved the ratepayers a considerable sum of money! He (the speaker) was responsible for every ounce of beer and spirits he administered, and had repeatedly wished to be relieved of this burden, except when administering it to the sick.

Dr. Riddell said the sick poor had a very strong objection to going into the workhouse. It was not for the purpose of making paupers uncomfortable that this change was advocated, and certainly no attack had been made upon the medical officers of workhouses. Dr. Kerr had distinctly deprecated this, and though it was perfectly true that the medical officer was responsible for the administration of alcohol, yet it would be difficult for him to go against either public opinion or the opinion of his Board. No doubt there was a difficulty in making a change, but still it had been effected in a great many places, and what man had done man could do. It only required a little courage coupled with judiciousness. In Canada, and, he believed, a great part of North America, the idea of administering alcohol to people in workhouses was altogether unknown, and if this were so, what was there in the constitution of the British people to make it necessary here? He had no doubt whatever that what Dr. Kerr had said of the effect of alcohol upon nurses when on duty was perfectly correct. Why not offer them the alternative of tea or coffee? Perhaps Dr. Rogers and others would try that. He thought it unwise to encourage people with the idea that this was a luxury to be taken on all extra kinds of occasions, and as a sort of mainstay for extra work. Give stimulants in workhouses, and you maintain the liking for the very thing that had brought many of the inmates there. If it were considered desirable to try an experiment, try two wards at the same time—the one with alcohol and the other without. This would be much more satisfactory than trying the experiment over the whole establishment, one year in one way and another year in another.
Surgeon-General Francis said: The value of the inquiry into the consumption of alcoholic stimulants in poorhouse unions and infirmaries cannot be overestimated. On Saturday last I visited the infirmary attached to the Wandsworth Union, and through the kindness of the medical superintendent, Mr. Breward Neal, was allowed to inspect the official returns for the past four years. It appears that during the official year ending Lady-day, 1877, there had been expended under the head of alcoholic stimulants of different kinds, £496 18s. 9d.; 1,416 patients had been under treatment; and the death-rate was 17.5%. Mr. Neal then assumed medical charge. Anxious to give the non-alcoholic treatment a fair trial, and yet to avoid any appearance of indecorous haste to relieve the pockets of the ratepayers at the expense of the sick, he introduced it very gradually and carefully, the result being that now alcohol is never given except as a medicine. For the year ending Lady-day, 1881, the amount paid for alcoholic stimulants was £58 13s. 11d.; 1,775 patients have been treated, with a death-rate of 16.7%. Milk has been given freely instead of alcohol; but the excess of cost under this head in 1881 as compared with 1877 is only £49 9s. 5d. It appears, therefore, that during the period under review, with the substitution of milk for alcohol, there has been a total saving of £388 15s. 5d.; that referring, moreover, to the increased number of sick in 1881, a little milk has been more beneficial than much alcohol; and that the death-rate has, throughout the new system, remained at a lower figure than before. What has been accomplished in one infirmary may well be attempted in another. If, as seems possible, it can be proved that men and women, when reduced to the last extremity and advanced in age, as many who enter our unions and infirmaries are, can not only live in them in comparative health and comfort when deprived of the salace to which nearly all have accustomed themselves—a great majority even to saturation—but that they leave better than when they went in, another point, thanks to Dr. Norman Kerr and others, may fairly be scored in the campaign against alcohol.

Dr. Stewart (Clifton) said that in large institutions, such as Barming Heath County Asylum, with which he had been connected, where a considerable staff of nurses was required, nothing could be of more importance than that the alcoholic portion of their rations should be reduced to a minimum. The question raised by Dr. Rogers had continually come before him—whether it was better to have inside work done indifferently (apparently) without alcohol, or (apparently) well with it. He hoped a gentleman of Dr. Rogers's great influence would hesitate, ere he gave his imprimatur to the principle that we were to have work done apparently well under the influence of alcohol, or indifferently (apparently) without it. Let Dr. Rogers wait a little while till the first effects of the removal of alcohol had worn off before he came to any such conclusion, bear for a while the annoyances of the change, look the difficulties bravely in the face, and he ventured to think that Dr. Rogers and those who would be influenced by him would ultimately be glad of the change. At the same time he (the speaker) would be no party to any system which tied the hands of the medical man in the use of alcohol or anything else he thought it well to administer.

Dr. Paramore said he did not know any disease peculiar to abstainers; neither did he know any disease that could not be cured without alcohol. At the same time he was prepared to receive information on both points. Dr. G. B. Clark having expressed himself much to the same effect,

Dr. Scatliff returned to the subject under discussion by replying to the question raised by Dr. Rogers, "Why do you not assail hospital practice as well as workhouse and infirmary practice?" Because (said Dr. Scatliff) the workhouses are maintained out of the rates, while the hospitals are maintained by endowments or voluntary subscriptions. I think you foster the idea that alcohol is a good thing by giving these potations for special service.
The President said they had had an admirable paper from Dr. Kerr, and a very brisk discussion, and he would add simply a few words. One of the most popular papers he ever wrote, which had been quoted right and left, was entitled, "Life in a Workhouse," which showed that it was a very miserable place. He did not think he was breaking confidence when he said that Dr. Rogers exhibited to him the scenes from which he photographed. That must be twenty-five or twenty-six years ago, and he had had no occasion to alter his views in the interval. He was once on the rota of the Board of Guardians of St. Marylebone, where the people came for relief from misery just as they came to the dispensary for relief from disease. They brought nearly the same stories, and were to be pitied in much the same way, but they had one thing common to them—a horror of going into the house. "Give us work, or relief, or anything but that." He would not deprive the poor of any luxury at all if it were not a luxury conducive to harm. Dr. Kerr had put the points of his paper in the most candid way. He had warned them to be careful how they drew conclusions, and he quite agreed with him that no evidence had been yet adduced which was worth anything as to whether mortality had been increased or decreased by the use of alcohol. He might have his own peculiar views, but the matter was not at all settled yet, and it would take a period of years to do it unless some different machinery for collecting facts were established. He agreed with the remark made by Dr. Seatliif, and also with that of Dr. Rogers, for it was really unfair that one class of medical practitioners should be criticized whilst others were not. As much error was going on in the general hospitals as in any of the workhouses, but there was this distinction, that only the medical officer was responsible in the workhouse, whilst the responsibility in the hospital was shared by a large staff. He was delighted to see Dr. Rogers present, for he had known him in an unbroken friendship of thirty years. If they had his example and his support on behalf of this society, it would have a wonderful effect upon the 3,033 medical officers of workhouses throughout the kingdom. He (the President) would press Dr. Rogers respectfully to think over this question in all its natural greatness, for if he were with them they would soon see their way to solve this difficulty. The President concluded by moving a vote of thanks to Dr. Kerr for his paper, which was at once agreed to.

Dr. Kerr, in replying, said he knew Dr. Rogers had been considering this question seriously. He had helped temperance effort very often, and had done an inestimable work in improving the workhouse administration of London. He quite agreed that a work of this kind was as much needed in the hospitals as in the workhouses.

The proceedings then closed.

Eau-de-Cologne as an Intoxicant.—Lively descriptions have been published of places in the North of Ireland the inhabitants of which are addicted to indulgence in sulphuric ether as an intoxicating stimulant. A parallel experience is supplied in the report of Surgeon-Major Lyon, chemical analyst to the Government of Bombay, the intoxicant used being eau-de-Cologne. A sample of eau-de-Cologne was purchased at Pen, in the Kolaba District, large quantities of which, it was reported, had lately been sold to the native population. Genuine eau-de-Cologne has a strength of 54½ per cent. over proof. That from Pen was 19½ per cent. over proof. The price at which the Pen eau-de-Cologne was retailed was 2½ annas per bottle, holding 4½ fluid ounces. The price came out by calculation to be strength for strength less than the price at which ordinary Abkari duty-paid native liquor was being sold in the same district. The large sale of the eau-de-Cologne, therefore, could be readily accounted for; it was quite as cheap, and probably at least quite as pleasant, to drink as ordinary native liquor.—British Medical Journal.
THE
MEDICAL TEMPERANCE JOURNAL.
April, 1882.

Original Contributions.

EXPERIMENTS ON THE ACTION OF ALCOHOL ON THE NERVOUS SYSTEM.

By Dr. J. James Ridge.

Is alcohol in small doses a stimulant, or a narcotic? This is a question about which there has been, and still is, much difference of opinion. That it is a narcotic in large doses is not disputed, but it has been asserted that the action of small quantities is stimulant, and not narcotic, and that there is a fundamental difference, therefore, between the actions of large and small doses. Dr. Anstie, in his work on “Stimulants and Narcotics,” was a strenuous supporter of this view. One of the commonest arguments in favour of alcohol being a true stimulant is derived from its effect upon the pulse. The acceleration of the action of the heart by alcohol is considered to clearly prove its influence to be stimulating, while the sensations of increased power and energy are considered to corroborate this view. It might fairly be pointed out, however, that the acceleration of the pulse continues and increases in proportion to the quantity of alcohol (within certain limits), and long after there are decided symptoms of narcotism of other functions. The increased action of the heart, therefore, is no proof of direct stimulation, and is quite consistent with the hypothesis that alcohol narcotises the inhibitory nerve of the heart, and thus stimulates it only indirectly.

The question as to the nature of the influence of alcohol on the functions of the nervous system admits of exact determination by experiment; and I have been able to test some of the effects of small doses. The only way to obtain any satisfactory result evidently is, to take those functions which can be most easily
isolated, and to test them, in the same individual, both before and after a small dose of alcohol. If alcohol is at first a stimulant, of course the functions under consideration should be more easily and accurately performed. There are three of these functions of the nervous system which seemed most suitable for test purposes. These are (1) the sense of touch, or feeling; (2) the sense of weight, or the muscular sense; and (3) the sense of sight, or vision. I have tested each of these senses in the following ways:

1. Feeling.—An instrument was constructed in which were two points in an upright position, and about half an inch apart. A third upright point was situated between the two, and was capable of being moved in a straight line nearer to one or other of the stationary points. These three points were covered in so as to be invisible, but the forefinger could be passed through a hole in order to feel them. The middle point was moved by a rack and pinion, and the person tested was required to move it until, in his opinion, it was as nearly as possible equally distant from the two outside points. The movement of the middle point was recorded on a dial invisible to the subject of the experiment. This form of instrument was preferred to the ordinary aesthesiometer, because in that instrument (in using which the person has to state the earliest moment that he can distinguish the points of a pair of compasses as two, while they are gradually separated) imagination might more easily vitiate the conclusions.

### FEELING.

<table>
<thead>
<tr>
<th></th>
<th>Number of degrees on the dial from exact centre before alcohol.</th>
<th>Average.</th>
<th>Number of degrees on the dial from exact centre after alcohol.</th>
<th>Average</th>
<th>Amount of absolute alcohol given.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6 6 3 .... ... ... ...</td>
<td>5</td>
<td>10 8 10 .... ... ... ...</td>
<td>8 10</td>
<td>9 3 2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>6 30 4 30 10</td>
<td>16</td>
<td>20 24 46 45 5</td>
<td>28</td>
<td>2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>8 40 7 9 .... ... ... ...</td>
<td>16</td>
<td>33 24 7 30 .... ... ...</td>
<td>23 5</td>
<td>2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>3 .... ... ... ...</td>
<td>3</td>
<td>14 .... ... ... ...</td>
<td>14</td>
<td>2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>75 .... ... ... ...</td>
<td>75</td>
<td>115 .... ... ... ...</td>
<td>115</td>
<td>2 drachms.</td>
</tr>
</tbody>
</table>

This table shows that alcohol in small doses exercises a narcotic influence on the nerves of sensation, or renders the perception of minute differences of size less keen and delicate. The numbers, though apparently large, do not represent a large actual distance between the points. They simply indicate the relative difference, the average before alcohol being twenty-three, and
afterwards almost thirty-eight. The only conclusion that can safely be drawn is that there is certainly no improvement, no increased sensitiveness after small quantities of alcohol, but, on the contrary, slight deterioration.

2. Weight.—The amount of muscular force required to overcome different resistances is measured by a special sense connected with the muscles, but exercised by the nerves. Comparison between two weights requires the action of the judgment. The more acute the perceptive faculties are, so much the more readily will the judgment decide upon small differences between two weights. The effect of alcohol on this muscular sense was determined by an arrangement in which a weight was attached to a certain lever, and the person experimented upon was required to slide an equal weight along another lever, exactly similar to the first until, in his opinion, the weights appeared to be the same. It is obvious that the position of the weights on each lever ought to be exactly the same, and, therefore, the more sensitive the muscular sense is, the nearer will the individual be able to place them before he ceases to detect any difference.

The following table gives the particulars of the various trials, the average results both before and after alcohol, the quantity of alcohol administered, and the general average of the whole. All the individuals tested were adult men, and the alcohol was diluted with at least three times its bulk of water.

**WEIGHT.**

<table>
<thead>
<tr>
<th>Alcohol.</th>
<th>Distance between the weights, in millimetres, before alcohol.</th>
<th>Average.</th>
<th>Distance between the weights, in millimetres, after alcohol.</th>
<th>Average.</th>
<th>Amount of absolute alcohol given.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>14 8 1100</td>
<td></td>
<td>13 50 1350</td>
<td>4 drachms.</td>
<td></td>
</tr>
<tr>
<td>Non-A</td>
<td>22 10 18 16 18 1650</td>
<td></td>
<td>20 22 20 20 20 2000</td>
<td>1 drachm.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>3 4 2 10 475</td>
<td></td>
<td>8 4 8 3 575</td>
<td>1 drachm.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>4 7 9 5 690</td>
<td></td>
<td>13 13 12 5 18 13 1350</td>
<td>2 drachms.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>0 2 9 5 400</td>
<td></td>
<td>5 4 13 10 800</td>
<td>2 drachms.</td>
<td></td>
</tr>
<tr>
<td>Non-A</td>
<td>2 4 5 2 305</td>
<td></td>
<td>10 4 4 6 600</td>
<td>2 drachms.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>2 2 5 225</td>
<td></td>
<td>1 7 4 3 375</td>
<td>2 drachms.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>5 7 19 0 525</td>
<td></td>
<td>10 6 8 8 650</td>
<td>2 drachms.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>9 11 0 1 440</td>
<td></td>
<td>3 8 11 15 4</td>
<td>2 drachms.</td>
<td></td>
</tr>
<tr>
<td>Non-A</td>
<td>2 3 4 1</td>
<td></td>
<td>6 6 8 3 575</td>
<td>4 drachms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5105</td>
<td></td>
<td>7095</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General average 57105 before; 7095 after.

From this table certain facts are apparent:—(1) That in every case the average sensibility to weight and power of discrimina-
tion was decidedly diminished by small doses of alcohol, the general average indicating that the sensibility is diminished nearly two-sevenths, or 28 per cent. (2) That single trials are not reliable, since many circumstances may unite to produce a fallacious result. Thus, some of the trials after alcohol were actually more accurate than some of those before it, although the average of each individual conforms to the general average of the whole. (3) That non-abstainers are affected, as well as abstainers. (4) That small doses act in a similar way to large doses, and that the difference is only in degree, not in kind.

3. Vision.—This was tested by noting the distance at which a row of letters could be read with one eye, without alcohol, and then the distance at which the same letters, differently arranged, could be read with the same eye afterwards. The distance varies very greatly in different individuals; but, of course, in the same individual it would remain the same, provided that the alcohol had no effect. Indeed one might naturally expect a slight improvement in the later trials, by reason of the eyes becoming accustomed to the formation of the fancy letters employed. The following table gives the results obtained:

### VISION.

<table>
<thead>
<tr>
<th>Absinther.</th>
<th>Distance of distinct vision, in feet, before alcohol.</th>
<th>Average.</th>
<th>Distance of distinct vision, in feet, after alcohol.</th>
<th>Average.</th>
<th>Amount of absolute alcohol given.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7 7·25 7 6</td>
<td>6·81</td>
<td>7 6·75 6·50 5·75</td>
<td>6·50</td>
<td>4 drachm.</td>
</tr>
<tr>
<td>Non-A</td>
<td>9 7 8·5 7</td>
<td>7·87</td>
<td>8·75 6·75 5·75 8</td>
<td>7·31</td>
<td>1 drachm.</td>
</tr>
<tr>
<td>A</td>
<td>10·5 10·75 10·5 10·5</td>
<td>10·56</td>
<td>8 9 7·5 9·5</td>
<td>8·50</td>
<td>1 drachm.</td>
</tr>
<tr>
<td>Non-A</td>
<td>4·25 5·25 5·25</td>
<td>4·91</td>
<td>4·50 4·50 4·25</td>
<td>4·41</td>
<td>2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>10·25 9 7·25</td>
<td>8·83</td>
<td>9 9·25 8</td>
<td>8·75</td>
<td>2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>11·25 11·25 10·25</td>
<td>10·75</td>
<td>10·5 10·5 11</td>
<td>10·12</td>
<td>4 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>15 10·5 13</td>
<td>12·80</td>
<td>12 10·5 12</td>
<td>11·80</td>
<td>2 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>9·25 10·25</td>
<td>9·75</td>
<td>8·50 8</td>
<td>8·25</td>
<td>4 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>6 6 5·75</td>
<td>5·91</td>
<td>5·25 4·75 4·75</td>
<td>4·91</td>
<td>4 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>16 15·5 15·75</td>
<td>15·75</td>
<td>14·75 14·5 15·25</td>
<td>14·83</td>
<td>4 drachms.</td>
</tr>
<tr>
<td>A</td>
<td>93·75</td>
<td></td>
<td>85·35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General average 9·375 before; 8·338 after.

Here, again, it is clear that every one of the individuals experimented on was affected injuriously by the alcohol. On the average every one had to approach nearer in order to distinguish the same letters. The general average indicates that it required an approach of nearly one foot to compensate for the injury done
Experiments on Action of Alcohol on the Nervous System.

by the alcohol. To put it another way, the distance had to be shortened, on the average, 9 per cent.

In testing all three of these senses it ought in fairness to be borne in mind that considerable advantage was given to alcohol by the unavoidable necessity that the test with alcohol should follow the test without it. For thus, in every case, the alcohol gets all the credit of the improvement due to experience and practice. If that fallacy could have been avoided, it seems probable that the difference in favour of total abstinence would have been even greater than it really was.

As two drachms of alcohol was the amount given in the majority of cases, it may be just worth a line to indicate that this represents one tablespoonful of spirits; not quite half a wineglassful of port or sherry; a small wineglassful of claret or champagne; and not quite a quarter of a pint of ale. Now, these quantities are considerably short of the "physiological minimum," which is supposed not to do anyone any harm. Indeed, the fact is established—that from the moment when sufficient alcohol has been taken to affect the nervous system at all, to the total extinction of nervous energy by a fatal quantity, there is progressive paralysis of every form of nerve function, capable of accurate determination, which has hitherto been experimented on.

It is to be carefully observed that, notwithstanding this real deterioration of various powers, the individual is not conscious of any alteration, and nothing but an unmistakable test can convince him that he is not so accurate or capable as he was before. Whether this arises simply from the inability of the judgment to compare the intensity of two impressions reaching it separately, and after an interval of from fifteen to thirty minutes, or whether it arises from incipient paralysis, or weakening of the judgment itself, is not easy to determine. Probably both causes operate to account for the failure to perceive the difference.

One thing becomes very clear—namely, that the highest possible perfection of the nervous system is only possible with strict total abstinence.

Alcohol has, also, clearly no right to be called a stimulant. It is a narcotic from first to last, as Dr. Wilks and others have heretofore asserted, and the symptoms of stimulation are only the result of the peculiar, balanced condition of many functions, between accelerating and checking nerves; the narcotising of a checking nerve producing for the time being the same visible effect as the stimulation of an accelerating nerve. Alcohol, like other drugs, has its special preferences for certain nerve tracts over others, and there is no doubt that in some persons one nervous function is more susceptible, and in others another.
Nevertheless, its tendency may be broadly indicated as a paralyser of nerve-function, or, more shortly, as a true narcotic.

These experiments, or, at least, those on the sense of weight and vision, can be easily repeated by any medical man. An ordinary balance, with hanging scales, can be fixed up so that the pans both touch a level surface. A weight, say an ounce, or an ounce and a half, can be put into one scale, and a smaller weight into the other, such that by depressing each end of the beam alternately, with the same finger, so as to raise the opposite scale, a decided difference can be felt. Then put into the scale containing the lesser weight some small shot, one at a time, until it is believed that the weights are equal. When the judgment is quite satisfied weigh the shot and weight, and determine the difference between the weights in the two scales. This should be done three or four times, to get an average. Then a dose of alcohol, from one to two drachms, should be taken, diluted with three times as much water. If absolute alcohol is not at hand rectified spirit may be used, one drachm and twenty minims generally representing one drachm of absolute alcohol. After the lapse of a quarter of an hour, the same processes should be repeated the same number of times.

With regard to vision it will be easy to fasten a piece of unknown printing against the wall with a nail, to which a piece of string is attached. Approach very gradually towards the wall, covering one eye and holding the string in a tense condition up to it, until every word of two or three lines of the printing can be read. Then measure the distance by measuring the string. Do the same again after alcohol has been taken, reading other lines of the same type. Then measure again. It is essential that this experiment should be conducted when the light, either natural or artificial, is unchanged. It is also essential that nothing should be allowed to excite the mind or distract the attention.

There is one caution I would most earnestly give, and that is, that on no account whatever should alcohol be taken by anyone who has at any period of his life known what it is to have a craving for drink. Nothing but the desirability of knowing the true action of alcohol in strict moderation, and of convincing the public of its insidious and injurious influence, would have induced me to make these experiments at all. It is necessary to describe them fully that they may be repeated by independent observers; but I again warn all that none who have escaped from the snare of alcohol ought to touch a drop again.

If these experiments should be tried by anyone, I should esteem it a great favour to have the results communicated to me, so that I may tabulate them with others.
PHYSICAL VERSUS MORAL; OR, "I WOULD IF I COULD."

By John Gill, M.D., Surgeon to the Stratford-on-Avon Infirmary.

It is sometimes said that not a few persons have tried entire abstinence from spirituous drinks, and have been driven back to them by injury to health; and there can be no doubt that this statement has some basis in fact.

The objection applies to three classes of cases:—1. To individuals whose avocations or surroundings constantly expose them to depressing influences. 2. To those who are of a generally feeble constitution. 3. To people with peculiar infirmities.

With reference to all these cases, it may be questioned whether the benefit supposed to accrue from the influence of spirit is real and abiding, and also whether the disturbance of the usual state of the system brought about by the sudden withdrawal of the accustomed stimulation ought not to be regarded as a merely temporary inconvenience, which would be completely surmounted, fair time being allowed for the organisation to adapt itself to the altered conditions.

As an example of the first group, we may take a professional man, who has broken down under pressure of his duties, and who is said to have been raised up from great prostration by a daily quantum of wine, this quantum, like no other medicine, being still continued long after the restoration of health, for fear of relapse. If it be granted that alcohol, in conjunction with other remedial agencies, contributed to the process of cure, this is the utmost credit that any one can claim for it. Even this, however, may be doubted; but leaving this as a point belonging to the question of the medical use of alcohol, and therefore not coming within the scope of the present inquiry, the fact of a medicine having been successful in a state of the system demanding medical treatment is no just reason for its adoption under other circumstances. We may therefore fairly challenge any whose experience has just been described to exhaust all the resources of hygienic science before they go again to what should be regarded, to say the best of it, as a medical agent in the strictest sense. Let fresh air, agreeable bodily exercise, mental recreation, free ablation, a simple, nourishing, easily digestible diet, moderation in work, and early hours, all have a fair trial in combination, and it will soon be found that an intelligent observance of the laws of health will do more, even for the most overtaxed, than any exciting potion that can be procured.

The next class of cases may be called the chronically feeble, and it can hardly be matter of surprise that persons who for a
considerable time have daily endeavoured to balance this natural weakness by the excitement of alcohol should feel a want and a discomfort when it is suspended.

But if the physiological doctrine be true, which teaches that the real effect of alcohol is paralysing—a doctrine which modern research, according to high authorities, makes good—then the feeblner the constitution the more disastrous will be the ultimate consequence of alcoholic irritation; and the weakly woman who flies to it for support is like a ball thrown into the air, only to fall the more heavily the higher it has been flung. In fact, there are no persons who, on the score of health, need to be more seriously warned against the deceptive and ruinous influence of wine drinking and beer drinking than the "delicate," and those of habitually poor appetite. There are other remedies which every medical man is familiar with, and which will effectually aid a low struggling life-power without the peril that must inevitably be incurred through the wearying push and pressure of alcoholic slave-driving.

Not that we mean to advocate the use of even the non-alcoholic restoratives which have recently been recommended. The whole pick-me-up practice, like the private use of drugs to procure sleep, is wrong from its starting point, and the less the public meddle with it the better. If medical treatment is requisite, medical skill should be summoned for counsel; but any habitual resort to drugs, without competent advice, is a serious mistake. The wiser course consists in avoiding all habits and influences which tend to an excessive demand upon the natural powers, and by a quiet and simple life giving to mother Nature every possible chance of turning to good account whatever energy is possessed. Much of the excessive sensitiveness and want of equability of which so many complain may be traced to the disturbing effect of alcohol.

It is true that to some even of the weaker constitutions a tranquil existence is impossible, for the circumstances in which they are placed necessitate much constant and anxious exertion. But this only renders our caution the more imperative, for if, in addition to the daily provocation of worry and forced labour, you pour in the urgent but exhaustive fire of alcohol, what less can be expected than a breakdown which will come so much the sooner if the over-driven system was originally weak? Hence, a life kept up by the promptings of alcohol may be resolved into three phenomena: outside a brilliant illumination, inside a burning mass, and eventually the charred remains of a holocaust. And although the features of the process may not always be so strikingly marked as this, the results of dependence on alcohol are always really the same. The slave is over-tasked, pushed
to unnatural effort, and, whether suddenly or by slow degrees, gives in.

How much better to attempt no more expenditure of power than can be comfortably managed under the economical guidance of a refreshing and nourishing, but unexciting regimen? As Sir Guyon says to Mammon in the Fœrie Queene:——

"Through fowle intemperance
FRayle men are oft captiv’d to covetise:
But would they thinke with how small allowance
Untroubled nature doth herselle suffise,
Such superfluities they would despise,
Which with sad cares empeach our native ioyes.
At the well-head the purest streams arise."

There is a third order of cases, which may be designated peculiar. The writer has occasionally met with friends of the Temperance cause who have avowed that they certainly would become abstainers but for some special ailment which is alleviated by a beverage containing the product of fermentation, and which ailment always returns if this is abandoned.

Seeing that there are very strong moral reasons for abstinence we may at least ask all who come under this last category, whether they have sufficiently tested the supposed connection between the alcohol which they imbibe and the relief they experience. If beer seems to renew appetite or promote sleep, may not the effect be traceable to the hop rather than to the spirit mixed with it? If gin proves remedial, may not the medicinal quality depend more on the juniper than on the alcohol? At any rate a strict investigation into the real merits of the supposed remedy ought to be made, and personal liking should be carefully excluded, in order that an unprejudiced judgment may be arrived at. Nor should it be forgotten that such instances of special infirmity are the very ones in which the temptation to habitual alcoholism is greatest and the utmost vigilance should be exercised lest fatal bondage gradually but surely fasten on its fetters. The resources of the therapeutist are now abundant and every day they are enlarging. Discoveries and experiments are continually placing new and creditable medicines at his disposal, and surely it would be better to ransack the whole realm of Materia Medica for a drug to meet the difficulty than to associate oneself, even in the smallest degree, with the traffic in an article which has done more than any other human invention to debase and destroy mankind.

It is hardly necessary to notice the common subterfuge that beverages containing alcohol are taken by vast numbers of persons without any harm resulting to their health or morals, for this is but an excuse for indulgence and not an objection to
abstinence. Inasmuch however as a statement of this kind is often successfully employed to turn the edge of a sound argument, it may be well to point out where the fallacy lies.

The mistake, then, in this palate-apology, if we may so term it, is twofold.

1. The statement, if true, is so only to a very limited extent. It is admitted, even by the strongest advocates for the medical value of wine and kindred compounds, that certain constitutions are best without them; and even writers such as Baudot,* who wrote long before scientific experiment had proved the perilous action of alcohol on the human system, while recommending vinous drinks, lay down careful restrictions as to their use, with regard to sex, age, temperament, occupation, &c.

In fact, there is not an author of any repute who has maintained the usefulness of these things under certain circumstances without insisting on the great moderation which ought to be observed in taking them, and pointing out the mischief which easily arises from any abuse of them.

And while it is a matter of the commonest observation that some persons cannot take any malt liquor without suffering injury, and others are obliged to avoid wine and spirit, it is by no means certain that a large proportion of the most ordinary complaints which are brought to the doctor for cure do not arise from a degree of imprudence in this direction which never oversteps the boundaries of social propriety. In other words, so many ailments are due to this cause that it is hard to say that any one may reckon on escaping them, except on the principle of abstinence. Some may go unscathed, for the human body is wonderfully apt in accommodating itself to circumstances, and the reign of Divine mercy under which we live prevents us from feeling the full penalty which the infraction of physical law would seem logically to involve. But all this does not justify the transgression. The author knows an old gentleman who was in vigorous health at eighty-five, although he had daily drunk strong green tea for fifty years. But no one would found upon such a fact, or even upon a hundred such facts, a defence of the practice of drinking what most people would find to be pernicious.

Then, again, it is well known that although alcoholic drink may seem to suit for awhile, it does not always agree even with the same individual; and there are many who, after changing from one variety of "stimulants" to another, go to the doctor at last to get them out of the trouble they have brought on themselves,

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and have to be put under a course of medicine before they recover any comfort in existence.

Even if it be admitted that in some circumstances a small dose—this is the proper term to use, as alcohol never ought to be administered except by medical hands—promotes appetite, in the larger number of cases in which it is taken, in any of its mixtures, habitually, the appetite is impaired and the body is thereby deprived of necessary nutriment. This, in fact, is a fruitful source of mischief. Beer, wine, brandy, whisky, all become substitutes for real food, and though the system bears up against the privation, the departure from physiological rule sooner or later brings forth evil fruit. Alcohol lets loose, and probably develops, force in a way which induces a too-rapid consumption of the resources of the system, producing, for the time being, a sham energy which maintains the character of the genuine thing for awhile, until the mask, like all other disguises, wears out, and that which was mistaken for strength is found to have hastened an eventual breakdown.

The extravagance of even beer drinking, to say nothing of the more expensive and less clumsy irritants, furnishes another proof that the "no harm" argument is unsound. Whatever is spent on an unnecessary article of consumption goes to limit the power either of obtaining for personal appropriation, or providing for others, really useful commodities; and thus the expenditure on these superfluities, amounting, in a single year, in Great Britain to a sum sufficient for building five hundred first-class hospitals and three thousand large places of worship, constitutes, to say the least, a frightful waste, in which all consumers of alcoholic beverages bear their part.

2. Even if it were demonstrated that any large number of persons who adopt these drinks escape evil consequences, this would not justify the habit. When the enormous amount of evil, physical and moral, which flows directly from "strong drink" is considered, nothing short of proved necessity can afford a valid reason for supporting, however remotely, the trade which feeds on the destruction of all that is dearest to man. Things, like men, are often justly judged by their associations, and when it is remembered that there is not a vice or a misery under the sun which is not more or less connected with and promoted by beer, wine, or spirits, are not right and reason on the side of those who banish the whole tribe from their tables?
ALCOHOL IN ENTERIC FEVER.

By James Edmunds, M.D., M.R.C.P. Lond., &c.,
Senior Physician to the London Temperance Hospital,
Medical Officer of Health for St. James’s London.

In the British Medical Journal, of Nov. 27, 1880 (page 840), there is published a lecture upon enteric or typhoid fever, by Dr. Bristowe, Senior Physician to St. Thomas’s Hospital, and the lecture is made to end with the following summary:—

“In conclusion, gentlemen, let me state briefly the treatment to which I should like to be subjected if ever, unfortunately, I became affected with typhoid fever. I should like to be placed in a cool, well-ventilated room, and covered lightly with bed-clothes; to have a skilful and attentive nurse to look after me; to be fed solely with cold milk, unless vomiting should demand the addition to the milk of medicine calculated to allay vomiting. If diarrhoea became troublesome, or even there was much pain or tenderness in the caecal rings and in the bowels, I should like to be treated, not with laxatives, but with opium, given either by the mouth or by the rectum. If constipation were present, I should (excepting in the first week) like to have enemata only employed for its relief. In the event of intestinal haemorrhage coming on I should like to have ice to suck, or ice-cold fluids to drink, cold compresses to the belly, and cold injections into the bowels; and, though I am sceptical as to their efficacy, I should still choose to have astringents (and, more especially, lead) given to me at short intervals. If perforation should take place, let me have large and repeated doses of opium. Stimulants I should prefer to be without early in the disease; later, however, and during convalescence, I should like to have them in moderation. As to the cold baths, I would rather not have them; but I would, nevertheless, leave it to my physician to exercise his discretion in the matter. I would leave it also for him to decide, according to circumstances, whether alcohol should be administered to me in large quantities. I would prefer not to be treated at a Temperance Hospital.”

A previous paragraph in the lecture Dr. Bristowe makes to end thus:—

“I am satisfied that there are many occasions in enteric fever when alcoholic stimulants are of the greatest value; and that whoever then neglects to have recourse to them imperils the patient’s life.”

Feeling that the weight to be attached to Dr. Bristowe’s pre-possession against being treated for typhoid in a Temperance Hospital was a subject worthy of examination, and having shortly
afterwards* to speak upon the results of the treatment at the Temperance Hospital, I gave the facts with regard to its use of alcohol in typhoid fever, and the mortality among its cases up to that time. I then also asked that Dr. Bristowe would publish the extent to which alcohol had been used in his cases, for the same period at St Thomas's Hospital, and the mortality which had occurred. Recurring now to this important question, I publish all the cases of typhoid fever which have been treated as in-patients at the Temperance Hospital during the nine years of its work. And I again ask Dr. Bristowe to publish the results of his practice in typhoid fever, in order that we may see how far his prepossession in favour of the prescription of alcohol is borne out by his results.

It will be seen that my colleagues—Dr. Lee and Dr. Ridge, and myself have thus far seen our way not merely to "temperance," but to actual "total abstinence" with regard to the administration of alcohol in the treatment of typhoid fever. I find that twenty cases in all have been treated in the beds of the Temperance Hospital. No alcohol has been administered in any one of the cases, either dietetically, pharmaceutically, or medicinally. There has been but one death among the twenty cases.

The following table, prepared for me by Dr. J. A. McWilliam, now house-surgeon to the London Temperance Hospital, gives the case-book-number, the initials, age, sex, and occupation, the habits, the physician in charge, the dates, and the result, for each patient. Some remarks by Dr. McWilliam, which are appended, I also leave as they stand. The notes of most of these cases were taken by Dr. S. L. Smith during his time of office as house-surgeon. (See next page.)

With regard to the treatment of the cases—speaking for myself alone, and without the opportunity at this moment of referring to my colleagues, Dr. Lee and Dr. Ridge—I should perhaps confess that the treatment which I adopt differs from that laid down by Dr. Bristowe in the following points:—

1. I have prescribed no alcohol, and I have a strong conviction that in typhoid fever, as a general rule, alcohol is not only not necessary, but that it is actually injurious. Its effect, when given in large doses, of lowering the temperature is obtained more safely and more easily by tepid sponging, the wet pack, simple diaphoretics—such as the acetate of ammonia, moderate doses of citrate of potash. On the other hand, reduction of temperature, when obtained by the large doses of alcohol which are necessary, is followed by increased distaste for food, less perfect digestion, and greater intestinal suffering. The use of

* Vide the Temperance Record, Dec. 16, 1880, p. 806.
THE CASES OF TYPHOID FEVER TREATED IN LONDON TEMPERANCE HOSPITAL,

During the nine years from October 6th, 1873, to March 20th, 1882.

<table>
<thead>
<tr>
<th>Case Book No.</th>
<th>Date of Admission, 1873</th>
<th>Initials</th>
<th>Age</th>
<th>Sex</th>
<th>Occupation</th>
<th>Abstinence</th>
<th>Physician</th>
<th>Date of Discharge</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>22nd Oct., 1873</td>
<td>E. T.</td>
<td>23</td>
<td>M.</td>
<td>Painter</td>
<td>Abstainer</td>
<td>Dr. Ridge</td>
<td>27th Nov., 1873</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>17th April, 1874</td>
<td>S. D.</td>
<td>35</td>
<td>F.</td>
<td>Housekeeper</td>
<td>Abst. 6 yrs</td>
<td>Dr. Edmunds</td>
<td>15th May, 1874</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>15th May, 1874</td>
<td>A. B.</td>
<td>24</td>
<td>M.</td>
<td>At home (married)</td>
<td>Non-abstainer</td>
<td>Dr. Edmunds</td>
<td>31st July, 1874</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>12th Aug., 1874</td>
<td>W. J.</td>
<td>12</td>
<td>M.</td>
<td>At school</td>
<td>Abst. 3 yrs</td>
<td>Dr. Ridge</td>
<td>12th Sept., 1874</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>158</td>
<td>1st Dec., 1874</td>
<td>A. A.</td>
<td>19</td>
<td>M.</td>
<td>Laundrymaid</td>
<td>Abst. 10 yrs</td>
<td>Dr. Edmunds</td>
<td>14th Dec., 1874</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>193</td>
<td>9th March, 1875</td>
<td>J. S.</td>
<td>24</td>
<td>M.</td>
<td>At home</td>
<td>Non-abstainer</td>
<td>Dr. Edmunds</td>
<td>9th April, 1875</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>420</td>
<td>8th Dec., 1876</td>
<td>C. F.</td>
<td>23</td>
<td>M.</td>
<td>Grocer's assistant</td>
<td>Non-abstainer</td>
<td>Dr. Edmunds</td>
<td>27th Jan., 1877</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>481</td>
<td>12th June, 1877</td>
<td>M. A. A.</td>
<td>33</td>
<td>F.</td>
<td>At home (married)</td>
<td>Abst. 8 mos.</td>
<td>Dr. Edmunds</td>
<td>3rd Sep., 1877</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>512</td>
<td>25th Sept., 1877</td>
<td>G. W.</td>
<td>22</td>
<td>M.</td>
<td>Hairdresser</td>
<td>Abst. 12 yrs</td>
<td>Dr. Leu</td>
<td>24th Nov., 1877</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>569</td>
<td>7th Feb., 1878</td>
<td>R. A.</td>
<td>19</td>
<td>M.</td>
<td>Porter</td>
<td>Abst. 1 year</td>
<td>Dr. Edmunds</td>
<td>19th March, 1878</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>618</td>
<td>9th August, 1878</td>
<td>D. T.</td>
<td>12</td>
<td>M.</td>
<td>Father, labourer</td>
<td>Non-abstainer</td>
<td>Dr. Leu</td>
<td>29th Sept., 1878</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>888</td>
<td>17th July, 1889</td>
<td>J. P.</td>
<td>18</td>
<td>F.</td>
<td>General servant</td>
<td>Non-abstainer</td>
<td>Dr. Edmunds</td>
<td>23rd Aug., 1889</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>892</td>
<td>2nd August, 1880</td>
<td>E. M.</td>
<td>33</td>
<td>F.</td>
<td>None</td>
<td>Non-abstainer</td>
<td>Dr. Edmunds</td>
<td>28th Aug., 1880</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>1,073</td>
<td>2nd August, 1881</td>
<td>M. D.</td>
<td>20</td>
<td>F.</td>
<td>At home (married)</td>
<td>Non-abstainer</td>
<td>Dr. Leu</td>
<td>7th Sept., 1881</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>1,097</td>
<td>15th Aug., 1881</td>
<td>J. P.</td>
<td>18</td>
<td>M.</td>
<td>Porter</td>
<td>Non-abstainer</td>
<td>Dr. Leu</td>
<td>17th Dec., 1881</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>1,138</td>
<td>26th Sept., 1881</td>
<td>W. T.</td>
<td>39</td>
<td>M.</td>
<td>Marble polisher</td>
<td>Non-abstainer</td>
<td>Dr. Leu</td>
<td>20th Oct., 1881</td>
<td>Died</td>
<td></td>
</tr>
<tr>
<td>1,139</td>
<td>27th Sept., 1881</td>
<td>W. N.</td>
<td>39</td>
<td>M.</td>
<td>Builder</td>
<td>Non-abstainer</td>
<td>Dr. Leu</td>
<td>16th Nov., 1881</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>1,172</td>
<td>7th Nov., 1881</td>
<td>E. B.</td>
<td>10</td>
<td>M.</td>
<td>Father, bricklayer</td>
<td>Abst. 3 yrs</td>
<td>Dr. Edmunds</td>
<td>24th Dec., 1881</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>1,206</td>
<td>14th Dec., 1881</td>
<td>W. J.</td>
<td>10</td>
<td>M.</td>
<td>Father, Fr. polisher</td>
<td>Life abstainer</td>
<td>Dr. Leu</td>
<td>22nd Jan., 1882</td>
<td>Recovered</td>
<td></td>
</tr>
<tr>
<td>1,263</td>
<td>11th Feb., 1882</td>
<td>J. P.</td>
<td>15</td>
<td>M.</td>
<td>Type-founder</td>
<td>Non-abstainer</td>
<td>Dr. Edmunds</td>
<td>20th March, 1883</td>
<td>Recovered</td>
<td></td>
</tr>
</tbody>
</table>

Alcohol in Enteric Fever.
alcohol, also, in my opinion, predisposes to the occurrence both of intestinal haemorrhage and of that fatal complication—perforation of the intestine. For purely “stimulating” purposes I have long discarded alcohol, and I believe that its use as a “stimulant” is one of the most mischievous mistakes which still survive in medical practice. As an antispasmodic and as a narcotic alcohol has undoubted powers. There are, perhaps, also some rapidly emaciating cases in which alcohol as an oxyisable hydro-carbon may for a time take the place of food; but, on the whole, I use alcohol with extreme rarity.

2. I never feed my patients “solely with cold milk.” I always use more or less of well-boiled gruel, made from fine clean oatmeal; and, generally, I use as the staple article of food a mixture of two parts of thin gruel and one part of fresh new milk; the milk being added direct to the gruel as soon as this is completely cooked, and thus becoming scalded but not boiled. My own observation is that milk alone is too dense, and that the coagulum which unmixed cold milk forms in the stomach often proves indigestible, and becomes a cause of severe vomiting or intestinal suffering. I rarely get troublesome vomiting in typhoid.

3. In cases of haemorrhage from the intestine, I never select lead as a haemostatic, but always turpentine, in thirty-drop doses given upon loaf-sugar, or shaken up in milk, and repeated every few hours until the haemorrhage ceases. My objections to lead are (a) that, if useful as a haemostatic, it does harm by depressing the action of the heart, and sometimes by afterwards producing lead-poisoning. (b) That its action is very slow; whereas in haemorrhage of this kind we need an astringent which acts with great promptitude. On the other hand, the turpentine is prompt, not depressing, and never produces any serious ulcerous consequences.

4. In troublesome diarrhoea I give opium only as an exceptional remedy. I do not think that any advantage is gained by retaining offensive and acrid matters within the bowel, and I have rather aimed at neutralising the offensiveness and acridity of the discharges by administering frequent doses of a simple absorbent cretaceous mixture. Covering the abdomen with a hot, wet flannel and waterproof covering seems to me to relieve the pain and tenderness better than the administration of opium. I therefore rarely use opium except in cases of perforation, when I use it freely.

5. I always prescribe some daily dose of fresh fruit, such as grape-juice, or fresh lemon-juice in sweetened barley-water as a drink to be taken at the patient’s discretion. Some such fresh vegetable element is much longed for by the fever patient, and can generally be so administered as not to increase the diarrhoea.
The hæmorrhage, which so frequently occurs in typhoid, I believe to be often due to having overlooked this necessity for fresh vegetable juices. In all long illnesses, if fresh vegetable juices are not regularly administered, there arises a purpurous tendency which predisposes to irrepressible hæmorrhage, and to extension of ulceration.*

Twenty cases of typhoid fever do not, of course, suffice to settle any great question of practice; but this publication of them is called for by Dr. Bristowe’s remarks; remarks which, from one in his position as a medical teacher, are likely to influence the minds of the students who look to him for instruction. I am sure that Dr. Bristowe, in making these remarks, did not really intend to impute that physicians who do not prescribe alcohol precisely as he does are imperilling the lives of their patients, nor did he desire to embarrass the benevolent founders of the Temperance Hospital in the important experiment which they have undertaken to carry out.

Trusting that I have not overstepped the limits of academic discussion in thus treating the question raised by Dr. Bristowe, I need only add that the Temperance Hospital is always open to the visits of medical men, and that if he will pay the hospital a visit my colleagues and myself will be happy to show him some fifty patients now in its beds, all of whom intentionally appeal to the hospital for treatment in which they know beforehand that alcohol will only be employed when clearly necessary.

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Miscellaneous Communications.

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A SOBER VIEW OF ABSTINENCE.

By the Rev. Daniel Merriman, Worcester, Massachusetts.

This article contains an endeavour to find in some of the facts and circumstances of the case a reasonable footing for a practical abstinence from alcoholic drinks as a good rule,—the dictate of common prudence and Christian benevolence. The words “practical abstinence” or “abstinence” are used instead of “total abstinence,” inasmuch as this latter phrase, though apparently more definite, is in reality less so, because it is necessary in practice to qualify it with other words, such as “beverage,” which, again

* A valuable series of fresh juices from carefully selected grapes and other choice fruits is bottled by Mr. Frank Wright, High Street, Kensington, London. These juices are admirably preserved, and will be found of great value in cases where fresh grapes, &c., cannot be procured.
are indeterminate, and open a wide field of discussion as to what constitutes a convivial, dietary, or medicinal use. It is enough if abstinence can be established as the best general rule, to which use forms the exception. Our inquiry falls under three heads: first, prudential abstinence; second, benevolent abstinence; third, objections.

I. PRUDENTIAL ABSTINENCE.

The reasons for abstinence as a measure of prudence are derived (1) from physiology, (2) from experience. Let us consider, then,

1. Prudential Abstinence in the Light of Physiology.

Dogmatism here is very common, and in view of the enormous evils of drunkenness very tempting, yet caution and candour are greatly needed. In the present state of physiological chemistry we are not to look for proofs which will amount to a demonstration, but rather for evidence of tendencies. When scientific men who have spent their lives in investigating the subject speak of their knowledge as imperfect, and their conclusions as tentative, it becomes others to be modest.

1. We take up first the question as to the effect of alcohol upon the nervous system, because this is its most obvious and important effect, the effect which probably to a large degree controls all others, especially that upon the circulation and nutrition. Now what in general is this effect? Science and also experience when carefully interrogated at once answer, it is anaesthetic, or deadening. This is the perfectly well known and most prominent action of alcohol, that which makes it at once a charm and a curse, and also gives it whatever value it has. It cannot better be stated than in the language of Dr. E. A. Parke of Netley Hospital, whose death in 1876 removed one of the most profound and candid observers. Speaking of the effect of alcohol on the nervous system, he says: “In most persons it acts at once as an anesthetic, and lessens also the rapidity of impressions, the power of thought, and the perfection of the senses. In other cases it seems to cause increased rapidity of thought, and excites imagination; but even here the power of control over a train of thought is lessened.”

It is true in popular language this effect of alcohol is spoken of as stimulating, but in general no more misleading word could be used. Men do not drink to have their nerves excited, but really to have them partially paralysed, and if in some cases pleasurable excitement seems to follow, it is because a greater or less paralysis of the nerves controlling the circulation and mechanism of the senses and the feelings is taking place, and hence the blood moves faster, the sensibility is blunted, and the sensitiveness of the entire organism is agreeably diminished. The whole secret of the fascination which alcoholic beverages have always had is just here. As Professor William James says: “The reason for craving alcohol is that it is an anaesthetic even in moderate quantities. It obliterates a part of the field of consciousness, and abolishes collateral trains of thought.”† Let almost any one who has been a total abstainer take even a single glass of claret, containing hardly a thimbleful of absolute alcohol, and watch critically his feelings, and he will be apt to discover a slight deadening of the sensibility.

Dr. Samuel Wilks remarks: “If most persons analyse their sensations after the imbibition of any alcoholic drink they will soon discover that to describe the effect produced upon them by it as stimulating is a misnomer, and that consequently the employment of the word almost begs the whole question as to its operation and value. . . . Its stimulating effects may be regarded as nil compared with those which may be styled its sedative or paralysing ones. In a word, alcohol for all intents

A Sober View of Abstinence.

and purposes may be regarded as a sedative or narcotic, rather than a stimulant." And he points out as evidence the fact that an attack of toothache, for example, which a stimulant would increase, is relieved by a little brandy and water; that a drunken man may have his teeth knocked out in a brawl, and be unconscious of his loss; and that a violin soloist about to perform will find his notes blurred, his sensibility benumbed, and the edge taken off his bow by a single glass of wine. Similar are the statements of Sir William Gull; who speaks of alcohol as being beneficial in certain conditions when the nervous system needs to be deadened. It is this which gives it value in certain diseases.†

But while no one doubts that any considerable quantity of alcohol is an anaesthetic, producing narcosis, and ultimately, if large enough, coma and death, the critical and all-important question arises: Do small quantities produce in proportion the same effect? Here we come to a comparatively recent theory, which claims that there is a radical difference not only in degree, but also in kind, between the effects of a large and of a small dose of alcohol. This theory is so important, if true, and, though adopted by few, if any, of the great authorities on the subject, is so repeatedly, confidently, and dogmatically urged by many semi-scientific writers as an unanswerable physiological argument in favour of moderate drinking, that it deserves very careful attention.

The theory was maintained with much persistence by Dr. Francis E. Anstie, of England, who died in 1874. The pith of it, as set forth in his work on Stimulants and Narcotics, and in various medical journals, is that alcohol is a true stimulant or true narcotic according to the amount used; that there is a fundamental difference in kind between the two results of such use; that the effect of a small or "stimulant" dose is indistinguishable from the effect of "the digestion of a true food," and that there is no more recoil or depression from the one than from the other; while the effect of a large or "narcotic" dose is "no less than the severance of the copula of life, . . . in fact a more or less paralysis of the nervous system, . . . The use of even a single truly narcotic dose very probably produces a real physical damage to the nervous tissue, which absolutely requires a certain time for its repair." *

Now, if this distinction in kind exists, and if this sharp line is to be drawn between the stimulant and narcotic, the food and poison effect of alcohol, according to the amount taken, the marks of these effects must be distinct. It becomes, therefore, of the first importance to determine what are the earliest and precise symptoms of each effect. Investigation on this point is not complete; but it is agreed that narcotism by alcohol first produces paralysis of the vaso-motor nerves;† Flushing of the face is mentioned by most observers as the first sign of this. "The most conspicuous of the primary actions of alcohol is a dynamic narcosis of the ultimate fibres of sensation and of vaso-motion—most conspicuous because exhibited in the cutaneous surface under our eyes." ‡ Anstie says: "The first warning of alcoholic inebriation is flushing of the face; . . . and it is interesting as being the first symptom probably (when it occurs at all) of narcosis." †† In speaking of the stimulant or food action of alcohol, he says that to produce this effect it

* Popular Science Monthly (New Issue), Supplement, Feb., 1879, p. 32.
† Ibid., p. 13 seq.
§ "Stimulants and Narcotics," p. 171.
‖ Ibid., p. 204.
must be taken “in doses just too small to produce flushing of the face and sweating of the brow.” Professor John Fiske makes the same statement.† Anstie fixes the maximum amount of absolute alcohol which can be taken daily by the adult male without causing any narcotic effect at six hundred grains, or about an ounce and a half; ‡ and yet in giving the details of an experiment made on himself of taking an ounce and a half of whisky, equal to about three-fourths of an ounce of alcohol, he admits that “in this instance I used a quantity of alcohol so small as I should not beforehand have supposed capable of producing the poisonous results.” But “the poisonous effects were fully developed, though not very lasting. . . . The face felt hot, and was visibly flushed; pulse eighty-two, full and bounding; slight perspiration on the brow.” §

Now, without dwelling on the fact at which Anstie hints above, and which is a matter of common observation, that some people are narcotised by alcohol without any flushing of the face at all, it naturally occurs to any one to inquire whether it is not possible that this paralysis of the vasomotor nerves may take place in some slight degree at least long before it is manifest in the flushing of the face; and whether a sharper scrutiny may not detect some more subtle and earlier evidence of such paralysis than this “conspicuous” symptom, and a paralysis which may be the result of even smaller doses than those which “beforehand would not have been supposed capable of producing the poisonous results.” A hint which may help to answer this question is given in the observations made by Drs. Nicol and Mossop of Edinburgh. These gentlemen, conducting a series of experiments upon each other, examined the base of the eye by means of the ophthalmoscope while the system was under the influence of various drugs. They found that the nerves controlling the delicate blood-vessels of the retina were paralysed, and the vessels themselves congested, by a dose of two drachms of rectified spirits—less than a quarter of an ounce of absolute alcohol—or about a tablespoonful of brandy. * Here was a genuine paralysis, “a real physical damage to the nervous tissue,” wrought by a dose of alcohol so small as to be regarded by Anstie as only very mildly “stimulant.” The narcosis caused by this minute dose was, of course, less extended, but just as real as that which occurs when a man becomes dead drunk.

As the nerves and blood-vessels of the eye have a peculiarly intimate connection with the brain, this experiment would seem to show us, through this little window, as it were, to the cerebrum, how it is that even half a glass of light wine “goes to the head” of many people, that is, causes for a moment a slight dizziness and blurring of sight; and also how it is that, as Dr. E. Smith has shown, all the senses, particularly the sight, are blunted by very small doses of alcohol. † Is it impertinent to suggest that even smaller quantities than this quarter of an ounce may cause incipient narcosis, if only we had an instrument sharp enough to detect it? If so, the distinction in kind between the effects of large and of small doses vanishes.

Some further light is given on this point by experiments made by Dr. Mulvaney, staff-surgeon of the Royal Navy, upon the effect of alcohol upon the electrical currents of the body. He discovered that an ounce of brandy, equal to about half an ounce of alcohol, taken by a healthy man, raised the galvanometer in a few minutes, in

* Stimulants and Narcotics,” p. 113.
† “Tobacco and Alcohol” (New York, 1859), p. 92.
‡ London Practitioner, vol. xiii., p. 28.

one case twenty-five degrees, and in another case forty-five degrees. He concluded that the thermo-electric currents of the system were strongly excited by small doses of alcohol, and that this excitement may be profitably employed when there is "clear evidence of derangement of function springing from enfeeblement of the organic system of nerves;" but that "in health, when function, nutrition, and blood and nerve influence are harmonised by structural integrity," such artificially excited currents, by tending to abstract an undue amount of water from the brain-cells, "must interfere with their normal working."* This is clear testimony to the bad effects of even small amounts of alcohol in health, a matter to be noticed further on; but the precise point to be observed here is that the galvonometer affords a delicate test of the action of comparatively small quantities of alcohol upon the nerves, and of their narcotic, and therefore injurious, effect long before the ordinary signs of narcosis are apparent.

Relevant to the same point is some of the evidence as to the effect of alcohol upon the temperature of the body. This question has been profoundly discussed, chiefly in relation to the supposed food-action of alcohol, but it also has a bearing upon the inquiry as to the signs of narcosis.

That the temperature of the body is lowered by the administration of alcohol may now be regarded as a fact established by the investigation of nearly all observers.† The substance of the fact is well stated by Professor Carl Binz:—"The thermometer, the only reliable guide, indicates no important rise or fall after small doses of alcohol. Given in quantities a little larger, but still sufficiently moderate not to cause drunkenness, it causes a distinct fall, lasting half an hour or more; while after a dose powerful enough to inebriate, a still more decided lowering of the temperature, from 3°5 to 5° Fah., is observable, which lasts several hours."* Now the precise action of alcohol in diminishing animal heat is still in debate, but it is agreed that one way in which it acts is by relaxing the muscular tone of the capillaries through paralysis of the vaso-motor nerves, thus increasing the action of the heart, and bringing the warm blood more rapidly to the surface, where (though a sensation of warmth is experienced) it is cooled at the expense of the internal heat.† But we have the testimony of Professor Binz, above quoted, to the fact that though small doses do not produce any important rise or fall of the bodily temperature, yet "a distinct fall, lasting half an hour or more," is effected by a dose sufficiently moderate not to cause drunkenness. This extract from Binz, as well as others to the same effect which might be made from Ringer, Rickard, Wood, and others, certainly does not seem to indicate any difference in kind, but only in degree, between the effects of large and of small doses. It points to a regular gradation in narcosis from the action of the smallest to the action of the largest dose. Certainly it shows that the thermometer reveals minute paralysis of nerve-filaments produced by quantities of alcohol so small that they are called by some only stimulant doses, because they do not effect obvious signs of narcosis.

The fact is, Anstie's theory and his experiments and arguments in support of it are unsatisfactory. The theory so implicitly relied on by the friends of moderate drinking is by no means proved. It is no doubt true that in increasing the dose of alcohol from minute quantities a point is finally reached (never

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† British and Foreign Medical-Chirurgical Review, vol. lvii., p. 2; and Dr. Lauder Brunton, London Practitioner, vol. xi., p. 63.
a fixed one, as we shall see) when the ordinary signs of narcosis begin to appear, but it is not shown to be true that no narcosis whatever exists till that point is reached, still less that an effect entirely different in kind goes on up to that point. Analogy leads us to believe that, without evidence to the contrary, the same effect in kind is produced by a small as by a large dose. But such evidence is wanting. On the other hand, experience and many of the more refined and recent experiments, though certainly not conclusive, tend in the other direction, and indicate that the anaesthetic effect of a small dose, though not exhibited in the usual way, and not appreciably harmful, simply because there is no pronounced effect of any sort, is yet a real effect, and increases, as the dose increases, to distinct narcotism.

We are aware that it will be said in reply that other substances, such for example as salt and iron, have one action when given in small, and an entirely different action when given in large amounts; in the one case being necessary to life, in the other being deadly poisons. But the analogy does not hold when applied to the action of alcohol, for we have very clear evidence that the food-action of salt or iron consists in a series of chemical and vital processes, by which these substances are partly absorbed and partly decomposed to become normal constituents of the body; while the poisonous action of large quantities of these substances is simply irritant and inflammatory—an entirely different thing. But in the case of alcohol, though large and concentrated doses doubtless have a certain amount of irritant and corrosive effect in addition to their narcotic, yet the distinctive action of the drug, whether in large or small amounts, is practically one and the same in kind—anaesthetic, sedative, or narcotic. There may, indeed, often seem to be a stage of true food or stimulant action wrought by small doses of alcohol, but the evidence adduced would appear to show that this is not a direct, but a secondary effect, produced by a quickened circulation through a very slight deadening of the vaso-motor nerves—the narcotic action being real, though practically imperceptible.

Before proceeding further it is worth while to notice that this theory of Dr. Anstie applies as much to opium as to alcohol, and abstractly gives the same countenance to the moderate use of the one as of the other. Dr. Anstie, speaking of the abuse of opium by Orientals, declares that with them "its use is an important and genuine one; it acts as a powerful food-stimulant, enabling the taker to undergo severe and continuous physical exertion without the assistance of ordinary food, or on short rations," and he believes that to a certain extent the same remarks apply to natives of England, though the doses are generally smaller. While he thinks there is seldom "any noticeable intermediate state between the stimulant and narcotic dose of opium," yet he feels sure that its use in quantities of from one to three drachms of laudanum daily is very common among "persons who would never think of narcotising themselves any more than they would of getting drunk; but who simply desire a relief from the pains of fatigue endured by an ill-fed, ill-housed body and a harassed mind." That is, more exactly, like the moderate drinker of alcohol, they desire just enough paralysis of the nervous tract as shall suffice to dull sensibility, and blot out annoying impressions. But the man who therefore, wholly sustained by this theory, should advocate the moderate use of opium as a food-stimulant to be used generally, would be regarded as an enemy of his kind. Dr. Beard, a fair witness on this point, says:—"I would rather risk my life by jumping off Niagara Falls than by forming the habit of opium eating." Since the two drugs belong essentially to the same class, is then abstinence from alcohol, as the rule, unreasonable?

But even if we concede the truth of

* "Stimulants and Narcotics," p. 139.
† Ibid., p. 141.
‡ Ibid., p. 141.
the theory under consideration, it is of no practical value except as inculcat-
ing abstinence; for the vital question immediately arises, What is a stimu-
lator, and what a narcotic dose of alcohol? Here we are launched upon a sea of uncertainty of the most dangerous sort. If we take the view of Dr. Anstie, what he calls "the poison line"—the line that is where stimulation ends and narcosis begins—is never the same for any two individuals. And even in the same person it is continually shifting from an infinite number of causes. Climate, occupa-
tion, age, hereditary tendencies, previous habits, the character of the beverage used, the time, accompani-
ments, and frequency of its use, the degree of health, and various minor conditions, which change from day to day, make it impossible to give any absolute rule for a perfectly safe dose, except none at all. Almost all scientific observers, whose opinion is en-
titled to weight, now so clearly recognise the dangers consequent upon this fact, that, while they may indicate the amount of alcohol which, may, as a matter of theory, be taken without apparent harm, it is so small, and even this small amount is prescribed with such earnest cautions and strict limita-
tions as enormously to widen the boundaries of practical abstinence. So that the latest improved and scientific moderate drinker and the teeto-
taler are not half so far apart as they suppose. In fact it is only theory, and for the most part only a hair-
breadth of that, which separates them. Thus Dr. Anstie, as we have seen, fixes the maximum quantity of abso-
lute alcohol which can be taken by the adult male "without any perceptible injurious effect" at one and a-half ounce daily, but he admits that "this amount is distinctly within the average consumption of persons of [so-called] moderate habits," and would generally be regarded as "Utopian in its standard of temperance." He acknowl-
edges that many persons cannot safely take as much as this, or even any at all, and he states his "firm conviction that for youths, say under twenty-five, the proper rule is, either no alcohol, or very little indeed." *

Dr. Parkes, as the result of the experience of the Ashantee campaign, and of prolonged experiments upon healthy soldiers, fixed the amount which could be taken daily without visible narcotic effects, and with any ad-
vantage, at one ounce, and from that to one and a half; but he distinctly states that women cannot take as much, and that children ought not to take any.† For the purpose of stimulating a flagging appetite, he thought half an ounce sufficient.‡ Dr. Garrod, the great authority on gout, whose opinions are of special value, fixes the maximum amount of absolute alcohol which can be taken with safety in the twenty-four hours at less than one ounce, "and many would find this more than is really suitable to their constitutions, and would be better if only two-thirds, or even less, were taken."§

So much for generalisation. But it is conceded on all hands that there are many persons who, from constitu-
tional peculiarities or hereditary ten-
dencies, can take absolutely no alcohol at all without narcotism,—"persons," as Dr. Brunton says, "on whom the smallest quantity of alcohol seems to act like the taste of blood on a tiger, producing in them a wild desire for more, and destroying all self-control. For them alcohol is a poison, and total abstinence their only safeguard.” || It needs to be observed that these

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‡ "Proceedings of the Royal Society," 1870, 1872, 1874; "On the Issue of a Spirit Ration during the Ashantee Cam-
§ Popular Science Monthly (New Issue), Supplement, Feb., 1879, p. 54.
|| Ibid., Dec., 1878, Supplement, p. 143.
of a skilful physician may, it is well-nigh universally conceded, be a useful remedy, though Sir William Gull doubtless gives utterance to the opinion of the best medical men now when he says that "it is over-prescribed." To the positively healthy it is useless or hurtful. But it is in behalf of the nondescript dwellers on the border-land between health and disease that the benevolent appeal for moderate drinking is made. Respecting these persons and their habitual use of alcohol, several things need to be said. In the first place, they are not for the most part diseased persons, but those who are physically exhausted through over-work, over-excitement, and excess of care. They take alcohol mainly for the sake of its anaesthetic effect, that is, because it dulls the sensibility, and for a time enables them to forget their sense of fatigue; and also through a mistaken notion that it supplies force for their work, which in point of fact it does not supply. They have no idea of becoming drunkards. Very likely they do not become openly such, but, as Dr. Anstie says, starting "with the intention of using only such a moderate quantity as in fact would not be narcotic at all [?], but would merely relieve weariness, they suffer themselves to be persuaded that by increasing the dose the relief will be increased," until their daily potation becomes a necessity, if not a destruction.

Here we need to bear in mind the evidence already adduced which shows that genuine narcosis may take place without becoming at all manifest by the usual signs, and from a far smaller dose than that commonly supposed to be narcotic. In some individuals this is the case far more than in others. There is no telling what a narcotic dose is, only we know that for many persons any dose is, and that may be for the majority. Then we need to remember that any narcosis is simply destruction for the time being, to a

† "Therapeutics," p. 277.
‡ London Practitioner, vol. xvi., p. 122.
‖ "On the Use of Wine in Health and Disease," by F. E. Anstie, M.D., p. 3.

† "Stimulants and Narcotics," p. 217.
greater or less extent, of the functional activity of the nervous system, "a severance of the copula of life," as Dr. Anstie vigorously puts it, and probably arises, as Dr. Parkes suggests, "from a direct though transitory union of the alcohol with the nervous substance." * Temperance literature with all its high colouring can hardly match in vividness the scientific description of this effect which is given by Dr. Anstie when he says: "The use of even a single truly narcotic dose very probably produces a real physical damage to the nervous tissue, which absolutely requires a certain time for its repair. If the process of recovery be interrupted by an early repetition of the poisonous dose, it will be afterwards more difficult, and the reiteration of this vicious sequence will at last render a more or less considerable portion of the nervous system useless as a conducting medium of the peculiar impressions which it is its function to transmit; and hence arises an insensibility, which makes larger doses of the narcotic necessary, as already explained. Moreover, this insensibility is accompanied, almost necessarily, by an habitual feeling of languor and depression, which is very disagreeable, and with which the delusions of narcotism contrast very favourably. The dose is repeated, and, for reasons mentioned, in increased quantity; and the physical damage to the nervous system progresses in a way which it is not difficult to understand; for although the patient may have brought his nervous system to a state in which the symptoms of narcotic poisoning no longer include pleasant effects upon consciousness, the devitalising influence continues to be exerted." †

Supposing, now, the "truly narcotic dose," causing this "real physical damage," be, as both science and experience abundantly prove it is for many, and may be for the majority, the sip or two of brandy, the two or three glasses of claret or sherry, or the five or six glasses of beer, or even much less, which the "Utopian" moderate drinker takes during the day, then have we not very clearly set before us the danger to which these jaded people, who are neither sick nor well, are exposed from the charitable advice of the advocates of moderate drinking? Do we not also get a glimpse here at the normal genesis of the authentic drunkard?

But, in addition to this, we must recollect that as Dr. Anstie and others point out, and as is well known, the habit of even a "stimulant" indulgence in alcohol tends to enable the system to bear a larger dose without narcotism, or rather without its ordinary signs. For example, all the observers of the effect of alcohol in diminishing the animal heat referred to above, draw attention to the fact that upon those who habitually use even a very moderate quantity the effect of a larger amount is not to lower the temperature so much as it does with abstainers. The reason is, that the extreme sensitiveness of the nervous tract is very slightly yet permanently impaired by the composition of the narcotic with its substance. In this way the system gradually acquires what is called "a toleration of alcohol." The man never gets seriously drunk, for he is always more or less minutely so. His narcotism does not show itself. Very likely he is not at all aware of it himself. Nevertheless, it is there all the same.

It is here that we find an explanation of those abnormal and monstrous cases of men who are said to drink daily sixty or seventy glasses of beer, containing four or five per cent. of alcohol, without appearing to be sensibly narcotised. In these instances the system becomes accustomed regularly to relieve itself of this vast amount of liquid by the kidneys, and with it a large proportion of the alcohol is thrown off, else it would become almost immediately destructive. In respect to this power of elimination, individuals differ enormously. But when it is said that these men are never intoxicated, and perhaps never could be, by this liquor, it must be remembered

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† "Stimulants and Narcotics," p. 218.
that language is used in its popular
significance, and that there is evidence
which shows that in these cases, in
addition to more obvious evil conse-
quences, a prolonged course of slight
narcotism is going on, which gradually
deprives part of the nervous system
of its co-ordinating power.

Dr. Anstie describes this insidious
process as a gradual degradation in
the structure of those nervous centres
upon which alcohol has the most
powerful influence. The amount of
food received tends to diminish it, yet
vigour is often maintained. These
changes in the nervous matter—apart
from other diseases to which they give
rise—may shorten life, or they may
not. They may after a time bring
about a sudden rupture of brain fibres,
resulting in instant death, or they may
cause a “gradual shrinking of the
brain or spinal cord, or both, in bulk,
and the degeneration of a certain
amount of their vesical matter.”* In
this way he accounts for those ex-
trremely rare cases in which life is
prolonged to great age, with little or
no food, through the use of excessive
quantities of alcohol—which, however,
do not cause drunkenness, simply
because a large portion of the nervous
tissue is permanently narcotised, and
has “ceased to fill the rôle of nervous
tissue.”† yet the man exists.

It is true that Anstie attributes this
progressive and generally swiftly-run
course of narcotism to the constant
repetition of what he calls “a truly
poisonous dose” of alcohol. But what
is a truly poisonous dose? We can-
not too often insist that even theoreti-
cally this is an entirely uncertain and
undecided quantity; that individuals
differ so very greatly that generalisa-
tion is hazardous, if not impossible,
and that practically it is most likely,
as Anstie himself admits, the very dose
which the moderate drinker is daily
taking, “without thinking of getting
drunk.”‡

We are now prepared for the judg-

* “Stimulants and Narcotics,” p. 216.
† Ibid.
‡ See “Use of Wine in Health and
Disease,” p. 7 seq.

ment of two or three scientific men,
whose opinions deserve attention, as to
the prudence of this course of moderate
indulgence which is urged for the
benefit of those overworn and harassed
people who are on the border-land
between health and disease. And here,
as elsewhere in this article, the testi-
mony of those who might seem pre-
judiced in favour of total abstinence
is purposely left out.

The editor of one of the ablest
British medical journals says:—“We
frequently meet with most respectable
people, both male and female, who
have never been drunk in their lives,
yet have lapsed into a condition of
alcoholism by taking extremely small
doses of stimulant between meals, to
enable them, as they say, to bear up
against their work. These people
have more difficulty than drunkards
have in surrendering their appetites,”* the
reason being that through their
slight, but long-continued indulgence,
the nervous matter has been more pro-
foundly and permanently degraded
than in the man who drinks exces-
sively, and in a short time becomes a
gross drunkard.

Dr. Brunton, the distinguished
editor of the Practitioner, referring to
those who use alcoholic liquors with
the hope of aiding them in mental
work, remarks:—“Such persons may
sometimes go on taking alcohol in
moderation for a long time without
doing themselves much harm, but they
run great risk. For the very increase
in power which the alcohol gives them
is apt to induce them to use it more,
and when their nervous system begins
to fail under the combined effects of
the excessive demands upon it which
alcohol enables them to make, and the
destructive action of excessive drink-
ing itself, their self-control disappears,
and they may sink in a drunkard’s
grate.”†

Again, Dr. Parkes says, speaking of
some of the remote effects of alcohol,
“To use Dickinson’s expressive phrase,

* British and Foreign Medical-Chirurgical
† Popular Science Monthly, Dec., 1878,
Supplement, p. 145.
alcohol is the very ‘genius of degeneration.’ And these alcoholic degenerations are certainly not confined to the notoriously intemperate. I have seen them in women accustomed to take wine in quantities not excessive, and who would have been shocked at the imputation that they were taking too much, although the result proved that for them it was excess.”

But the crowning and most decisive testimony on this subject is given by Sir William Gull, in his evidence before a select committee of the House of Lords, in which he says:—“The constant use of alcohol, even in moderate measure, may injure the nerve tissues and be deleterious to health; and one of the commonest things in society is, that people are injured by drink, without being drunkards. It goes on so quietly that it is difficult to observe, even though it leads to degeneration of the tissues, and spoils the health and the intellect. Short of drunkenness [that is in those effects of it which stop short of drunkenness], I should say, from my experience, that alcohol is the most destructive agent we are aware of in this country.”

In view of these facts and this scientific testimony, the advocates of practical abstinence need not feel ashamed. It is this constant repetition of the small and apparently non-narcotic dose which, with its almost inevitable tendency to increase, the moderate drinker recommends to the over-worked and nerve-exhausted classes as good. Science, on the other hand, by her ablest, latest, and calmest interpreters, declares, it is dangerous and bad. Is it too much then to say that good sense and prudence dictate abstinence as the rule to which use must be the exception?

We have occupied what may seem an undue space in discussing the effect of alcohol upon the nervous system. The reason is, that this is the primary and altogether chief effect from which nearly all others take their rise. As Dr. Anstie says:—“When we consider the changes in the nervous centres as a part of the morbid tendencies induced throughout the body by alcohol, we find the former stand in a peculiarly prominent position. . . . The nervous system stands the full brunt of the poison, and suffers by far the most serious changes—a circumstance which we must attribute to some peculiar attraction between the nervous element and alcohol.”

If we except the mischief done to the mucous membrane of the digestive apparatus, almost all the alcoholic derangements of the system, including those of the mental functions, are the result of the breaking down of the co-ordinating power of the nervous organism, probably through a combination of the alcohol with its substance. Let us now glance at some of these effects, brought on by habitual, but comparatively small quantities.

2. The action of alcohol on the blood, as shown by Harley and Smiedeberg, is to lessen the power of the red corpuscles to give off oxygen, thereby diminishing the oxidation of the tissues, and reducing the heat and functional activity of the body. “The chemical changes of the blood are partly arrested.” In certain diseases, especially in fevers, this may be helpful, but when the processes of the body are normal, it is likely to be injurious; though if the quantity of alcohol taken “be small and not frequently repeated, little or no harm will come of it. If it be frequently taken, however, by persons in average health and fair digestion, its effects will become obvious in the imperfect combustion of fat and its consequent accumulation in the tissues.” Because of this the potatory habits of people who are not suspected of taking alcohol can be detected by a certain velvety quality in the skin. It is partly in this way that the redundance of fat and fatty degenerations are

† See Anstie’s “Stimulants and Narcotics,” p. 160 seq.
brought about which are often seen in persons who take only very small amounts of alcohol in the form of fermented liquors, especially beer. In such cases there is no drunkenness, but these changes go on slowly and insidiously to the ultimate disorder of all vital processes.

3. The effect of even small amounts of alcohol upon the action of the heart, while doubtless beneficial in cases where that organ is enfeebled, has been fully proved to be injurious in the average subject by the elaborate researches of Dr. Parkes and Count Wollowicz, who found that a single ounce of alcohol increased the number of daily heart-beats 4,300 above the number when water alone was used; and that, taking the usual estimate of the heart's daily work, it did, during an alcoholic period of six days of varying doses, daily work in excess of this, amounting to 15'8 tons lifted one foot.* With claret the results were almost identical with those from brandy. Upon the results of their experiments these distinguished observers remark:—"In spite of our previous experience in the use of alcohol and brandy we were hardly prepared for the ease with which the appetite may be destroyed, the heart unduly excited, and the capillary circulation improperly increased."†

4. As to the action of alcohol upon the stomach great risk is incurred in its use, and its value in stimulating appetite and promoting digestion is over-estimated. In many cases requiring substantially medical treatment it no doubt helps; but even in these cases, unless taken with great care and in very small quantities, it more frequently weakens and eventually destroys both appetite and digestion by supplanting, through the tendency to increase the dose, the natural stimulus of food. Dr. Parkes says:—"In very small quantities it appears to aid digestion; in larger amounts it checks it, reddens the mucous membrane, and produces a chronic catarrhal condition;"* and Dr. Brunton remarks that "healthy stomachs with ordinary food do not require it, although in small quantities it may do little harm. A larger quantity, however, is certain to do harm. Moreover, if regularly used, even in small quantities, the stomach may become habituated to it, and refuse to respond to the stimulus of food alone unless supported by that of alcohol." † This is a scientific description of the fact constantly observed, viz., that there are men, not intemperate, whose digestion is spoiled by indulgence for a long time in very moderate quantities of alcohol. In general, in its action upon the digestive organs, as elsewhere, it proves itself to be an abnormal agent, to be used only in abnormal conditions. In this particular instance its useful effect seems to be mainly in rousing the nerves of taste; and the same end can generally, and with much less risk, be attained by change of food and the use of fruits and other flavours.‡

5. As to the hotly-debated question respecting alcohol as a food, or food-stimulant, much has been anticipated in what has been said with regard to its action upon the nervous system and the blood. The inquiry whether alcohol is eliminated unchanged, or is decomposed within the body, and if so in what way, derives its chief importance from its bearing upon this question. Much stress has been laid, by those who claim that alcohol is not a food, upon the supposed fact that it is not transformed in the system, but is at once thrown off by various channels. This declaration was made with confidence in 1860, by certain French chemists. Their conclusions were, however, speedily criticised, and have been overthrown by later investigations. It would seem to have been proved by exhaustive experiments that, except in large doses, alcohol is not

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† London Practitioner, vol. xvi., p. 63.
‡ See Prof. William James in Boston Daily Advertiser, May 19, 1881.
generally thrown off from the body unchanged, and even then only in proportionately small amounts. Within certain limits its "destructive decomposition within the body" would now seem to be a pretty definitely settled and accepted fact."

Precisely how this decomposition takes place and what are its products is still in debate. Many observers, including Anstie, Binz, Baudot, Dupré, Brunton, and others, believe that it is oxidised within the body, as it is without, into carbonic acid and water, though this is by no means conclusively proved. Richardson thinks that it is changed "into a new soluble chemical substance, probably aldehyde."†

But the question whether alcohol is a food—chiefly a question of definitions—is not positively determined by settling whether it is decomposed in the body or not, and, if it is, into what products; for water, which is absolutely essential to life, and must, therefore, in a broad sense be regarded as a food, is not transformed at all. On the other hand, if alcohol is transformed in the body it would seem to show that it is a food. Yet, as Dr. Parkes suggests, "even if its complete destruction within certain limits were quite clear, this fact alone would not guide us to the dietetic value of alcohol. We have first to trace the effect of that destruction, and learn whether it is for good or evil." This statement contains the pith of the matter. It is agreed that alcohol does not directly build up the system. "Alcohol is active rather in the direction of repressing than of forwarding the growth of new structures."* It is not a food, then, in this sense. But in the sense of supplying energy, though it may itself be oxidised, and therefore seem to supply force and heat, yet it also diminishes oxidation, thus overcoming what might be, and what in febrile disease are, its food effects. We have to look at what else it does besides being itself burned.

As Ringer states:—"Even if the greater part of the alcohol is consumed, and thus ministers to the forces peculiar to the body, yet alcohol, by depressing functional activity, favouring degenerations, &c., may do more harm than any good it can effect by the force it sets free during its destruction; even if taken in quantities too small to do harm, yet it can scarcely be classed as an economical food for the healthy. Granted that dietetic doses check oxidation in the healthy, and thus economise the blood and tissues, still, unless it can be shown that in health there is constantly an excess of consumption over and above that required by the body, a diminution of oxidation could only result in lessening the amount of force set free, and put at the disposal of the organs, entailing, of course, a diminution of the functional activity of the body."†

Dr. Hammond, indeed, found that when he took too little food and lost weight, alcohol prevented the loss, and even supplied gain;‡ and Anstie has collected some cases in which he claims that life was supported for years by large doses of alcohol with substantially no food;§ but, as Parkes says, these cases "demand more exact data;"∥ and Hammond himself remarks that "when the supply of food is normal, and there are no special circumstances existing which render the use of alcohol advisable, it is not

† Ibid., p. 117.
‡ Letter to Anstie, Practitioner, vol. viii., p. 82.
to be commended." * In short, its use for any purpose of nutrition must be the exception, and not the rule.

About the most that can be said of the dietetic value of alcohol is that under certain exceptional conditions it may be a "saving food" retarding tissue change, deadening nervous irritation, and that it may for a brief period enable a man to draw upon his reserve energy. But whatever theoretical controversy there may be, all observations conclusively show that as a nourishment for mental or physical exertion its use, even in very small doses, is utterly deceitful and bad. Parkes found from the experience of the Ashantee campaign and other experiments that it was worthless as a source of energy to the muscles, and that they were supported far better by coffee or meat extract.† And the experience of engineers in such an enterprise as shifting the gauge on the whole length of a great railroad-line, a work requiring the most rapid and prodigious exertion, shows that "weak skily"—thin oatmeal porridge—gives a strength and vigour that no grog can supply.‡ As to the use of alcohol as a giver of strength in mental work, physiological opinion is unanimous against even the smallest quantity.

Theorise and define as we may, to use alcohol as a dietary agent, unless in exceptional cases, is, in the view of science, just about as sensible as the advice of an old factory girl to a new comer: "Don't waste your money on pie: get a glass of gin; it's cheaper." Science would say: Don't waste your money on either; get a dish of soup, of oatmeal gruel, a cup of coffee, or of meat-extract. It is better, cheaper, and vastly safer.§

6. At this point an interesting in-

* "Treatise on Hygiene," p. 537.
† "On the issue of a Spirit Ration during the Ashantee Campaign of 1874," p. 56, et passim.
‡ British and Foreign Medical-Chirurgical Review, vol. lviii., p. 7 seq.

quiry arises. It will be said that we have been dealing hitherto with the effects of simple alcohol, an article which, in its absolute form, is only obtained with difficulty, the common use of which, in the form of distilled liquors, is discountenanced by all who in any way advocate temperance, but whose action, when it is taken in the form of fermented liquors, is entirely different from its action when taken alone. This last statement is not at all so clear as to pass without proof; but before turning to this, there is one fallacy in the arguments concerning the matter which is constantly urged by the advocates of moderate drinking, and which deserves to be pointed out.

The analogy of other poisonous substances is confidently brought forward to show that though pure alcohol taken alone is a poison, yet in certain combinations it may be a food, and therefore its action as alcohol is essentially different from the alcoholic action of wine and beer. Thus Dr. Beard says:—"Phosphorus is one of the most virulent of poisons, but is found in fish and meat; and partly for this reason is it that fish and meat are good diet for brain workers,"* implying that we are constantly taking phosphorus into the system as an article of food. And Professor Fiske says:—"Chlorine is eminently a poison, yet we are all the time taking it into our systems, combined with sodium, in the shape of common salt,"† But Dr. Beard and Professor Fiske know perfectly well that in point of fact we never take these virulent poisons into the system at all, but only certain chemical combinations of them with other elements, making entirely different substances, viz., phosphates, phosphites, hypophosphates, and chlorides. But the analogy breaks down utterly when applied to alcohol in fermented liquors, for whatever effect it has in them is due simply to itself as alcohol, and not to any chemi-
A Sober View of Abstinence.

...cal combination whatever into which it enters with their elements, for there is no such combination present.* It has been proved abundantly through repeated tests by the most careful and authoritative observers that there is not "found a single physical or chemical property possessed by wine which is not in perfect harmony with the assumption that it contains the alcohol as a simple admixture, and not in any sort of chemical combination."† So much for the oft-repeated fallacy that the alcohol in wine and beer is not alcohol at all, but some sort of a nutritive chemical combination of it with other elements.

There are, of course, in fermented liquors a large number of other substances besides the alcohol; but whether these substances are in themselves helpful or deleterious is an open question upon which authorities differ, and which is dependent chiefly upon the precise character of the liquor used, and the condition and idiosyncrasies of the drinker. That these substances are sometimes tonic and alimentary is clear; that they are very often seriously harmful and the active cause of a class of diseases like dyspepsia and gout is equally clear. Wholly apart from their alcoholic effects, and from the large question of adulteration, it really demands much experience, or the judgment of a physician or expert, to determine what, if any, wine or malt liquor is helpful in a given case.‡ But the almost sole reason for drinking these liquors is, after all, the alcohol they contain, without which they would be of little enough; and so far as the alcohol is concerned, the reason for taking it in them rather than alone is, for the most part, the same as that for taking it mixed with water and with food, viz., simply that it may be beneficially diluted, and therefore that its acrogenetic or corrosive effect upon the stomach and alimentary canal may be avoided, and that it may be absorbed more slowly, causing, as Dr. Parkes says, a more "moderate paralysis of the vaso-motor nerves of the stomach."** But the assumption that, apart from this dilution, the alcohol in wine and the alcohol in spirits have an essentially different action, is overthrown by the elaborate researches of Dr. Parkes and Count Wollowicz upon the effect of red Bordeaux wine upon a soldier, which are summed up by saying:—"In general terms we may say that the results obtained were the same as those observed in experiments with plain spirits and brandy."††

Besides this, we need to recall the fact, to which we have already quoted the testimony of Anstie, that the changes wrought in the nervous system by alcohol are far more important and serious than all the other disorders brought on by this agent, and then put with this the fact, which Anstie also emphasises, that there is this important difference between alcoholic action upon the nervous system and other organs of the body, especially upon the digestive apparatus, that "whereas in the latter case very much depends upon the kind of alcoholic liquor taken, and particularly upon its degree of concentration, the effects of alcohol upon the nervous system seem to depend almost entirely upon the quantity of alcohol taken in each day or week, and very little upon the kind used."‡‡

The distinction between the alcoholic action of pure spirit and of wine thus dwindles to a mere nothing, and is dependent almost solely upon the

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* Certainly there is none except, perhaps, in infinitesimal quantity. It is supposed that the bouquet of wine—when not artificial—is due to enanthic ether, a compound formed by the action of acetic or other acid upon alcohol; but this is so minute as not to enter into the account.
‡ See Anstie "On the Use of Wine in Health and Disease."

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fact that one is simply more concentrated than the other.

A strong protest is made against drinking distilled liquors by those who advocate the use of fermented beverages as a cure for intemperance. As reformers they stay themselves mainly upon this protest and advocacy. Yet they are really inconsistent. The distinction between the two kinds of alcoholic beverage is less important than they suppose; for, if only distilled liquors be properly diluted and taken with food, there is excellent authority for saying that in many cases this is the best way to take alcohol if it is to be taken at all. Thus Dr. Parkes says: "When the effect of alcohol upon digestion alone is sought, I think by far the best plan is to follow the plan advocated by Wilks, and give rectified spirit, properly disguised, as medicine. We shall then be certain of purity; that the proper quantities are given, and at the times we desire." * The same course is recommended by Binz in view of the difficulty of obtaining pure wines, † and by Richardson and others as a wiser because a more accurate and measurable method." ‡

Indeed, in connection with the fact that the precise point where narcotism begins is indeterminable, and that the minimum quantity of alcohol which produces it is also indeterminable, it is obvious that one of the chief perils of the habitual drinker of fermented liquors is that he never knows, or is careless about, the exact amount of alcohol he is daily taking, and thus the actual danger of that slow and insidious narcosis already pointed out is increased by the use of what he considers pre-eminently safe beverages.§

7. We may glance at a few of the restrictions scientifically put upon the use of alcohol, which constitute a strong argument in favour of abstinence. Thus all physiological autho-

† Practitioner, vol. xvi., p. 365.
‡ New York Independent, article by Dr. Coan, spring of 1879.
§ See Anstie "On the Use of Wine in Health and Disease," p. 7 seq.

rities insist that any alcohol is almost always useless, if not positively hurtful, in health; that even in minute doses it is poison to many people; that it should never be taken by children, or habitually even by young men or young women; that it is useless, and even dangerous, to take it in extreme heat or extreme cold; that it must never be taken during exertion, either mental or physical, with the idea of supplying strength, which in point of fact it never does supply in such cases, except at the cost of subsequent depression; that it must not be taken by athletes, or by those who have severe and critical mental or physical work on hand; that it must never be taken early in the day; never on an empty stomach; never in more than one form daily; and never unless largely diluted either naturally or artificially. All of this makes practically in the direction of abstinence. These broad and well-grounded restrictions put the advocate of habitual moderate drinking, as that phrase is commonly understood, in the position of one who must give a distinct reason for his habit.

And here we may sum up this part of our subject in the language of a medical writer already quoted, who says: "Few persons will deny that there are circumstances by no means of infrequent occurrence when it must contribute to the well-being of the individual to modify the nutrition and other vital acts of the body in the directions indicated above [i.e. in the way of deadening nervous irritations, rousing the heart, stimulating the circulation, &c.]. But a great many will dissent from the opinion that it is wise to employ the means thus placed at our disposal. They say you are paying too much for your whistle; that the retardation of the blood-current and the relaxation of the capillaries necessarily tend to permanent organic lesions, latent in deed, but insidious, and aggravated by each additional dose in proportion to frequency." *

Practically the whole matter is in a nutshell: Will it pay? In view of the utterances of science, the answer of prudence would seem to be, No.

Good sense must make abstinence the rule, use the exception.—*Bibliothea Sacra*.

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**EFFECTS OF ALCOHOLIC LIQUORS UPON HEALTH AND WORK.**

*By Andrew Clark, Esq., M.R.C.P., Lond., Physician in Ordinary to Her Majesty the Queen, &c.*

A meeting was held in the warehouse of Messrs. I. and R. Morley, 18, Wood Street, on Friday evening, 6th January, when there was a large attendance of young men, chiefly employed in shops and warehouses throughout the City. Mr. Samuel Morley, M.P., occupied the chair. One of the speakers was—

Dr. Andrew Clark, who said: I find myself to-night in quite an exceptional position among you. I am not here, like our distinguished chairman, to advocate a view; I am here merely to relate an experience—an experience which extends at least over a quarter of a century, and which has been directed towards a specific question with considerable means of investigation, and I think I may say, without affectation, with a sincere desire to arrive at the truth. I propose, therefore, to occupy the time allotted to me with giving you the result of my experience of the effect of alcoholic liquors upon health and upon work. I shall confine myself chiefly to these subjects. It may be—

nay, I know it will be—that the results of this experience are not quite in harmony with the views of the society under whose auspices we are met here to-night. But I shall claim at your hands, in consideration of my coming here this evening, that toleration—yes, that charity—which every seeker of truth should accord each to the other, knowing, as everyone must know, the difficulties of the research, and the paramount claim which the conscience has in such a matter as this. I, too, feel, as Mr. Morley feels,
Effects of Alcoholic Liquors upon Health and Work.

broken up, how peoples decay, and how a great nation like Sweden begins to fall among the other nations of the earth in consequence of the abuse of alcohol; then our feelings get so disturbed that our perceptions are blunted and our judgment is often swayed wrongly, and we feel in the desire—the overwhelming desire—to put away this evil, that no thought, that no other statement, no other opinion or experience on the other side ought to be listened to, but that the thing must be put down at once.

There is another difficulty. It is not only in ourselves that the difficulty lies; it is that we ourselves get associated with certain parties holding set opinions, and consequently there is often a certain party spirit which takes possession of us in discussing and advocating questions of this kind that is too apt to lead us a little way astray in our efforts after truth. And there is another reason, and that is the mere love of the triumph of our opinions. All these are feelings which make it extremely difficult to get at the real truth of this question of alcohol as far as we are ourselves concerned. But there are other difficulties to contend with. One great obstacle is the slowness with which the evil effects of alcohol are made manifest. It often seems to us that men who are taking alcohol in a certain quantity—which I, for my part, would consider an excessive quantity—seem to be better than other people. They are often redder, and louder in their talk, and jollier in their meetings and a little more enthusiastic in their work, and one would be a little apt, looking at those men taking a considerable allowance of alcoholic drinks year after year, to think that there is no harm in alcohol. Those men are the pictures of health and jollity; there is nothing wrong with them as far as we can see, and it must be a delusion, we think, that alcohol injures them in the least. But often, when what I call excess is being used, under the very appearance of this health and jollity and brightness of spirits, disease is making its way in the deeper parts of the body, and sooner or later, it begins to show itself, and then it is that you hear that the man who was so robust and full of health and spirits is suddenly cast down by some disease of the kidneys, disease of the heart, or some of the other kindred diseases that afflict men of middle age who have not been careful in their use of alcohol. There are many other difficulties which might be given but which I will not multiply, but I wished merely to mention one or two to show you that the truth is not so easily got at as we are apt to imagine, and to be a sort of excuse for those who, like myself, are slow to make dogmatic statements on this question.

It is not only when we get rid of these difficulties that we are free to pursue without fear the investigation of this matter with the likelihood of reaching truth. The process of investigation itself is very difficult. How are we then to get at the truth? We will suppose now that the difficulties of which I have spoken are all put aside, and that we are alive to these difficulties, and that we have only to proceed to inquire into the effects of alcohol. There are various methods, and I will mention one or two now—I do not seek to dwell on them—that you may see the steps I have taken to get at what seems to be the truth of this subject. In the first place, we have our own personal experience. I think that every man come to the years of adulthood should learn for himself what alcohol is to him, and what it is not to him. I think that every man should perform this experiment carefully for himself, not over a week or a month, but over a sufficient period, say six months, in order that he may learn from this experiment how alcohol may affect him.

I say, then, the first method is personal experiment. Then there is a second method, a very valuable one: it is that of inquiring into the results which follow from numbers of men being placed under like circumstances—in other words, inquiring into the effects of alcohol and no alcohol in such cases. For example, an experiment was once performed at Netley on men who were of equal
age, who lived in the same fashion, and on the same food, breathed the same air, and lived in the same house, and were occupied with the same work—the results of which I will give you later on. This is the second method of investigation by which we hope to reach this truth. The result of an experiment of that kind is beyond all value, because it has hitherto been performed on men who have had no particular views of their own, and who submitted themselves wholly and entirely to the process of inquiry. There is a third method—not a bad one—that is of looking at the histories of great military and naval expeditions in order to determine how these great expeditions were conducted in cases where alcoholic drinks were freely used, and in cases where they were not freely used or used at all. One of the most valuable results of this method of investigation has been to show—and it is open to anyone to read these results for himself—that in the history of the siege of Jellalabad, in the Kaffir war in South Africa, in the Red River Expedition, and in various Arctic voyages, it has been invariably found that the greatest amount of work and the least amount of sickness were associated either with entire abstinence from alcohol or with the administration of such a minute quantity of it as actually counted for nothing.

Then there is another method of experiment still, and that is to look at the histories of nations which have been more or less temperate, and compare a nation which has been called specially temperate with one which has not been temperate. I myself, however, object to this method of investigation. I have carefully used it myself to see what fruit would come of it, but I have never been able to get any good results from it, and I mention it now to warn my hearers that this is not a fair comparison, for you must remember you have to deal with difference of race, difference of climate, difference of habit, and so forth, which prevent the experiment from being made a complete or useful one. Lastly, we have the experience of doctors. Now, this experience may be treated in two ways, according as we are friends to the doctors or enemies. I am bound to say that sometimes we doctors err on the side of the desire of our patients, rather than from a want of conviction in our minds in this matter. I am open to confess that; and I think I can afford to confess it, for my profession is a noble one, and I think exercises as much, if not more, self-denial in behalf of the public at a smaller cost than any other one. I do not pretend to say for one moment that doctors have any faculties which the general public do not possess, or that they are even more judiciously trained, though I might fairly say so, than others; but observe that doctors have especial experience on this matter. It is their very interest to find out what is the relation between alcohol, health, and work and disease. It is their interest to find it out, because according to the accuracy of their finding will be their power in healing their patients; and if doctors, like others, be sometimes weak, and fail in their duty, yet in the main their hearty desire is to benefit those who seek their aid. By one or other, or all, of these methods, we have to inquire what is the effect of alcohol upon health and work; and in one or other or all of these ways, either personally or by reliable trustworthy accounts, or by listening to the careful experience of others, I have formed the conclusions which I am now going to repeat to you. I must remind you of two other methods which I have not mentioned, and which I have personally enjoyed—namely, my personal experience in what is called private practice, and also my public experience as a hospital physician. Taking all these methods of investigation together, and being influenced by a desire to get at the truth, I have formed certain conclusions. First of all, as to the effect of alcoholic liquors upon the health. What is health? On this point turns a great deal of what has been said on this question. It is impossible to define health, and
I am not sure that I shall be able to describe it approximately. But I should say that health is that condition in which all the bodily functions are discharged without any feeling of uneasiness, but with a feeling of comfort; that state in which we rise to the business of the day with eagerness and retire at night with peace; that state in which it is a delight to see, to taste, to hear, to feel— to be; that state in which a man goes along the journey of life for ever getting and giving joy. That I take to be a sound state of health. But that is a state which I dare say is never wholly enjoyed. We live, unhappily, under such circumstances that we are not always in that state. A number of things concur to make it so, and often the good health, as we seem to get it, is after all but a poor health. This is attributable to various hereditary influences, and the circumstances surrounding us over which we have no control. In this kind of indifferent health, which is the lot of the majority, what has alcohol done? First, amongst those people there is a certain proportion—I do not pretend to say exactly what proportion, but there is a certain proportion—who appear to be not only not injured by a certain limited quantity of alcohol—I say there is a certain proportion, though not a large one, who appear to be not only not injured by a certain small quantity of alcohol taken at the proper time, but who feel comfort from it; who say that they feel better for it, that they can do that with it which they cannot do without it, that they can go the round of their daily lives and feel relieved by the help it gives to them, and who appear to go on to the fullest term of life without falling by the way victims to any disease which could apparently be traced to the use of alcohol. I do recognise that, and I do say that the charity of teetotalers, whose blessed work no one feels more than I do, should be extended to those people. Secondly, there are some people, a certain percentage who do not pretend to be benefited by it in that way, who say, "Well I don't require it, but I feel happy with it. It loosens my tongue, it makes me jollier, and gives me a feeling of enjoyment which I have not without it. It produces an element of gladness in my life, which I could not have without it." I am bound to say, looking at those people from a distance, and trying to find out the truth about it, and not sympathising with them, I am bound to say that such a percentage exists. I feel it to be true that some people do get gladness out of life from alcohol which they otherwise would not get, but it is only under certain conditions, which I will specify by-and-by. Then there are certain people who use alcohol in what some men would call immoderate quantities, who seem to be benefited immensely by it, who get fat upon it and rosy, and apparently full of health and vigour at times. They are always very joyous and happy, for ever ready with a song, and are the envy of the sober ones around them. There are people, and not a small percentage, who go on and on and seem to be not only better with the alcohol, but incapable of doing without it. They are people who take it generously, but almost invariably—although some people can drink almost a bottle of brandy a day and live to ninety—these people show the signs of it as soon as they reach middle life. Their eyes, for example, assume an inflamed appearance, the muscular fibre of the heart begins to degenerate, the kidneys or liver give way, or something or another gets out of joint, and underneath this ruddy countenance, this big body and jovial manner, disease begins to show itself. All these people are cases which come under the notice of every physician whatsoever, and they cannot be ignored, and certainly not so far as I am concerned. As respects the others I accord my toleration and sympathy, though I say, and say it candidly, if you are well without alcohol you may depend upon it you will be no better with it. So much for the influence of alcohol upon the health. I will now say a word or two about its influence upon work. I daresay that for a sudden short spurt of
work that has to be overcome, or the nervousness which often hinders work—the general malaise or palpitation that a man who, like myself, is unaccustomed to public speaking, feels when he addresses a public audience—I daresay if a man took a glass of wine, as sometimes people do to overcome that nervousness, he might succeed, and indeed I am bound to say that that sort of help alcohol sometimes can give to a man under such circumstances, but it gives it curiously enough at the expense of blunting his sensibilities. If I were to address a public meeting and felt a little nervous, not having had time perhaps to prepare what I was going to say, and took a glass of wine, it would quiet me instantly. All my palpitation, nervousness, and so forth, would at once vanish, but I would purchase this relief at the acuteness of my perceptions. And I object in the strongest possible manner that a man should rather fail in his work than take a little spurt from alcohol to get over it. But though alcohol may help a man on these emergencies, yet I am bound to say that for all honest, enduring fruitful work alcohol never helps a human soul. Never, never. The tests whereby this has been determined are these. They are two-fold: personal test and the test of numbers of men engaged under precisely similar conditions. First, as to the personal test. There is perhaps no work—although, of course, we are all apt to think our burden heavy—so arduous, so trying, as the work of a busy London physician. I am sure that you will forgive me if I introduce myself on this occasion. My day is something like this: I never could frame a day and carry it out according to my intention. Soon after eight o'clock I begin to receive people, and that goes on without interruption to three o'clock, and without altering my attention for a single moment. At three o'clock I am too late for my first afternoon consultation, and I bolt a mouthful of bread or a small piece of cold fowl, rush into my carriage and over the town till sometimes eight, nine, and ten o'clock at night. Then I get home and gobble a hurried dinner and read over the letters which have been received during the day, and determine, as far as possible, the work of to-morrow. That goes on every day, Saturday and Sunday, eleven months of the year. Never having been a strong man I have naturally tried every method conceivable, high living and low living, total abstinence and drinking, to get over the work, and the result has been for ever the same. If I took two glasses of claret during the day I could not do my work. Instead of helping me it would hinder me and hurt me. It would take away the acuteness of my perception, the keenness of my interest in my cases, bias my judgment, and unfit me altogether from doing the work which I had to perform. But, mark you, I am not laying that down as a measure for every other person; but I give you one example to show you that a man, not naturally strong, who goes through an amount of work which some people, even statesmen, have often said to me was appalling, and declares to you if he took alcohol he could not do it. If I dine out, as Mr. Morley may be able to tell you, for I think he has seen me take a glass of wine—in a weak moment I allow myself to be a little more social, and I may drink a glass of wine; but I must confess I am never much the better for it afterwards. That is my testimony as to the effect of alcoholic liquors upon health and upon work, namely, that for all purposes of sustained, enduring, fruitful work it is my experience that alcohol does not help but hinders it. One of the ablest and, at the same time, one of the most faithful observers that I ever knew, one of the men best fitted to conduct an experiment of this kind—and I must tell you that it is not everybody who has got the rare faculty of investigation of such subjects—was the late Dr. Parkes, of Netley, a man of very delicate health, who, if he had been able to stay in London, would have been one of the first physicians of his day. But, in consequence of his delicate health, he went to Netley, where for
many years he gave the public the benefit of his skill and research. Well, one of his experiments—the exact details of which I cannot pretend to give you with literal accuracy, but I can pretend to give you them with sufficient accuracy for the purpose of illustration—was this: he took a certain number of men of like age, of what is called fair health, and living under the same circumstances—that is to say, eating the same food, breathing the same air, and living under the same roof, and so on—and he divided them into two gangs; and one was called the non-alcoholic gang, and the other the alcohol, and they were put to do a certain kind of work for which they were paid. Well, after they set to work, the alcohol men beat the non-alcoholic men the first hour or two right away. But after the first spurt was over the alcohol men began to flag; and then slowly went on the non-alcoholic gang, and before the day was done they went far ahead of their alcohol opponents, who began to fail towards the end of the day, to feel weak and weary, as if they had no spirit to go on. And the curious part of the experiment was this, that when he reversed the order of things—that is to say, made the non-alcohol take the place of the alcohol men—the results were precisely the same. So strong was the experiment, and so deeply did it impress the men who were engaged in it, that not knowing its full bearing relating to the public health and to work, the alcohol men begged to be put upon the non-alcoholic gang, in order, as they expressed it, that they might make a little more money. I will not occupy more of your time, but simply sum up what I may say is my experience on the topics on which I have spoken so far. The first thing that I would say is that alcohol ought never to be given to the young. The second thing is, that every adult man who finds himself after trial—and every man should try—to be a thousand times better without alcohol, should not resume it, because he will work better, he will enjoy more, he will have a longer exemption from disease, he will probably live longer, and certainly he will be better in all the higher relations of life. The third thing is, that if a man does find that he feels the better for a little alcohol—that it enables him to do that which he could not do without it, and that it does not sensibly to himself injure his health, then all I can say is that he can only take the alcohol with the utmost regard as to quantity and time. As to the quantity, I should say that it must not exceed one half-pint of ordinary beer twice a day, and next as to time that it can be taken with safety only at the greater meals of the day, that is to say, at dinner and supper. I cannot look back so long as Mr. Morley, but I can look back a good while, and I can say that I never saw a man who began to take stimulants at eleven o'clock in the day, whose health was not speedily impaired, and who did not come to grief. And next, if alcohol is to be taken it must not only be taken under these conditions, and with these limitations, but it is the duty of every man to himself from time to time to stop alcohol and have what I should call an alcoholic fast, and see how he is from time to time without it as against how he feels with it. And now I shall not occupy your time longer, but before I sit down I wish you to understand that though I may not have taken the extreme view which some of you may wish me to have taken, I have certainly taken the view which after long, patient search seems to me to be the true one at present, and in so far as I have failed to come up to your standard of perfection, I say again that I do hope you will grant me that toleration and charity which every person in my position requires, and has a right to expect. One word in conclusion. I have said at present. The human race is undergoing a change. The intensity and exigencies of modern life, the advances which civilisation is making, are all bearing upon the nervous system, and in 100 years there will undoubtedly be a great change come over mankind. And although you and I are probably just a little too near it to see it quite as well as we might otherwise do, if we
were to look back upon it from that
distance of time, still a great change
is going on in the human race at this
time, and one of the leading mani-
festations of that change is a growing
intolerance of alcohol on the part of
the human race. You do not see
people now-a-days drinking their two
bottles of port at a sitting. “But
oh,” you may say, “that is owing to
Mr. Morley, and all those who have
been so long at work, on this tem-
perance question.” Now I do not
want to minimise their work in any
sense; far from it. I value it as one
of the greatest blessings conferred on
mankind, but I think often it is less
from virtue than from necessity that
men do not drink so much now. A
man cannot now-a-days drink two
bottles of wine if he would. I am
afraid there are many who would be
quite ready to enjoy their two bottles
of port if they could, but they cannot.
Sir Thomas Watson, the Nestor of
our profession, has expressed the same
opinion to me; that it seems certain
that the advance of civilisation is
entailing a loss and a growing loss
of the toleration of alcohol. I have
only spoken of the present, but it may
happen that the next generation that
has to speak on this subject, may
have to show that the race has under-
gone so great a change that it is
scarcely to be compared with this
one, from what I may call the physical
standpoint.

ACTION OF ALCOHOL ON THE HUMAN BODY.*

By W. Valentine Bird, M.D., M.R.C.P. Lond., &c.

The reason, I suppose, why medical
men are so frequently asked to speak
at meetings of this kind is that a very
great deal of prejudice, misconception,
and ignorance prevails as to the
nature and properties of this chemi-
cal body alcohol, and because it has
unfortunately obtained a widely-spread
reputation for being that which it is
not, doing that which it never did and
never can do, and not doing that which
it is daily doing, in the way of destruc-
tion, for the children of men. Now,
there are three things which it is
notably believed to be, but is not—
3. A preventer of infection. And so
closely indeed does alcohol resemble
substances possessing such properties,
that men have been greatly puzzled,
and up to the present time hold some-
what different opinions as to what
constitutes use and abuse in the

* From an Address delivered to the
Members of the Church of England Tem-
perance Society (St. Bartholomew’s Branch,
Sydenham), October 3, 1881.
property it possesses of attracting to itself, and creating a craving, almost amounting to a necessity, for its own administration, especially in those persons possessing a weak heart or nervous temperament.

From want of thought and correct information, many persons have been unconsciously guilty of great cruelty, and have done serious mischief where they only intended to do good and act kindly.

Numbers of young people, and especially nursing mothers, have been led into habits of excess from being urged and tempted to take wine and stout for the purpose of nourishment. The diet most suitable for a nursing mother or wet nurse is milk, and this truth cannot be too generally made known or insisted upon. Very many infants suffer and perish annually from errors in diet on the part of their unsuspecting mothers. And even when the helpless child escapes bodily damage, a too-stimulating diet on the part of the parent may prejudicially affect its nervous system and moral instincts.

You may, however, not unnaturally say, If alcohol be not a food, then what on earth is it? Well, it is a poison, a medicine, and a spur. I shall take the last quality first. Now we all know that if a horse be weary with travelling it is quite possible, by means of a whip or spur, to quicken for a time his pace, and prolong his efforts; but surely to torture a poor creature in such a condition would be most cruel and inexcusable. The best and kindest thing to do under such circumstances would be to give food and allow him rest. And that which common sense and experience teaches us as being proper for a jaded horse is equally so for jaded men and women. But too frequently, instead of resorting to the more sensible remedies, we apply the spur, and whip up the heart’s flagging action by means of spirit, wine, or beer. Alcohol has, however, valuable medicinal qualities, and is undoubtedly useful as an article of diet for the invalid. It is, however, a remedy and form of diet that may have to be carefully watched on account of the properties to which I have previously alluded. In cases of debility or brain-fag, a person may take a glass of wine with an immediate sense of relief and improvement, but the effect being but transient he is induced to repeat the remedy. After a time, in order to produce the same sense of benefit, the dose has to be increased or more frequently repeated, and so too frequently the custom is established of leaning upon a reed which may break and pierce the hand. It is for this reason that medical men are discussing the question concerning the nature and properties of alcohol so anxiously, for human life and human happiness are sacred things, and whatever tends to shorten or destroy either is worthy of serious thought, and should be looked at in a calm and earnest manner.

It is to be much feared that the too general use of alcohol as an article of diet has led to its consumption in such destructive quantities, that it is estimated that at least forty thousand persons are destroyed annually, directly or indirectly, by excess in the matter of what they drink. This being so, you will not unnaturally be surprised to find that so little has been done in the past to check the growing evil, and that the Church and the world are now only just waking up to a just sense of responsibility concerning it. But alcohol is not only a medicine, but a poison, and one of which even young children are apt to get too fond; and, so far as I know, it is the only remedy for which the poor patient will pawn the clothes off his back to procure, even when wife and children are starving at home.

The next thing which alcohol is commonly believed to do, but does not, is to generate animal heat. How often have we heard it said, “Oh, you must take something before you go to keep out the cold.” Yet travellers in the Arctic regions tell us that alcohol never does this; indeed, they have found that those who take it suffer most from frost-bite, and that those who trust to coffee and fatty food suffer least, and often not at all. But, so far from spirit being a generator of heat, strange to say, it is one of the remedies on which medical men rely
for its reduction in cases of extremely high temperature, as in fever. It is true that spirit produces a temporary sensation of warmth, but this is due to its driving the heat from within to the surface, and so into the surrounding air, thus cooling the body and not warming it.

My coachman, who has been an abstainer for some years, passed through the late severe winter without once taking cold, although regularly on the box for four or five hours at a stretch, whilst some of his friends who tried taking spirit before starting suffered severely. It is important that working people should know that spirit is not only unnecessary, but powerless to keep out the cold. Again, spirit it is generally believed prevents infection, and doctors and nurses are often pressed to take it for that purpose. Under the idea that it does so the poor often make great sacrifices to procure it, and get into difficulties sometimes in consequence. Food, rest, and the avoidance of fatigue, are essential for those in attendance upon cases of infection.

When a young man, I was appointed during two severe epidemics as Cholera Medical Officer, and my duty was to visit for several hours daily poor persons struck down by that terrible disease. Neither my colleagues nor I ever took spirit for the purpose of protection.

Two or three relieving officers who died did, I was informed, take brandy for that purpose. What I wish to imply is, not that the brandy caused their death in any way, but simply that it did not prevent their taking the disease. When persons believe themselves to be protected, they sometimes are less cautious, and expose themselves unnecessarily. The notion that alcohol in any way affords protection against infection is a fallacy. But alcohol, as I have endeavoured to show, is not only useless as food, somewhat dangerous as diet, and neither a generator of heat, nor apreventer of infection, but it also acts injuriously on the brain in a way peculiar to itself. So much so, that under its influence the moral sense becomes perverted and blunted—hence, after taking it, the purely-minded, the truthful, the honest, and the kindly-disposed may, and alas, often do, become the opposite.

This is well understood amongst the very poor of our large towns. I once saw a poor hospital patient who had been most severely beaten by her husband. Upon my involuntarily exclaiming, “What a brute the man must be!” the poor creature said, “No, doctor; he really is not, and, indeed, after all, it was not he, but the drink in him which ill used me.”

And now, I want to say a word upon the way in which alcohol acts upon the blood; but before doing so must make a slight allusion to the curious interchange of gases through animal membranes. If a bladder be filled with light gas, and tightly closed, it will, after a time, be found that part of it has escaped, and its place been taken by a portion of the surrounding atmosphere. Or if a bladder, filled with water slightly acidulated with carbonic acid, be tightly closed, and placed under a bell containing hydrogen, oxygen, or nitrogen, part of the carbonic acid will leave the water, and be found in the bell, while a part of the surrounding gas will enter the bladder and be dissolved in the water. Now, blood, as no doubt most of you are aware, is composed of a multiplicity of microscopical bladders, called corpuscles, which, in health, run in single file through the exceedingly small, hollow, hair-like vessels, called capillaries. They are flattened discs, somewhat resembling in shape our ordinary coins, and are composed of a very fine albuminoid membrane, containing fluid; some are colourless, but the greater portion of them are red, from the iron they contain. Without dwelling long upon the subject of these most interesting little corpuscles, I must just tell you how they act in ordinary health, as the function they perform is closely connected with the subject we are now considering.

Their office, then, consists in carrying oxygen from the air we breathe to the various parts of the body, and con-
Alcohol in Therapeutics.

By Lewis D. Mason, M.D., Fort Hamilton, N.Y.

In a course of addresses on "Abstinence," delivered before the Hunterian Society of London, in 1878, Dr. Benjamin W. Richardson uses these words in referring to the difficulties that surround the use of alcohol in general medical practice: "But prescribe it as a medicine; do not permit its use as a beverage. Prescribe it as alcohol from the dispensary. Learn the exact quantity that is required to produce the desired effect, and then you will discover, and in no other way, whether the good attributed to the grog is due to the alcohol it contains, or to some other agency." This is the scientific,
Alcohol in Therapeutics.

and, as I think, the common-sense mode of procedure.

Dr. Richardson prefers the methylic or lighter spirit to the ethyllic, and finds that it gives better results than the latter. He suggests that physicians, in many instances, might follow his practice with advantage. The advantages of the methyllic alcohol are, in his opinion, its more rapid action and a much less prolonged effect than is the case with common alcohol, so that it produces its effect promptly, and, what is of most importance, it demands the least possible ultimate expenditure of animal force for its elimination from the body.

Dr. Richardson sounded the keynote when he advocated the use of alcohol in medical practice in lieu of wine, beer, whisky, and other liquors containing alcohol. Within the past two years the medical officers of the Inebriates’ Home at Fort Hamilton, N.Y., have recognized the value of Dr. Richardson’s suggestions, and adopted them in the treatment of the various forms of alcoholism, when the use of alcohol was indicated, and have found the following benefits to proceed from their adoption:

1st.—The satisfaction of having a solution containing a definite percentage of alcohol, thus providing an exact system of dosage.

2nd.—A very marked saving, and, therefore a method of value from an economical point alone, especially in those institutions where the liquor bill is a large item of expense.

3rd.—The moral effect on the patient, in compelling him to at once break off his accustomed stimulant, and providing a “medicine” as an efficient substitute.

4th.—The advantage which the alcohol has over brandy, whisky, &c., is that, owing to accuracy and concentration of the dosage, the patient convalesces in one-half the time and with less suffering.

In the annual report for 1880 of the Asylum for the Insane, London, Canada, Dr. Bucke, superintendent, says: “No beer, wine, whisky, or brandy has been used in this asylum during the last twelve months. In place of these, in certain cases of illness where alcohol appeared to be indicated, we have given this in its pure form—mixed, of course, with water, as other medicines are. In this way we have consumed, in the course of the year, four gallons, six pints, and fifteen ounces of alcohol, equal to about nine gallons of whisky, or one gallon of whisky to every one hundred patients under treatment, as against (in former years) three hundred dollars’ worth of beer, wine, and whisky to every one hundred patients treated.”

Another advantage which this method of prescribing alcohol possesses is the lesson which the community will receive, in a quiet way, that the proper place for alcohol in any of its forms or combinations is the shelf of the pharmacist.

Moreover, in a properly compounded prescription containing alcohol, the physician will have a much greater control of the future physical and moral welfare of his patient, than if he directed him simply to take alcohol as contained in one of the various forms of liquor in common use.

It may be added that Dr. Norman Kerr and other London physicians of eminence have indorsed and adopted the plan of Richardson, and the quotation from the report of the asylum in Canada shows that the method is being adopted in other institutions besides the Inebriates’ Home at Fort Hamilton.

We may further note that it is necessary the alcohol should be disguised by the addition of the various carminatives or bitter tonics, and also coloured by caramel, so that the patient may not be unnecessarily informed as to what he is taking.

We use what we term our “absolute mixture” in treating patients, as a rule, and without their knowledge as to the fact that they are taking alcohol.

We further find that the 95 per cent. alcohol is equally as efficient as the absolute, which we formerly used, and which was more expensive. — New York Medical Record, 10th December, 1881.
Proceedings of the
British Medical Temperance Association.

President,
B. W. Richardson, M.A., M.D., LL.D., F.R.S., F.R.C.P.

Honorary Secretary,
Dr. J. J. Ridge, Carlton House, Enfield, Middlesex.

Registered or registerable medical practitioners are admitted as members on condition of personal abstinence from all intoxicating liquors as beverages, and payment of an annual subscription of not less than five shillings. Registered medical students who are total abstainers are admitted as Associates on payment of an annual subscription of half-a-crown.

NOTICES.

Members and Associates receive the Medical Temperance Journal free by post.
Members changing their residences are particularly requested to be kind enough to send their new addresses to the Honorary Secretary.
The Annual General Meeting of the Association will be held in London at the end of May. Due notice will be sent.

NEW MEMBERS.
Dr. Bayley, Kingston Hill.
Dr. Cox, Annan.

M. J. De Brent, Esq., Romford.
Dr. Moffatt, Motherwell.
Dr. Scougal, New Mill, Huddersfield.

NEW ASSOCIATES.
C. B. Miller, Esq., St. Bartholomew's Hospital.
C. D. Stewart, Esq., University of Edinburgh.

Enfield, March, 1882.

J. J. Ridge, M.D., Hon. Sec.

THE SPRING QUARTERLY MEETING.

At the quarterly meeting of the Association held in the rooms of the Medical Society of London on Tuesday, 14th February, Dr. Norman Kerr exhibited and described eight varieties of unintoxicating wine prescribed by him medicinally, and recommended as social beverages. These were all genuine wines, the pure juice of their respective grapes. Among the best were Riessling (German), Madeira (Madeira), Lachrymae Christi (Italian), Bordeaux (French), Muscat (French), and Alto Douro (Oporto). The importer, Mr. F. Wright, Kensington, also had produced an unfermented port with bark, which was an elegant, agreeable, and useful tonic wine. Dr. Kerr's paper introducing these beverages was as follows:—

RECENTLY-IMPORTED UNINToxicATING WINES.
The ripe fruit of the vine possesses cooling, refrigerant, blood-depurant properties. The unfermented juice of
the grape is rich in sugar, contains other nutritive constituents, and acts as a gentle diuretic and aperient. So excellent a therapeutic agent is the ripe grape, that in Switzerland and other Continental regions the grape cure (cure de raisins of France) has achieved an acknowledged reputation. From early times to the days of Cullen and Pereira, the virtues of the grape have been highly extolled by the medical faculty.

In fermented intoxicating wines the most valuable properties of the grape are either absent altogether, or present in greatly diminished quantity, alcohol and other new products being formed at the expense of the saccharine, albuminous, and other useful components of the unfermented juice.

Alcohol is an irritant narcotic poison, and is contra-indicated in many inflammatory conditions, where the cooling, refreshing, purifying, and nutritious qualities of the unfermented grape-juice are markedly beneficial. Hence we find that, in addition to the fresh grapes, dried grapes, or raisins, and the unfermented juice, have been a favourite prescription in ancient as well as modern times. Dodoens ("Herbal," p. 651, Lond., 1578) speaks of the "dryed raysens" "as good for cough and all diseases of the lungs, kidney, and bladder." Louis Cornato had his strength renewed at the beginning of every vintage by new wine. Caesar Frederich in the sixteenth century (Kerr's Collect. vii. 142; Hakluyt II. 339-375) relates how a friend of his was ordered in Cochin to drink new unintoxicating wine night and morning.

Dr. Russell, in his "Natural History of Aleppo," says that the juice of ripe grapes inspissated was largely used in the treatment of febrile inflammatory diseases.

For the last twenty-one years I have been in the habit of prescribing the unfermented wine manufactured by Mr. Frank Wright, at Kensington. This, which is a natural, red, unintoxicating wine, prepared from grapes imported from the Continent, I have found of considerable value, taken either alone, with iced water, or with apollinaris or other aerated water, in fever or in phthisis (consumption), with hæmoptysis (blood-spitting). In hæmorrhage (losses of blood) generally, when alcohol is contra-indicated, this wine is especially useful. In one severe case of small-pox, where recovery was despaired of, the patient, a woman aged twenty-eight, could swallow nothing for nearly eight days but a half-and-half of this unfermented wine-and-water.

But the taste of invalids, as of the healthy, is capricious, and I have long endeavoured to persuade some enterprising Englishman to supply a variety of unintoxicating wines as articles of medicine and of diet. At length Mr. Wright has, at my suggestion, imported from abroad several unintoxicating wines, which he now offers along with the wine he has himself been manufacturing for the last quarter of a century.

These newly-offered wines are—RIESSLING, Muscat, Lachryma Christi, Alto Douro, Madeira, Congress, and Bordeaux.

RIESSLING (German; from the celebrated Riesling grape, the characteristic grape of the Rheingau. The berry is yellow and small, with a hardy skin, and is found in small bunches. To this grape Durkheim and other localities in the Palatinate are indebted for their fame as favourite resorts for the practice of the "grape cure").—A pale yellow, thin, delicate bouquetted wine. Dry,* with slightly acid taste. There are two qualities of the Riesling.—A, very fine; B, similar in essential qualities, but not quite equal to A in bouquet.

MUSCAT (French; from the "Muscat" grape of the Pyrénées Orientales).—A pale pink, full-bodied, very sweet.

* "Dry" is not used here in the same sense as when describing intoxicating wines. Dry fermented wines are generally understood to be wines from which the sugar has more or less disappeared by fermentation. The dryness I have remarked in some unfermented wines has reference only to the taste, and arises, probably, from the combination of tannin with acid in the original juice.
luscious wine, with the distinctive flavour and bouquet of the Muscat grape, well marked.

\textbf{Lachrymæ Christi} (Italian; from the celebrated grape of that name grown at the base of Mount Vesuvius).—A thin, fine wine, with a characteristic flavour which is both nutty and fruity, and a sweet sub-acid taste.

\textbf{Alto Douro} (from the grape which yields the best genuine fermented port wine).—A fine sweet wine, with a delicate nutty flavour, and of a light red colour.

\textbf{Bordeaux} (Bordeaux).—A dark red-coloured wine with considerable body. Has a fruity aroma, and is pleasantly acid to the taste.

\textbf{Madeira} (Madeira).—A rich red-coloured wine, with medium body, and a delicate, peculiar, but agreeable flavour.

\textbf{Congress} (American; when fermented has a large Transatlantic sale as “American port”).—Is a deep purple, very dry wine, with tolerable body, and with a rough, astringent, fruity flavour.

These wines have considerable dietetic and hygienic merit. While valuable medicinal remedies, they are wholesome and acceptable social beverages, when taken moderately by those with whom they agree. With eight varieties of genuine, pure, unintoxicating wine, there should be little difficulty in suiting almost any palate. It seems to me a favourable omen for the future sobriety of our country, that the wine-cellar can now be stocked with a varied assortment of good, sound, unintoxicating wines.

\textbf{Unfermented Port with Bark}.—For the special benefit of invalids, Mr. Wright has prepared a medicated wine, which will, I think, meet with much favour. All the active properties of the best Calisaya bark are imparted to his Alto Douro wine, the dose being half a wine-glassful. This is an elegant, agreeable, and useful tonic. It may appropriately be called “Invalid Unfermented Port.”

\textbf{Dr. Richardson}, the President of the Association, who occupied the chair, said: I think Mr. Wright is rendering an important service to the country. When Dr. Kerr read his lecture before the Homiletical Society at St. Paul’s, Mr. Wright was there and was good enough to give me a dozen specimens of his wine. I wished to try them for social purposes. We put them on our table, and all who partook of them were extremely pleased, and considered that now a difficulty was met which had not been met before, and I should not in the least degree hesitate to give a dinner to any class of people, even the most refined, with these wines on the table, which are perfectly harmless in themselves and withal nutritious. They are exceedingly grateful to the palate, and I think that with their introduction we might fairly consider the social difficulty very largely solved. The only question is whether the supply can be maintained. I have a friend most largely interested in the wine trade, and he tells me that in his vineyards there is a quantity of fluid thrown away as it were. After the grapes have been expressed, the people in the vineyard throw over the grape husk water, and, as there is a good deal of albuminous matter left, it is thrown away. Sometimes the people drink it, and then talk of it as a “flesh” wine, comparing it to egg. The greater portion of it is thrown away, is decomposed, and passes into a sort of manure. He has been good enough to send over to me a barrel as waste product, and I now have it, and hope to have an opportunity of examining it by-and-by. It has passed the Custom House without being challenged in any way, and in his opinion it is absolutely free from alcohol. If desirable, he would be glad to import any quantity of it, and, like these wines, it might be exceedingly useful, both as an article of diet and as a delicacy. When we see the wine trade aiming to produce a drink that is non-alcoholic, we see an important move in the right direction. If we can divert its great resources into our service, we have done an essential service for temperance. The heads of a large brewing establishment are at this time thinking over this matter, and
experimenting to produce a non-alcoholic beer, and if that is brought into play, there again we do an enormous service for temperance. We are at great variance with the producers of wines and beers on the ground that we destroy their trade. There are some of our friends who look at that matter as not to be considered at all; but I have never felt that that was quite just as regards a great commercial pursuit, but that there should be some way suggested by which the difficulty can be met. We can say to the producers, "We don't want to interfere with your legitimate trade, only produce that which is harmless, nutritious, and useful."

Dr. STEWART (Clifton) proposed a vote of thanks to Dr. Kerr, and said that to a great extent the paper had relieved him from a difficulty, because he always felt hesitation in standing out against the juice of the grape. He hoped the Chairman would give them shortly the benefit of his experiments with the fluid sent him by his friend.

The motion was carried unanimously.

ALCOHOLIC EXPERIMENTS.

Dr. J. J. RIDGE then described certain experiments which he had been making on the action of alcohol on some functions of the nervous system, and exhibited the apparatus with which they had been performed. Three members volunteered to allow themselves to be subjected to the experiments, and these were proceeded with; but it was at length discovered that the dials employed to exhibit the condition of the senses of touch and weight had been injured so as to register incorrectly. The results, therefore, of the experiment on vision were alone trustworthy, and these are given in the table accompanying the paper by Dr. Ridge on another page.

PRESENTATION TO MR. ROBERT RAE.

The President said that when Mr. Rae returned from America there was a meeting at Exeter Hall to receive him, but unfortunately he could not be present, as he was lecturing that night at Winchester for Canon Ernest Wilberforce. Dr. Ridge, however, took his place, and drew up and read the address, which so well expressed the feelings towards Mr. Rae of the Medical Temperance Association, on whose behalf it was presented. In order to keep those sentiments fresh in his mind the words had been most admirably engraved by Mr. Oppenheim, who had bestowed the love of an artist upon them, and produced a most excellent work. It was now his pleasure in the name of the Association to ask Mr. Rae to accept it.

"To Robert Rae, Esq., Secretary to the National Temperance League.

"Dear Sir,—With feelings of very great pleasure we welcome you, in the name of the Council of the British Medical Temperance Association, on your return to the shores of old England.

"We do this all the more heartily and appropriately because you have always taken such a deep interest in the medical aspect of the great temperance reform, and because, by your intelligent efforts, the medical profession has been largely influenced in favour of total abstinence.

"It was at your initiative that the important Medical Declaration of 1871 was set on foot, and chiefly through your tact and perseverance that it was carried to a successful issue. From that time we may date a new departure in the medical treatment of the question, by which it received a mighty impetus.

"The very useful and encouraging series of breakfast meetings given annually to the members of the British Medical Association bear testimony to your untiring efforts and organising skill.

"By your energy those great meetings held in the large hall above, and addressed by medical men, were carried to a successful issue, and exercised a marked convincing, converting, and confirming influence.

"To you we are indebted for the establishment and able conduct of the valued Medical Temperance Journal; and, lastly, our Association itself is
under a deep debt of gratitude to you
for your kind co-operation from the
period of its origin to the present
time.
"There are good works that are
evident," and such are your labours in
the temperance cause. We rejoice to
see you again among us, refreshed in
body and mind, and trust that you
may be spared to see more abundantly
the certain fruit of all your efforts to
dispel the pernicious ignorance re-
specting the action and tendency of
alcohol still so prevalent among all
classes of society.
(Signed)
"Benjamin Ward Richardson,
M.D., LL.D., F.R.S., President.
"John James Ridge,
M.D., B.S., B.A., B.Sc.Lond.,
Hon. Sec.
"Lower Room, Exeter Hall,
20th October, 1881."

Mr. Rae, in accepting the address,
said: Dr. Richardson, I feel exceed-
ingly obliged to you and the other
members of the Association for this
testimonial, which is very elegant,
and seems to me very important as
representing the great medical tem-
perance movement. Perhaps you
will be surprised if I say that this is
the first time that I have ever been
placed in the position I am now occu-
pying to receive such an acknowledg-
ment of my humble services in the
temperance cause, so that I value it
all the more, seeing that the position
is, wholly novel. I value it especially as
coming from the Medical Temperance
Association, for there is no class of
public men with whom my co-opera-
tion has been more cordial and har-
momuous than with the medical profes-
sion. The position in which I have been
placed has brought me in connection
with a great many classes of
temperance reformers, but there is no
feature in my public work which has
been in all respects so satisfactory as
my intercourse with the profession
represented by this Association.
Reference is made in the address to the
Medical Declaration of 1871. That
brought me in contact with one of the
finest men that ever lived—Dr.
Parkes. I had the pleasure of seeing
him several times while the Declara-
tion was being prepared, and I shall
never forget the kindness with which he
entered into everything in connection
with it. I have brought with me the
original draft of the Declaration in
Dr. Parkes' own handwriting, which
I shall be glad to show anyone who
wishes to see it. I have also the
original copy of the Declaration itself,
and the first thirty signatures at-
tached. I remember very well when
I had to call upon those leading men,
and ask their consideration of the
Declaration, the peculiarities of the
reception I got. As a general rule
those upon whom I called were ex-
ceedingly courteous and sympathetic;
but there were a few exceptions, and
those exceptions were in the cases of
persons from whom one scarcely
expected a discourteous reception.
One gentleman, occupying an emi-
inent position, without saying a word,
showed me to the door, and yet I
am told he was the very perfection of
courtesy under ordinary circumstances.
Another gentleman, when I intro-
duced the matter by saying that the
Declaration had been signed by the
President of the Royal College of
Physicians, without knowing what it
was about, said, "I never sign things
because other people have signed
them," and in great rage he allowed
me to go away from his house. An-
other eminent disciple of Dr. Todd
went into a long argument about med-
ical men having only to cure their
patients, and the desirability of their
not meddling with moral and social
questions. I had an interesting in-
terview with Dr. Bence Jones, and
thought I had obtained the greatest
victory of the whole when I persuaded
him to affix his signature, for he be-
gan the conversation with quite an
opposite intention. Some present will
remember the extraordinary interest
which that Declaration excited, un-
equalled by anything of the kind that
I remember in temperance history
before or since. It was published in
the Times on January 1, 1872, as an
advertisement, and it led to a long
correspondence. In acknowledging
the great kindness of the profession, I have particularly to mention that of Dr. Richardson, whose friendship during the last seven or eight years has been to me a source of very great pleasure indeed. I am certain there is nothing in my temperance career upon which I look back with greater pleasure than the fact that I became acquainted with Dr. Richardson a few years ago, and had some little to do with bringing him out upon this great temperance question. If the Medical Declaration may be regarded as one token of a new departure in the tem-

perance movement, the delivery and publication by Dr. Richardson of the Cantor Lectures was another most important epoch in our history. I shall never cease to feel thankful to Dr. Richardson for the great amount of time and attention he has given to this work. It is one of the most precious rewards of a lengthened official career that he and a few others are taking up this question so thoroughly, and pushing it forward, as I hope, to a complete success.

The proceedings then closed.

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Notes and Extracts.

MEDICAL MEN AND INTEMPERANCE.

— An “Old Correspondent” of the Lancet says: “Medical men are aware of the degrading habit of drunkenness. Do they endeavour by word or deed to make their power felt in Parliament on the restriction of this vice? Let it be granted that many cultivate habits of temperance as an example to others, what is the proportion of cases they allow to drift, by adopting a permissive principle, instead of strenuously opposing indulgence in alcoholics as a malum in se?”

The Dalrymple Home.—The proposed Dalrymple Home for Inebriates has just been registered under the Friendly Society Provisions of the Limited Liability Act. The object of this is to limit the liability of the committee, and thus secure against personal responsibility. The gentlemen subscribing the articles of association are Dr. Alfred Carpenter, J.P., Dr. Cameron, M.P., the Rev. Canon Duckworth, D.D., Dr. Norman Kerr, Dr. Hart Viven, Mr. E. A. Govett, Mr. C. Burton, Mr. H. Harben, and Mr. W. S. Gard. The promoters are now at work looking out for a suitable house and grounds in the vicinity of London.

The hon. sec. is Dr. Norman Kerr, 42, Grove Road, Regent’s Park, London, N.W.

INCREASED LONGEVITY IN THE SOCIETY OF FRIENDS.—In a letter to the British Friend, Mr. Isaac Pickard, of Harrogate, says:—“I recently looked through the ‘Annual Monitor’ tables for the last twenty years, and, omitting months and days from these tables, and grouping them in five-year periods, they show as follows: For the years 1876 to 1881, an average life of 57½ years; for 1871 to 1876, of 54 years; for 1866 to 1871, of 52½ years; for 1861 to 1866, of 50½ years; or an increase in the first five years over the last of these five years of 7½ years. Can any of my readers account for this steady and great increase of longevity on any other grounds than its being the outcome of a similar growth among the Society of Friends of the habit of total abstinence from strong drinks? There must be some very important factor or factors at work in bringing about such a result; and, in endeavouring to think them out, I seem driven to the conclusion that there are none at all comparable to this one of abstinence from alcohol.”
THE

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Original Contributions.

DRINKING IN THE BRITISH ARMY.

By CHARLES R. FRANCIS, M.B., Bengal Medical Service, Retired.

Drunkenness is admitted to be the curse of the English Army, as it is of the English nation. How much the army is demoralised and rendered inefficient by drink those only who have served with it can adequately tell. As a fair proportion of my Indian service has been passed in medical charge of European troops; at one time with recruits on the long sea voyage round the Cape of Good Hope to Calcutta; at another with "invalided" and "time expired" men back to England; now as staff assistant-surgeon at the old East India Company's depot for all arms at Warley; now in medical charge of a brigade of artillery; and, finally, as surgeon to the 104th (2nd Bengal Fusileers), to say nothing of detachments on the line of march, in cantonments, and in camp,—I have naturally seen much of the working of this curse. Officers of every grade, commissioned and non-commissioned, deplore its existence; and yet it is in the army itself that the soldier too often learns to drink. From the moment that he is invited, or, it may be, cajoled, into it by the recruiting sergeant, who causes him to ratify his promised allegiance with a coin of the realm* in a public-house, to his final withdrawal from active service when he takes a parting glass with his late comrades, the lesson is never lost sight of; and, so thoroughly has the soldier's army experience taught him the remunerative value of intoxicating liquor, that, should he have no trade to fall back upon and the necessary capital be available, he would, in many cases, be well content to pass his retirement as proprietor of a "public."

* This practice has lately been abolished.
I once went from Warley to India in medical charge of some 400 recruits, sappers and miners, artillery, cavalry, and infantry; and, during the voyage, ascertained by personal inquiry what, at that time, somewhat surprised me; that, so far from drink having in most cases led to the men’s enlistment, this cause was quite exceptional amongst them. The fact is, indeed, now pretty well known. Family feuds, in which an unsympathising and aggressive step-mother, or irrepressible mother-in-law, figured as a prominent agent; the dare-devilism* of youth; impecuniosity; troubles connected with the fair sex; a desire to escape the consequences of crime or other minor offences; disgraced gentility; these were among the principal motives to enlistment. But drink, directly or indirectly, was exceedingly uncommon. There were certainly not more than half-a-dozen who, having either injured their prospects or fallen into idle habits through drink, had gone into the army as a refuge for the destitute. Though foreign to the subject of this paper, it is yet noteworthy that in no single case had martial ardour induced the adoption of a military career. This sentiment will operate with officers, but not with the men. Taking, however, the recruits as a whole, they were as healthy and as soberly disposed a body of young men as one would wish to see entering Her Majesty’s service. When I say that a soldier learns to drink in the army, I mean that, acting upon the supposition that a moderate amount of malt liquor is good for a man in India, as elsewhere, the authorities provide him with it from first to last—withal the man has to pay for it, as also for the rum which he may take too if he likes; and the provision is generally welcome enough! The daily “meet” at the beer cask is looked forward to as a season of hilarity, and relief to the monotony of a dull sea voyage: and the stoppage of his porter for eight days comes to be regarded by the soldier as one of the most disagreeable of board-a-ship punishments. And yet, it may be remarked, en passant, the sailors in some vessels are not supplied with any liquor at all, the work being much better done for the abstinence. And if it be so with the hard-worked sailor, à fortiori the soldier, who is little else than a passenger, should fare still better without intoxicating liquor of any kind. That it did harm in cases where the recipient had not been accustomed to it I myself came to know; and that it revived and kept up the taste in those who had given way before, but who now wished to reform, also came within my experience. It may be Utopian to expect that England’s army

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* Three young clerks from Liverpool (each in the receipt of at least £100 a year), who had employed a part of their holiday in coming to London to see the Great Eastern, dared each other to enlist; and all enlisted.
will ever be composed of total abstainers only! And yet why not? There are over 20,000 in it already—more than 10,000 in England, and a similar number in India: and there are 15,000 in the navy. The inutility of alcohol as a beverage is being taught daily throughout the length and breadth of the land by every conceivable form of advocacy. Rich and powerful armies, whose mission is not war, but peace—to wit, the "Salvation" and "Blue Ribbon" Armies—associations, alliances, and leagues, are yearly enlisting soldiers of temperance and the Cross by thousands and hundreds of thousands. Through their influence the practice of total abstinence is ramifying amongst the masses to an extent that they who are outside the work can only infinitesimally appreciate. The Band of Hope children, who but recently numbered 600,000, will soon be a million strong; these are the germs, under Providence, of future temperance families. And the day may yet come when it shall be as imperative for a recruit to be able to prove, not only that he is physically qualified for the service, but that he is also a total abstainer.

As my object in this paper is to endeavour to show that a soldier may abstain from intoxicating drinks altogether in India as well as at home, and be there, as here, the better without them, I will confine my remarks to the canteen system, and to my own experience, in that country. The limited space at my disposal necessitates brevity. The usual mode of procedure is this. About an hour or so before dinner-time—1 p.m.—the canteen bugle sounds, when each man receives a pint of beer, which, thirsty as he probably is, and pleasantly refreshing as is the liquor to his hand, he usually drinks off at once, thereby blunting his appetite for the coming meal, and injuring, it may be more or less, his stomach or liver, or both, and weakening his nervous system. If he keeps the beer till dinner-time, as many do, its briskness is gone. Commanding officers are always ready to listen to any rational recommendation for the welfare of the men; and, at my suggestion, the mid-day beer for the troops under my medical charge was, latterly, issued nearer to the dinner hour. At 6 p.m. the canteen bugle is again sounded, when the soldier has another pint of beer; and later on, at intervals of half-an-hour, he may draw—one half at a time—two half-drams of rum, the whole dram amounting to three ounces.* Now I venture to affirm that this rum ration is altogether uncalled for. The propriety of withholding it till the evening, and then not

* The regulations allow a man to have two pints of beer and one dram (three ounces) of spirit, or one pint of beer and two drams (six ounces) of spirit in the twenty-four hours. In some canteens the entire allowance of rum is supplied at once.
Drinking in the British Army.

giving too much at once, is generally recognised; but why give it at all? Even the advocates of a daily stimulant of some sort are not in favour of its being taken on an empty stomach, but with a meal. But here the evening beer and rum are given independent of any meal. Tea, the last regular meal of the day, is at 5 p.m., or later, depending upon season; though many men provide themselves with a light supper before turning in for the night. It is not to be supposed that those who are inclined to drink will be content with the daily allowance above mentioned. Such can often obtain a further supply from those who do not care for it. And it is to be feared that the canteen sergeant (who, they say, sometimes—tell it not in Gath—waters the beer, or gives short measure in rum, so as to make his tenure of office as profitable to himself as possible with little fear of detection) will now and again furnish the thirsty victim with an extra quantum. Nor is this all. Through the connivance of a native cook boy, as he is called, country liquor is too readily obtainable from the bazaar, even though the sale of it to soldiers be strictly prohibited. Military authorities are wont to say that it is wise to keep a supply of good liquor at the canteen, so that the soldier need not go elsewhere in search of what is bad. But does experience teach us that the soldier is content with the so-called good liquor? Far from it. It may suffice for the good soldier who knows when he has had enough, but there are many who never acquire this knowledge. A commanding officer once said to me, "I would let the men drink at the canteen *ad libitum.* The weakly ones would soon be weeded out, and the fittest would remain and add to the efficiency of our army." A somewhat truculent mode of elimination, truly!

There is probably no class of Europeans of whom the natives of India are more afraid than our European soldiers; who roam into their villages in search of liquor; become inflamed with it; despising the "nigger," as the majority of them unfortunately do, and not understanding his language, they soon get into a quarrel; make free use of their belts; the village turns out *en masse;* blood is shed; and life itself is not unfrequently lost. The English soldier's love of drink is well known to the natives. Liquor, too often "doctored" and drugged, is ever ready for him in cities near cantonments. The adulterated fire-water creates a thirst for more, which is at once supplied. Jezebel with her blandishments is at hand, and the victim of lust and liquor, becoming narcotised and helpless, falls an easy prey into the hands of the Philistines. Robbed of everything, the soldier wearing Her Majesty's uniform is brought back to his barrack, thoroughly demoralised, to be made perhaps a prisoner or an inmate of the hospital or guard-room. The natives never fail to take advantage,
Drinking in the British Army.

when it suits them, of his alcoholic proclivities. General officers on entering a conquered city may find a foe, far more powerful than the one just vanquished, in the shape of intoxicating liquor placed so as to tempt the soldiers to put *themselves hors de combat*. So identified are our countrymen in India with *brandy panee* and *beer shrub,* and so familiar is the sight of an intoxicated *Christian,* be he soldier or sailor, railway or other *employé,* or loafer, that, if a European be represented at all on the native stage, it is with a black bottle in his hand, and inebriated by its contents! Efforts are made to wean the soldier from drink by the establishment of coffee rooms, where he can improve himself morally and intellectually, and enjoy a chat or a game with a comrade, without fear of being poisoned at the same time. Whilst, however, the opportunity for beer and spirit drinking daily presents itself at the appointed hours, the alternative coffee, cocoa, or tea, are not universally available. Where they exist the resulting picture is curiously anomalous. Invitations to drink are given by military authority, on the one hand: "you had better, however, go to the coffee shop," says the same authority, on the other. Here is an illustration of the slavery of custom. Instituted in the days when a working man's strength was supposed, as before premised, to depend upon a prescribed amount of beef, bread, and beer, the canteen, as professing to supply the best of this last article, has always been considered a valuable adjunct to a regiment. The Indian Government has endeavoured to act up to this profession. Care is taken that the beer supply, which is annually imported from England at an enormous cost, shall be good. Thirty years ago a consignment of some 20,000 bottles was condemned by a committee, who nevertheless recommended in a spirit of economy that it should be sold in the bazaar. "Throw it all into the river," ordered Lord Dalhousie, the Governor-General of the day; "if there is to be any poisoning let the fishes be the sufferers."

It was at one time hoped that beer sufficient for the European army's consumption might be brewed annually on the hills; but the demand is far too great; the breweries are too few; and the price is too high. The obstacles to successful brewing in India are not inconsiderable. Unexceptionally good water is essential (witness the estimation in which that of the Trent is held for the manufacture of beers in general), and, even if it exists at all, may have, in the hills, to be conveyed from a distance; and heavy rain injures the hops, which must, therefore, be imported from home. Moreover, hill beer—the October brew somewhat resembles the

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* Brandy and water and bottled beer.
† It is no uncommon thing to hear a native say of another native, who has taken to drinking and smoking, "He has become a Christian."
best Edinburgh ale in strength and flavour—is a shade too strong for the plains, especially in the hot season, when fermentation leads to breakage and loss besides. * Whilst Government encourages the consumption of beer † amongst the men of the army it discourages that of rum ;—which, however, is yet offered, and of the best that can be obtained. Bazaar rum ‡ frequently contains a quantity of amylic alcohol (fusil oil) which, as is well known, acts very deleteriously on the nervous system. Even canteen rum is not alway free from it. The time is, I believe, approaching when the rum ration will be altogether withdrawn; though, as Government gains upon it, whilst it loses upon the beer, a consideration of this fact may postpone the withdrawal for a while. § There is an unfounded belief in some quarters—disappearing before the scientific teaching of temperance reformers—that rum is not a bad thing in India if taken in the evening, and in moderate quantities; but I venture to aver—to positively declare—that it is chiefly the rum that does the mischief, insidiously injuring in too many cases—even the modicum allowed—the integrity of the nervous system, and creating that appetite for intoxicating liquor which must ultimately ruin the soldier’s constitution, and lead to his being permanently disqualified for military service, if, indeed, he be not cut off before he has reached the full development of his first manhood. A stimulant of this kind can only be regarded as a luxury, upon the same principle that some superintendents of asylums for the insane provide the inmates (many of whom, by the way, have got there through drink) with a daily allowance of beer or porter, so as not to make their confinement too irksome! If a stimulant be necessary, let it be given under medical authority from the hospital. But, be it always remembered, a soldier’s is, or ought to be, a picked life.

* I am here speaking from my own experience of the beer which was brewed thirty years ago. Improvements in the manufacture may have been made since that time. But, under the most favourable circumstances, the hills could never meet the demand for beer for the troops, who are, however, happily learning to do without it.

† There is considerable variety in canteen arrangements throughout the army in India—depending on commanding officers. In some canteens there is no rum ration, but what is termed the “open canteen” system is in force. The soldier may have as much malt liquor as he likes to pay for and carry steadily! Medical officers have reported that this system is conducive to intemperance, as seems most probable. Those who advocate it say that youngsters, who are not disposed to drink, may thus escape joining in the ruck at canteen bugle call, which, for fear of being jeered at ,they might feel constrained to do.

‡ In the Madras Presidency arrack is given in place of rum.

§ As, in consequence of the profit on rum, Government supplies the beer at a cheaper rate than it otherwise could, I don’t know that there is very much gain after all.
And for a healthy young man it is universally allowed that alcohol is unnecessary. But, what of India? In a hot debilitating country like that surely a moderate allowance of malt liquor, with an equally moderate amount of a stimulant in the evening, is more likely to do good than harm? Certainly not; and, whatever may be said of hard-living indigo and other planters being, as a body, healthy and long-lived—it is not the alcohol, but their own excellent constitutions, the regularity of their lives, and being much in the open air, that give them this oft-quoted impunity; they do well in spite of the alcohol—I can, without fear of contradiction, unhesitatingly assert from my own personal experience of thirty years that, as a rule, they were the most uniformly free from sickness who took a single glass, or perhaps a trifle more, of beer, and those who took none, during the twenty-four hours. Spirit—as such—they never of course touched. In India, as elsewhere, even many of the so-called moderate drinkers do not bear illness so well as total abstainers; they run down with striking rapidity. And we must not draw our conclusions only from what we see. What of those who have gone down in the struggle? Thanks to the recognition of hygienic laws, to improved treatment, and to the greater facilities afforded for obtaining a change of climate, the European death-rate in India has been, during the past forty years, considerably reduced; but, in days gone by, not only was it much higher, but the average duration of life was very small. Men who drank—one shudders to think of the marvellous quantities of beer consumed during the twenty-four hours—rarely attained their eighth lustrum! In the Calcutta of 100 years ago an undertaker would receive Rs. 20,000 (about £2,000 in those days) for his business and goodwill for the single month of September. On the 1st of October men would meet, and congratulate each other that they were still alive. Other factors—notably malaria—were of course in operation, but drink undoubtedly assisted in diminishing the ability to do battle with the foe. Men do not drink immoderately in India now; and there are officers who, when recommending those under them to abstain altogether, set them the example by abstaining themselves. Look at “Havelock’s Saints,” as they were called in the regiment. A military movement, requiring promptitude and steadiness, is to be executed. Fatigued by previous fighting, and by alcoholic libations, the soldiers generally do not respond to the demand for men so readily as is necessary. Then it is that the advantages of total abstinence are demonstrated. The order is issued, “call out Havelock’s men,” and the company of abstainers, responding to a man, obey at once and execute the manoeuvre. “How well your men are looking,” said relieving Pollock to the beleaguered Sale at Jellalabad. “There’s been no rum,” was the
reply. "The healthy, manly appearance of the young soldiers of the 13th regiment caused great astonishment to some of the relieving column, who had hitherto supposed that a soldier could not exist without his grog."* The cause of this health lay "in a long course of sobriety and labour, . . . which . . . made men of mere boys of recruits, and brought the almost raw levy . . . to the firm standard of the Roman discipline. . . . They had no alcoholic stimulant . . . but worked well without it, like men struggling for their existence, yet with industry, perseverance, cheerfulness, and good humour."† There is scarcely an officer of Indian experience who will not say that what good effects have hitherto been expected from alcohol can be very much better and with greater certainty obtained from coffee, or Liebig's extract (which, though somewhat over-rated as a food, is yet a valuable sustaining stimulant), or even tea. A soldier—I have known men who seemed to think that soldiers, being a hardier race (which is too often far from the truth), could digest like ostriches, and remain impervious to the ordinary ills of life—more perhaps than anyone, requires the mens sana in corpore sano. Especially should his nerves be steady. "It was the whisky," said a platform orator, "that made the murdering ruffians in Ireland shoot at their landlords." "Nay," said one in the crowd, "it was the cause of their missing them"!

It has been proved beyond all possibility of question that the healthy Briton, let him be exposed to what extremes of temperature and climate he may, or whatever hardship he may have to undergo, fared far better without alcoholic drinks than with them. Why then continue them, especially the allowance of rum? The necessity for keeping up so large a force as we do in India involves heavy expense, and Government would, not unnaturally, be slow to listen to any suggestion that might tend to make it greater. As rum pays, whilst beer entails loss, the answer might be, "We can’t afford it. On financial grounds we would rather withdraw the beer." In the present state of our knowledge with regard to alcohol, no Government, however, would venture to say this. We can hardly expect that, just at present, soldiers must be total abstainers. But, at any rate, let the beer—not more than a pint—be given, and that once a day, and at the men’s dinner. I am not sure that lupulin‡ would not be found an excellent substitute for beer. It is free from alcohol, and therefore unintoxicating; and, being free also from sugar, in no way

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* "The Englishman in India," by C. Raikes.
† Havelock’s official report.
‡ Lupulin is, as its name implies, made from the hop. The brewery is in Little Peter Street, Manchester.
Drinking in the British Army.

resembles the temperance drinks of the day, whose sweetness renders them so distasteful to many. The flavour is pleasantly bitter—too bitter perhaps for some; it is effervescent and brisk, and looks like bottled ale. It is, moreover, inexpensive, and with a larger demand might be made still cheaper. Lupulin is now an established drink all over the country, especially amongst the educated classes. I am sure it is a very valuable non-alcoholic beverage.

But I plead for the true welfare of the soldier, whom I have learned to love, when I earnestly urge the total withdrawal of the rum ration in India. What if there be a pecuniary loss upon the discontinuance of its sale? Set against this the increased moral and physical efficiency of the army; the reduced sickness in hospital, and invaliding home; the diminished risk of collision with the natives; the removal of a direct impediment to the success of the missionary, and of a reproach to ourselves as a professedly Christian nation; and surely the gain, from a religious, social, and even in the long run a financial point of view, will immeasurably preponderate over the loss. The fear that men, wedded to their liquor, will get it somehow, need not be entertained if care be taken in the selection of recruits with special reference to their temperance habits, and they be enlisted anywhere rather than in a public house. Employers of labour, recognising the superior value of non-alcoholic beverages for sustaining men at their work, are beginning to seek for total abstainers who relish such beverages; and they find them without difficulty. Why should the army have the drunkards? There are, in the present day, hundreds and thousands of young men who have never tasted intoxicating drinks, or at any rate not for some years. Such would not embrace a military calling the less readily because it afforded no opportunity for drinking; nor would they think it any hardship to be without liquor, provided suitable substitutes were available. The probability is much greater, now when there is so much teetotalism in the air, of men learning to drink at the canteen. Facilis descensus Averni, and the descent in a hot and thirsty country like India is more rapid than in a temperate clime.

In addition to fostering coffee taverns the Government has shown its readiness to remove temptation from the soldier by causing pensions to be paid, on the filling up of certain papers, at the post office where the pensioners reside; thus doing away with their meeting, as was the case under former regulations, on quarter-day at centres for payment where the occasion would be celebrated in the usual convivial manner. This unnecessary opportunity for carousing happily exists no longer. If the Government would go a step further, and abolish the allowance
of alcohol in India, it may rest assured that, provided the canteens were supplied with as good coffee, cocoa, and tea, as are to be found in the best temperance coffee taverns at home, together with cooling drinks suitable to the climate, the absence of rum would never be regretted; whilst another opportunity for keeping up, or acquiring, a taste for drink would be removed. The English army is full, alas! of scamps of every description—rogues who pollute the ranks and give a bad name to that which it should be the pride of every man to wear—the Queen’s uniform. Could steps be taken by which these mauvais sujets need never be admitted—could the public feel that the army was really free from such characters, we should have, instead of the recruits who now enter it, and who desert at the rate of 5,000 a year, a higher class of young men, who would so raise its tone that the private would not, as is too much the case now, be kept at arm’s length by his officer, and to sit next to whom at a public eating-house would be a pleasure instead of, as at present, an annoyance. It is not within the province of this paper to indicate what the several reforms might be, but thus much may be said, that, were greater restrictions imposed upon the means of obtaining liquor; were there a more advanced public opinion amongst officers on the temperance question—(this is gradually coming)—were the army to be what, in truth, are our prisons—a school in which the value of abstinence is taught our soldiers, learning to recognise and shun strong drink as the common enemy of mankind, the “devil in bottle”—would indeed represent a veritable “Blue Ribbon Army,” whose moral and physical development would not be surpassed by that of any army in the world.

THE USE OF ALCOHOL IN LUNATIC ASYLUMS.

Nowhere, perhaps, is medical automatism seen, in certain matters, more commonly than in our lunatic asylums. Routine is the order of the day, investigation is troublesome, and innovation odious. There are honourable exceptions to the rule, of course. There are men who seek to prove all things, only holding fast those which are good. A priori, one would suppose that nowhere would the effects of alcohol on the nervous system, be more carefully watched, than in the places in which the terrible effects of alcohol are so frequently seen. Surely none ought to
be so eloquent in denunciation of drink, as those who witness the deplorable and, too often, irremediable ravages which it commits.

Strange to say, some of the most zealous defenders of the use of alcohol, are found amongst alienist physicians, not as the result of anything like a crucial test, but they have always given alcohol, and intend to go on doing so, not merely as a medicine, but as an article of diet. It is painful to think that educated men, to whom the care of the most deplorably afflicted class in the community is committed for treatment, should be so inconsiderate or perverse, as to administer freely to the unfortunates, that which, in numbers of cases, has been their ruin; keeping up the appetite and endorsing the practice, which it should be the supreme object of treatment to suppress. Again and again has the writer met with cases, where men have drunk themselves into insanity; he has taken care in his certificates, to let it be plainly understood that the cause was alcoholism, yet he has found the appetite for drink has been kept alive, by the direful agent forming a part of the daily diet! The miserable victims, on gaining their liberty, have speedily returned to their old habits, and relapse has been the almost invariable consequence. In one case, the recurrent attack assumed the form of kleptomania; the magistrates, instead of sending back to an asylum, sent him to gaol; there he got no liquor, and therefore got thoroughly sober. The treatment in prison was far more effective than was that which he underwent in the asylum, whilst the cost to the ratepayers was considerably less; for not only was his dietary far less expensive, but he stayed in the prison only three weeks, whilst he remained in the asylum four months.

Happily we find that here and there common sense is beginning to prevail. Water or milk is superseding beer as an article of diet; and, so far as we can discover, where the experiment has been tried the results have been most satisfactory. Dr. Cassidy, the medical superintendent of the Lancaster Asylum, in his last report, says that he "could not pass over unnoticed another change, which he was inclined to call a reform, initiated some two or three years ago, and completed last year—namely, the abolition of beer." He declares that he "never took any step which he afterwards saw less reason to regret, ... every argument seemed to be in favour of it, and he did not see what could with any force be urged against it."

Here is a similar declaration: In the twenty-ninth annual report of the Committee of Visitors of the Joint Lunatic Asylum of Abergavenny, for the counties of Monmouth, Brecon, and Radnor, for the year 1881, Dr. D. M. M'Cullough, the medical superintendent, says:—"In my last annual report I spoke of
the substitution of skim milk for beer at dinner. Continued experience has confirmed my opinion of the advantage of this, while the healthy state of the patients, and the low rate of mortality, afford evidence that the change has at all events not been injurious. A further and final step has just been taken in the same direction by discontinuing the allowance of beer hitherto given to the working patients, at the same time improving their dietary, while a money allowance has been given to the attendants and servants in place of beer. I have great pleasure in stating that these changes, from which I anticipate much benefit, have been made without the slightest difficulty or dissatisfaction."

One of the most important testimonies given in favour of the non-alcoholic treatment of insanity is contained in the report of Dr. R. M. Bucke, medical superintendent of the Asylum for the Insane, London, Canada, for the year ending 30th September, 1881. The establishment contains nearly 1,000 patients, partly male, and partly female. Dr. Bucke says:—"During the year just closed no beer, wine, whisky, or brandy, has been used in this asylum. Something less than five gallons of alcohol (B.P.) have been given as medicine. Not more than a few dozen doses of opium, chloral, or other sedatives, have been given during the same period, and the amount of restraint required and used has been less than ever before in the history of the asylum. I am more than ever convinced that the use of alcohol, so far from taking the place of sedatives and restraint, does, on the contrary, by producing a condition of increased mobility of the great nerve centres, make a larger use of these necessary. In the long run, the use of opium and chloral (unless the patient is kept constantly under their influence) bring about essentially the same condition as does the use of alcohol, so that these also tend to make mechanical restraint necessary, instead of taking its place. All this, I think, is clearly shown and demonstrated in the history of this asylum during the last few years—for, as we have given up the use of alcohol, we have needed and used less opium and chloral; and as we have discontinued the use of alcohol, opium, and chloral, we have needed and used less seclusion and restraint. I have, during the year just closed, carefully watched the effect of the alcohol given, and the progress of cases where in former years it would have been given, and I am morally certain that the alcohol used during the last year did no good."

One of the most plausible arguments in favour of the use of beer in the dietary of the insane is that the alcohol has a soothing and calmative influence over the consumer. Alas, that men should not look lower than the surface, that they should be content with half an induction! We may say of beer, as the wise man said of wine, it is a mocker, and he who is deceived
The Use of Alcohol in Lunatic Asylums.

thereby is not wise. It is a stimulant, but it is also a narcotic; it is a sedative, but it is also an irritant; under its influence men are for a time kindly and cordial, but anon they are tetchy and disputatious. Of course this is not very perceptible where beer is merely used dietetically. Alcoholic liquor of any kind takes less hold on the nervous system when it is consumed with food, more especially when it is taken in small quantities; nevertheless it has been invariably found that women and men are managed far more easily where no liquor is allowed, discipline is better maintained, and work is more satisfactorily performed. This was the emphatic testimony of an attendant on insane patients to the writer in a conversation a few years ago; he stated that he had found he could manage those under him so much more easily by depriving them of the usual allowance of beer, that he felt justified in pouring it down the sink. He was prevented from mentioning the matter to the medical officer, as that gentleman was strongly wedded to the practice of giving beer to patients, and would most likely have prevented what contributed to the patient's welfare and to the ease of the attendant. A most valuable testimony to the advantages resulting from stopping the administration of beer is given in the report of Dr. F. Pritchard Davies, Superintendent of the Kent County Asylum, for 1880. In March, 1878, he first diminished the quantity of beer issued to patients and attendants. The change worked so well that, at the end of 1879, the supply of beer was wholly discontinued. Dr. Pritchard Davies says:—

"Regarding our dietary as sufficient, and being convinced that the actual nourishment of the beer was too small to merit consideration, I did not advise any other substitute than water for the discontinued beer. By most carefully weighing every patient once a month, and keeping accurate records of the results so obtained, I am satisfied of the soundness of my opinion, and do not think that any unprejudiced observer could question the good results which have followed in this asylum the total abolition of beer as an article of diet. The wards are much quieter than they have ever been before; the patients are cheerful without being noisy, and they certainly work better. Their general health has been good, and there is a marked diminution in our death-rate, to which, however, I do not attribute such importance, as it may be explained in other ways. However, for the improved condition of the patients generally, the diminution of violence, destructiveness, and noise, I think the abolition of the issue of beer is mainly to be credited.

"It was thought that by discontinuing beer it would be necessary very largely to increase the issue of wines and spirits. I did not share in this belief, and the result is as I anticipated."
Although in the change made in the Asylum there was no idea of saving money, nevertheless, notwithstanding that the servants were liberally compensated for the loss of their beer allowance, Dr. Davies informs us that there was a saving during last year of nearly £1,400. He believes that the servants are grateful for the change. The Doctor concludes his very admirable account of the experiment tried in the following words:—

"... From careful observation of the effects of alcoholic stimulants upon the patients under my care, as well as from a knowledge of the cause of large numbers of them being here, I became convinced that it was not advisable to continue to supply exciting beverages to them, which, I felt sure, had a tendency to prolong their malady, and, by keeping up a taste for intoxicants in those inclined to over-indulgence in them, directly conduce to a speedy relapse after they were discharged."

It is earnestly to be hoped that the superintendents of other Asylums will give due consideration to the above statement.

The following are the lessons which seem to be taught by the facts now submitted:—

1st. The suppression of beer in Asylum dietetics tends to greater quietude, cheerfulness, and industry among the patients.

2nd. The duties of the attendants are less irksome.

3rd. The stay of many of the patients in the Asylum is shortened.

4th. Abstinence from alcoholic liquors is the most likely remedy for the worst part of the disease from which the patient suffers.

5th. Patients having been habituated to abstinence from beer are not so likely to relapse after leaving the Asylum.

6th. The abolition of beer not only benefits patients and gratifies Asylum officials, but it saves the ratepayers large sums each year.

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**ALCOHOL AND SKIN DISEASE.**

"Seeing is believing" is a common proverb, and without doubt we are all of us more easily influenced by what we can see for ourselves than by what we are obliged to accept on authority. That alcohol produces great alterations in many parts of the body is beyond question. Many of these are palpable enough to
the medical man in the post-mortem room; but many others leave no permanent alteration which can be clearly recognised after death. Even the coarse alterations of the tissues are never seen by the general public. The cirrhotic liver, the granular kidney, the fatty heart, the degenerated arteries, are to them simply names without the definite meaning which sight confers. But, while the interior of the body is, as it were, a foreign and unvisited land, its exterior resembles rather one's native country. The changes which alcohol may produce in the skin are plain and palpable. An intelligent guide may be required to explain that which is seen, but everyone can see for himself who is willing to look. Alcohol has a great effect on the skin, as all know who have observed the flushing and swelling of the surface of the body which it produces. This temporary flushing, frequently repeated, leads to more or less dilatation and congestion of a more permanent nature, especially in the exposed parts of the body, such as the face and those parts in which the blood-vessels endure the greatest strain, namely, the legs, in which the veins are stretched and rendered varicose. Alcohol reduces the tone of the blood-vessels, and hence predisposes to that local congestion of the skin which is the foundation of so many eruptions. In other cases the alcohol acts as the exciting cause, that is, the actual outbreak would have been escaped but for the additional morbid influence of the spirit. In addition, alcohol produces disease of the skin indirectly. It causes dyspepsia of various kinds, which are fertile sources of skin eruptions. It causes congestion, inflammation, and degeneration of the kidneys; hence the blood is imperfectly purified and eruptions appear on the skin. We have no intention, however, of entering fully into this very interesting question. We would call the attention of our readers to the statement of Mr. James Startin, on another page, that 60 per cent. of the cases of skin disease which he has to deal with are due in one way or another to alcohol. His position, both as a consultant and surgeon to St. John's Hospital for Diseases of the Skin, render his experience large and his testimony important. There can be no doubt that the universal abandonment of alcoholic beverages would conduce as much to the health and clearness of the skin among the general population, as among those female prison inmates, who are declared, on unimpeachable authority, so frequently to recover their good looks by the unalcoholic regimen of their enforced retreat.
Miscellaneous Communications.

THE TRANCE STATE IN INEBRIETY—ITS MEDICO-LEGAL RELATIONS.*

By T. D. Crothers, M.D., Supt. of Walnut Lodge, Hartford, Conn., U.S.

In 1879, I read a paper before the American Association for the Cure of Inebriates, at their annual meeting, entitled Cerebral Trance; or, loss of consciousness following inebriety, based on a clinical study of cases. The following are some of the conclusions which were drawn from this study.

1. Loss of memory and consciousness may come on in inebriety, and be accompanied by little or no evidence of the actual state.

2. This condition of the brain arises from complex causes, which require careful study, and particularly when crime is associated with inebriety. If the trance state is present, its medico-legal relations are of the greatest practical importance.

Up to that time no study had been made of this phase of disease associated with inebriety. Then I supposed that this peculiar psychological state was rare, and seldom seen in this disorder; also that it was some obscure form of epilepsy, the result of causes that were more or less accidental, and seldom developed in this way. Later studies in this direction indicate clearly that these cases are very common, and are distinct from epilepsy. This state, noted by a loss of consciousness and memory, without stupor, during which the patient acts and appears rational, and yet is a mere automaton, without memory or realisation of his actual condition, is present more or less in all cases of inebriety.

To test this clinically, I made a special study of sixty-two cases which came under my personal care. Cases of inebriety that were of long standing, representing the middle and better classes of society, and studied as they came, without selection. Of this number, in ten cases the trance state was so prominent as to be recognised by friends, and considered a form of insanity. In twenty-eight cases these blanks of memory had been noted less prominently, and of shorter duration, and were termed drunken fits. In the remaining twenty-four cases these blanks were more or less indistinct, following stupor and intoxication, and only ascertained by a study of the symptoms. All of them gave evidence of acts which were unaccountable to themselves or friends, of which they had no recollection. I propose in this paper to give some of the general conclusions which have been indicated from these and other clinical studies I have made, illustrated by the history of some very prominent cases, whose physiological and medico-legal significance cannot be over estimated. At the beginning it is important to recognise clearly the distinction between alcoholism and inebriety.

The term alcoholism does not correctly describe all the cases which suffer from excessive use of alcohol or its compounds, but denotes merely such cases which come directly from the toxic action of alcohol. Inebriety represents a special disease of the central nervous system not caused by alcohol alone, but due to conditions of nerve degeneration, of which alcohol may be only an exciting cause or symptom of the neurotic condition. As understood at present, inebriety is the disease, and alcoholism is only a group of symptoms noted in the latest stages of the disease. All my studies of these cases are based on the fact that inebriety is a disease, originating in certain definite or complex causes,

* A Paper read before the New York Medico-Legal Society, November 2, 1891.
The Trance State in Inebriety.

and progressing through regular stages of development on to recovery, chronicity, or death. Inebriety is a positive physiological disorder, and not a combination of habit, vice, and sin.

The trance state is only a phase or particular symptom of inebriety, in which certain brain functions are arrested. Unlike some other forms of trance, nervous activity is not particularly concentrated in one direction, but is absolutely cut off in others. The combined action of a defective mental state, with the effects of alcohol, in certain unknown stages, cause not only a suspension of the memory, but of consciousness, a literal paralysis of certain brain functions. It may appear at almost any stage of inebriety, notably in chronic cases, or in those recently attacked. The nature and phenomena of trance in general, have been fully described by my friend Dr. George M. Beard, and many of the vast fields of medico-legal and physiological interest outlined by him. This is the same physiological state coming from certain specific causes. In this special form of trance following inebriety the following facts may be considered, established, and confirmed by clinical studies.

1. The trance state is a common symptom in inebriety, in which the patient is without consciousness and recollection of present events, and gives no general evidence of his real condition. This may last from a few moments to several days.

2. This state is clear evidence of profound disturbance of the higher brain centres, and is of necessity followed by impaired judgment, and lessened responsibility.

3. This trance state will always be found associated with a particular neurotic condition, either induced by alcohol or existing before alcohol was used. In all chronic states of inebriety it will be found present in a greater or less degree. The first fact is supported by the evidence found in the history of every case of inebriety. The second will be clear from the history of the cases which will follow; and the third can also be established from the clinical histories. The cases presented are selected as typical, and also for the purpose of bringing out prominently the symptoms and medico-legal interest growing out of them, I shall confine myself to some of the most general clinical facts, without entering into any discussions of the pathology or nature of this state. The plan I have followed is to give, first, cases in which the mind acted along certain accustomed lines of thought and action in the trance condition; second, cases in which the mind displays unusual ranges of thought and action, referable to varied mental conditions; and third, cases in which the criminal impulse was prominent.

Case I.

Trance following inebriety—automatic recovery.

A railroad conductor, aged forty-five. Parents farmers, and healthy; no evidence of inherited disease. He grew up a strong, robust boy, and at twenty-two went on the railway as baggage-master. Ten years later he married and was promoted to a conductor. He was up to this time temperate and regular in all his habits, using no spirits except beer at long intervals. A few months after his promotion to conductor, his train ran down an embankment, and was wrecked. Many lives were lost, and he was greatly excited, fearing the censure of the company and public, remaining at the scene of the accident over twenty hours without rest or food. He then went home and drank spirits to profound intoxication, remaining in bed two days before he went to work again. From this time he began to use brandy, and occasionally was intoxicated at home at night. Two years after he complained of restlessness and inability to sleep at night; for this, bitters were prescribed, which brought relief. His disposition began to change, and he became more excitable and impatient of opposition. A year or more after he began to drink regularly when the work of the day was over, and by nine or ten in the evening was heavy.
and stupid from the effects of spirits. He was very exact and methodical in all his habits, drinking beer through the day, and never varying the routine of his life or work from any cause. When thirty-six years old, he complained of blanks of memory, or periods in which he could not remember, terminating suddenly, leaving him in some strange position with all the past a blank. His usual habit was to drink in the evening, either at home or in the club, come home always at ten o'clock, and retire, get up next morning at 4 a.m., and take his train a little later. The blanks would come on in the evening and break up at some point on the road the next day; or they would last until late in the afternoon on his return trip. He would then show much anxiety to know what had taken place in the meantime, fearing he had made some mistake, and inquiring minutely of his wife and some intimate friends. These blanks increased, and were noted by his brother-in-law, a physician, as follows:—He would come home at night heavy and stupid, not unconscious, apparently, but still and quiet; sleep soundly until morning, get up at the regular hour, talk but little, take breakfast as usual, go out on his train, read the paper, attend to all the duties of his business, in a quiet mechanical way. If anything unusual happened he seemed to be more indifferent, and acted with judgment and caution. All at once he would seem to awaken, his manner would be nervous, and his eyes would indicate alarm, he would look over his change and tickets, and inquire of anyone who was intimate with him as to what had taken place, having no idea of anything from some time in the evening before. He would remember some question or topic of conversation that occurred in the company in the past evening, and be ready to go on with the conversation, only the circumstances had changed, and the interval was a blank. This state would alarm him, and he would drink less for a few weeks. He never was delirious, but complained of heaviness and desire to sleep. When he was sober he would be nervous and irritable, and then use spirits to steady his nerves.

The treasurer of the road noted this condition, in his ability to make out the returns, when his trip was over. He would count and re-count his money, then give it up, saying his head ached, and he could not get it correct; the next day it would be satisfactorily settled. The blanks increased in length, and would last from the evening until the return from his daily trip, the next day, twenty hours or more. During this time he would not seem to be in any way different to the train men. Once, when an accident had occurred, he recovered his senses, and was unusually excited; on other occasions he would have men put off the train, and pass through exciting scenes, yet have no memory of them, and be unable to make up a report, except from the assistance of a brakeman. He tried to break up the use of stimulants, but failed, saying he would become insane if he stopped; then he diminished the quantity, but always came back to the usual amount, which was followed by more or less stupor at night. Both his wife and brother-in-law, noted these trance states, and fully verified his statements of no recollection of events. He seemed to be more suspicious as he grew older, and urged that everything be put in writing. On the road in this state, if he was asked for a favour he put it down on paper, and urged that others do the same to him. When not in this condition, he was quite careless about little things, but when he became exact and very particular his friends knew that he was not able to comprehend his state. He rarely drank except when at home, and whenever he felt that he had used more than he could bear, went quietly to bed; always seeming to have an inner consciousness of his situation, seen in the caution which he displayed to keep from observation. For over three years these blanks continued, sometimes every week, then at longer intervals, but steadily increasing in duration, and becoming more prominent in the heavy stupid air and man-
ner of doing business. He resigned and spent a year on the farm, using
less alcohol, and recovering rapidly. He is now in business, and has had
no blanks for two years, but at times after he has drank two or more glasses
of beer his memory is confused for an hour or more.

COMMENTS.

The character of the trance-state in this case was markedly automatic,
the patient doing that which he had been accustomed to do day after day.
The inebriety dated from the profound excitement of the accident where he
supposed he would be blamed; for
what reason he became intoxicated at this time was probably unknown to
himself. In the trance-state his mind
acted along the usual channels, with
out any evidence of its suspended
condition; but when this paralysis
lifted, he manifested weakness, embar-
rassment, and alarm at the danger he
was in. His fears of doing some ex-
traordinary act, or committing violence
in this state, was founded on a know-
lledge of some inner impulses, which
he did not reveal. When free from
alcohol his mind exhibited evidence
of failure in the irritability and changed
disposition. These trance-states were
purely automatic, and yet they indi-
cated a half-conscious realisation of
his uncertain state in the little cau-
tions manifested. His inclination to
begin the conversation or answer some
question, which had occurred many
hours before, showed the reality of
the blank, although his manner gave
but little evidence of it. I am con-
vinced that many similar cases will be
found among those who are pursuing
an exhausting monotonous work. A
steamboat pilot informed me that when
worn out from loss of sleep, if he drank a glass or more of brandy; all
memory of the time and place would vanish; and some hours after he would
recover, finding that he had remained
at his post, but could not tell what
had happened in this blank. The
captain of the boat doubted this for
the reason that he seemed in no way
different, only less talkative. A skilled
mechanic consulted me for similar
blanks which followed excess in the
use of spirits, during which he attended
a certain dangerous machine, perform-
ing all the duties requiring skill and
judgment, and yet he could not remem-
ber anything which had taken place for
hours. He would awake when the ma-
chine stopped for the night. When the
machine was kept in motion late one
night, his blank continued until it
stopped. These blanks were trance-
states following periods of severe
drinking, and in many respects like
the case we have detailed at length.
A house painter, who is an inebriate,
will paint for hours in the most dan-
gerous positions while in these trance-
states, then come down, recover his
senses, and wonder how he could have
done it, without falling.

I have gathered the histories of a
number of similar cases, in which,
during the trance-state, the mind
acted as before, with the same dis-
cretion and judgment. They are all
of them following some methodical
work, without change or variation
from day to day. Also the alcohol is
taken with regularity, and is unatt-
tended with any symptoms of intoxi-
cation. One of these cases is a grocer,
who for hours has a perfect blank in
his work, but keeps everything on
paper, and thus is able to know what
he has done. A second is a clergy-
man, who, after a few glasses of beer
on Sunday morning, has no re-
collection until night of anything which
may have followed. A third is a tra-
velling man for a boot and shoe house,
who drinks with every customer; at
certain times in his trip he has blanks
of one or two days, during which he does business, and has no memory of
what has happened. An engineer
would attend to his duties in this
trance-state for hours, without giving
any evidence of his condition, except
general abstractedness of manner.
He would show coolness and judg-
ment the same as if he fully
realised his surroundings, and have
no memory after. In all these cases
there is a similar condition in the
automatic state, showing that the
mind may go on, irrespective of the
memory, in certain directions, under
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the influence of inebriate-blanks of many hours, and yet the person attend to his work without knowing what he is doing.

CASE II.

Trance following Inebriety of Emotional Character.

A physician came under my care, fifty-one years old, with a history of insanity and phthisis in several members of his family for two generations back. He was educated at Harvard, in both the literary and medical departments, married at twenty-four, and settled in a large manufacturing town. He soon built up an extensive practice, and worked incessantly for many years. When about forty years of age, he suffered from depression and continuous melancholy, following the death of his parents and two of his children. At this time he began to use alcohol as a stimulant when worn out and after a hard day's work. This increased with his labour, and at times he drank regularly, then the amount would be diminished. He was never intoxicated, and yet for weeks he would be under the influence of alcohol all the time. After prolonged over-work and want of rest he would fall into a paroxysm of crying before retiring, condemn himself for drinking, saying he would soon die, and then fall asleep, waking up next morning with no memory of it. These emotional paroxysms would occur every week, and only disappear when he became less exhausted or was rested. All his life he had been a noted sceptic and doubter, never entering a church, but continuously sneering at all religious truth and church organisations. On one occasion, during a season of over-work, followed by the usual excessive use of alcohol, while passing a church where a revival was in progress, he went in, and was soon interested, going forward for prayers, then began to pray and exhort, manifesting great eloquence and enthusiasm. The church people were overjoyed at the sudden conversion and change of life, but did not discover anything unusual in his manner or words. He went home in a happy frame of mind, singing and praying, went to sleep, and the next morning had no memory or recollection of any of these scenes. When informed, he was mortified, and avoided all contact with church people, going away for a week for fear his disgrace would be known.

Two months later, he entered another church, late at night, where a prayer-meeting was in progress, taking part as before, and displaying both eloquence and great earnestness, then going home, and next morning he had no consciousness of where he had been beyond a certain point. Within a year, on several occasions, he appeared at religious meetings, and took an active part, to the astonishment of his friends and the alarm of himself when informed of it after. At these times he seemed perfectly sober, but was nervous and excitable in his actions and manners. He would not see any of the church people after these events, and when obliged to meet them was cold and silent. He protested stoutly that he had no memory of it, which was confirmed by the failure to fulfil some promises made at these times. The sound of church bells and music at night, when he was driving out after having drunk freely of alcohol, seemed to throw him into a trance state, during which this strange impulse came on. Finally he became alarmed and went abroad; but as he used wine freely, these trance states continued at long intervals, and were indicated by paroxysms of prayer and sorrow that he was not better, and resolves to live as he should. After a year of travelling, he returned and resumed business, taking a partner, who went with him at night, and watched over him continuously; but still the trance states appeared. He still used alcohol, but could not stop, fearing that he would die without it. He then retired and consulted me. These trance states were, in his opinion, drunken fits, which he wished to be free from. But, like nearly every inebriate, he was confident he could be a moderate drinker, and never be the worse for the use of alcohol. He talked rationally on other
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matters, and was suffering from rheumatism and general debility. A few weeks' treatment was followed by restoration, after which he went West to live on a farm. A year after, he had recovered in a great measure.

Comments.

The marked neurotic inheritance was the favoung soil from which inebriety would naturally follow, depending on any exciting cause that was brought to bear upon it. In this case, the exhaustion of over-work and the mental shock from grief reacted readily into inebriety. This continued for a long time, until the trance state came on. This was at first a mere emotional outburst, manifest in religious feelings; then, from circumstances, developed into the strange religious interest of short duration, which was utterly a blank to him. The emotional fear of death was present in all these cases, but on no occasion did his friends at the churches have any suspicion of his real state. The knowledge of these scenes from the statements of friends plunged him into deeper melancholy and remorse. His mind was full of alarm at the prospect of insanity, and yet he could not stop. These trances pointed clearly to the failure of the mind, and a degree of mental irresponsibility which was not clearly recognised. The line of action was that to which the brain was unaccustomed, and required the play of a new set of faculties. In the first place, the brain in the trance state simply acted along its usual course. In this case a new path was followed. In both, an automatic condition was present, one guided by the experience of the past, the other acting from inner impulses, in new channels. The same condition is often noted in chronic inebriates, who, after a certain stage of excess in the use of spirit, will exhibit a remarkable spirit of emotional excitement to reform others, or protect them from injury or wrong. The strange mental acts and desires at this time are nothing but trance states, in which some of the facul-
ties are suspended, and others are alive and active. The Gospel Temperance Meetings, where the excitement is intense, are excellent places to study this trance state. Men in different stages of alcoholic excess will come forward and sign the pledge, and manifest great earnestness, and yet next morning be utterly oblivious to everything done. I have seen many inebriates just this side of stupor and muscular paralysis be attracted to these Gospel Meetings by some means, and become the most enthusiastic temperance men, sign the pledge, and describe their past degradation with evident satisfaction, and close with the wildest assertions and promises for the future. The meetings of Moody and Murphy brought out many curious illustrations of this phase of inebriety. Thoughtful men often wondered why men who were so enthusiastic did not appear more than once or twice at these gatherings. On inquiry, it was found that they had fallen, or gone back, when, in reality, this was a trance state, from which, on recovering, they did not return, because they could not realise the position which had been taken. A United States senator, who was an inebriate, appeared at one of these meetings, and made a solemn pledge not to drink again; the next day he denied it, and never believed or acknowledged that it was true. I have found many persons who join the temperance ranks in this state, when on finding what they have done, make an honest effort to carry it out. Others are ashamed, and avoid all such influences in the future. The temperance leader never stops to question the strange inconsistency of men who are so positive and earnest in their reformation, then suddenly grow indifferent. To him this is only an evil heart; but to the closer observer it is simply the trance state indicating a degree of degeneracy needing medical rather than spiritual care. I conclude from this that inebriates brought suddenly into a state of much excitement fall into this state, and are moved by
circumstances and surroundings to which they are really oblivious. This state may appear as a simple impulse, or grow into a fixed delusion; as in the case of an inebriate who signed the pledge, went home, and because his brother did not approve of this action, assaulted him with great violence, attempting to force him to believe in it. Often men who have signed the pledge in this state suddenly manifest a mania for public speaking in the temperance ranks, and go on for weeks, always drinking in secret, and more or less oblivious to their real condition. In one case, a man who had signed the pledge was, for many weeks, both drinking and speaking, creating intense excitement everywhere, then recovered, with no connected memory of it. I am confident in believing that this trance state is not only full of danger from impulses of all kinds, but is the fertile soil for delusions which linger long after the origin of them is forgotten. Two patients of mine, who had been sober for four months, both drank freely, and then went to a temperance meeting. Both went forward, and soon became very warm in their religious feelings. The next day they had no recollection of what had happened, or that they had attended such a meeting, and both affirmed that only prayer could save inebriates, and when asked where they received this impression they could not tell. Their history before this event showed that they did not entertain it then, and that it was impressed on them during this trance state, but all the other circumstances were forgotten. It may be stated as a fact that in all cases where religious emotion is constantly appealed to as an element of cure, the patient is on the border of the trance state; and, furthermore, any system of treatment which depends exclusively on the religious element cannot build up healthy tissue or restore defective brain force.

Case III.

is presented to show the prominence of the sexual instinct during the trance state.

A farmer, aged forty-eight, whose parents were eccentric and feebleminded, and had lived away from society, and worked hard a long lifetime. When about twenty-six years old the lady to whom he was engaged to be married died suddenly, causing great grief and gloom. Both parents dying soon after, a deep melancholy followed, during which he became more secluded, never leaving the farm unless on business. For many years he lived very retired; when any one called on him he was pleased, and talked cheerfully, but never returned such calls. He seemed to take pleasure in history, and spent his leisure reading, never visiting nor attending lectures or meetings of any kind. At thirty-nine his sister, who kept house for him, died, and soon after he was noticed to visit a neighbouring town, and buy a jug of whisky. This was repeated regularly—every few weeks, at first; then at shorter intervals. No one saw him use stimulants, and he never seemed different from the effects; only more solitary and reserved in his manner. At this time he worked hard, was prosperous, and apparently in good health, manifested excellent judgment, would go to his room at dark, and would not be seen until next morning. The amount of spirits consumed reached a gallon a week, and in the harvest nearly double; when one day he broke off work abruptly, dressed up, and drove away to a neighbour's, asking to see an unmarried lady. He explained his presence as a mere social call; that he had been secluded, but now he was going to be social, and visit his friends often. His manner was reserved, but polite, and his conversation was clear and sensible. The next week he made other calls on young ladies in the neighbourhood, talking very pleasantly a few moments, then going away thanking them for the invitation to call again. These visits were perfect blanks to him; he would awake next morning and remember nothing of what had
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period of prolonged excess and hard work, in amorous impulses to seek the society of ladies. An extreme caution seemed to be present holding him from making more than a formal call, and not to visit the same place more than once. Nothing but the unusual character of the call was in any way noticeable. At home the abruptness of leaving business, and other important duties, was a hint of the change of mind and loss of consciousness. When informed what he had done he seemed more dejected than ever, and became more averse to society or meeting any one. This trance state gave vent to his latent sexual impulses, which for a time guided his mind. Had he committed an assault at this time, no general evidence in defence relating to his conduct would have indicated more than unusual acts, for which he gave general good reasons at the time in his desire to change his life, and when this trance state had passed away all knowledge of these events would have been denied. No ordinary observation of persons who saw him in this state would have indicated his real condition. I think it will be found that many of the unusual sexual crimes committed by inebriates were done in this trance state, where the higher faculties were arrested, and the animal instincts were left free to guide and suggest. The extraordinary conduct of previously moral men who are inebriates can only be explained by this trance state. When sexual crime follows inebriety it may be either a mere automatic action of a low moral condition, built up and fostered by low thoughts and actions, or the expression of a disturbed function which bursts out into an impulse that is dominant for a time. In the former case some plan or premeditation may seem to be present, because the line of conduct has been outlined in actions and thoughts that have left an impression on the brain. In the latter it is often paroxysmal without plan or purpose—simply the explosion of an impulse which the disorganised brain is powerless to resist. The following cases are given to indicate the prevalence of these trance states in inebriety. I have

taken place after a certain moment in the field or at the house, and wonder greatly how he had employed his time. One day he loaded up the waggon to go to the flour mill, went to the house, and evidently drank some whisky, returned, hitched up his horse, and went calling about the neighbourhood. The next morning he could not understand why he had not gone to the mill. These visits excited much interest in the neighbourhood, and among his friends. He seemed fully conscious of all the surroundings in this state, was polite, and rarely called twice, but if the lady was supposed to be anxious for marriage, he seemed very guarded, and inquired for some male friend to be present, holding only the most general conversation, and always declining invitations to ride out with any one. He was never childish or embarrassed, but seemed in earnest and really enjoying himself. He would return soon after dark, put up his horse, give very strict injunctions about fire, then retire, and have no memory of what had happened. These blanks continued for several years, and were all substantially the same, limited to short calls on different ladies for miles about. He was more secluded than ever in the intervals, refusing to see persons who returned these calls. Coming under my notice, I found him suffering from dyspepsia, and many of the usual symptoms following the use of alcohol. He thought he was intoxicated during these blanks, and claimed that he used alcohol to prevent consumption. He was reserved, but seemed to have no fixed opinions about his case, or desire to diminish the use of alcohol. His memory was defective, and he could not work regularly on the farm. He would not consent to anything being done, and two years later he died from gangrene, following a broken leg.

COMMENTS.

The neurotic inheritance and depression following the loss of friends found a natural relief in alcohol, and he became a secret inebriate. The trance state was manifest after a
gathered the history of each one, but merely give an outline for want of space. An inebriate clergyman committed a rape in the most extraordinary circumstances and asserted that he had no memory of it; the circumstances bore out his statement. A middle-aged business man of excellent character assaulted an old woman. A lawyer of reputation planned the abduction of a lady he was going to marry; a man of standing and happy in his domestic relations, married a notorious woman, although having a wife and large family. Each of these cases had no memory whatever of the occurrence, and all the circumstances were so unusual, and at variance with previous conduct, as to confirm their statements; and yet they were all punished, and the defense of unconsciousness and irresponsibility was considered weak. No medical study was made of these cases, and the excess in the use of spirits was mentioned as only incidental to the case. The apparent realization of all the circumstances was the point insisted upon in the measure of punishment.

CASE IV.

was a lawyer of eminence, whose ancestors and family had all died of consumption. He was a nervous, passionate man, wealthy, of brilliant talents, ambitious and industrious; also a devout, conscientious man, and very temperate in all things but eating. After a severe attack of typhoid fever, he began to use whisky at meals. Three years later he used it both at the table and at night before sleeping. His life was more or less irregular, and he complained of exhaustion, and inability to sleep. After a long campaign of speaking and great irregularity of living, during which he drank constantly large quantities of whisky, he suddenly called for paper, wrote a will, affirmed that he was going to die, made a full disposition of his property, and after a night's rest awoke with no memory of anything that had occurred. A week after he had another paroxysm of melancholy, wrote another will, and arranged for death, and awoke a few hours after with all these scenes a blank. During the time of this trance he was perfectly calm, and seen in no way different, reasoned clearly on all matters, and by no word or action betrayed his real state. For two years he remained about the same, having many of these blanks, always attended with the same mental phases, and apparently full consciousness; then they changed into suicidal impulses, in which he wished to have his wife die with him. He reasoned very calmly and correctly on this matter, but followed the advice of his friends. The next day he was greatly alarmed when informed of what had happened. Another trance state followed, in which the suicidal impulse took on the form of intense suspicion of the unfaithfulness of his wife. A friend of his took down an elaborate statement of his wrongs; he then made another will, left an explanatory note to be printed in the papers, and finally was persuaded to sleep, after which he awoke, and all the past, as before, was a blank. The friend who wrote this statement was a lawyer, who said that beyond the extraordinary nature of these papers nothing could be noted of the real condition of the patient. He could not in any way detect mental unsoundness. On another occasion he purchased pistols and a knife, when his friends put him in the care of a lunacy specialist, who called this epilepsy. Two months later he came under my care, and was delirious from the removal of the spirits for two days, then made a slow recovery, and is today at a water cure, improving. The trance states have disappeared, but his mind and body are both feeble.

COMMENTS.

The inebriety began with use of spirits after the fever, and the trance state was marked by emotional disturbance and conviction of speedy death. This was but the suggestion of the general exhaustion of the system, and the desire to arrange his property was the usual caution of a business man. The fact of having written his will never remained on his memory, and he always urged to
have it written when in this state, even when other copies were exhibited to him. When speaking these blanks came on, but excepting that he had no recollection of anything after a certain time, no one could have realised it. As he grew more exhausted, suicidal impressions started up. These were checked by the interposition of friends. Had he kept these impulses to himself, or not been influenced by friends, they would have developed into a tragedy. He was drifting into a dangerous mental condition, in which impulses of every description were likely to take possession and control his actions. Had he killed his wife at this time, or any one, no reasonable defence could have been urged that would have been intelligent to a judge or jury, and yet he was in a condition of irresponsibility, without doubt. I have verified this condition in the following cases:

Case I.

I was called to determine the condition of a man repeatedly convicted and punished for horse stealing. He was fifty-one years old, a hackman by occupation. His father was a weak-minded man, and his mother died in an insane asylum. At twenty he entered the army, and suffered great hardship as a prisoner. He was an invalid for two years after the war, from malaria, chronic diarrhoea, and rheumatism. At thirty he was employed in a livery stable, and was a moderate beer drinker. A few years after he was a partner in the business, and was considered honest and a very correct business man. His habits were regular, and he was very fond of horses and driving. About this time he married, and a few months later was noticed to be using spirits to excess at night. No special effects were noticed, except stupor and heaviness, and sometimes extravagant conversation; all his business matters were carefully carried on as usual. One day he walked out, after drinking large quantities of spirits, and unhitched a fine horse in front of a strange residence, and drove about for an hour, bringing the horse to his own stable; and the next day he had no recollection of it. A few weeks later he drove off another horse which he found standing in the street, and put it up in his stable, without any memory of the event. This was with difficulty explained to the owner, and was a great mystery to the man why he should do it. The third event of this kind was driving away a team of horses which had been left in a shed, and after going about for an hour or more offering to sell them at his stable. He was in no
way different, talked and acted as usual, said he had bought the team from a stranger and given his cheque for it, and went into a detailed statement of its merits and excellencies. Except a strong odour of whisky he could not be supposed to be under the influence of alcohol. The next day all this was a blank. When told what he had said he could not believe it. Later he was arrested, and the act was only settled after much trouble.

A year after another similar event, only more aggravated, happened, during which he sold the horse, and appeared to be guilty from his actions, but when arrested his mind returned, and all was a perfect blank. Another event occurred the same year, in which he went about with the owner, showing great interest to discover the horse, when he had placed him in a stable in a neighbouring town. He was arrested, and after a long legal contest barely escaped punishment. He was ruined financially, and from this time drank more. Within a few months he was found driving a valuable horse up and down before the owner’s house, testing its speed, and asserting it was his own. For this he served one year in prison; the defence of want of memory or knowledge of these scenes was treated with contempt by the court. On another occasion he took a horse, sold it, and went about with the owner for two days, trying to find it. He had no memory of anything which had taken place, and was sincere and anxious to help the owner to get his property. When it appeared that he was the guilty one, he was astonished beyond measure. From this time he went repeatedly to prison, having stolen horses on many occasions, and always after drinking, and in a condition in which he claimed to have no memory of it whatever. Sometimes he showed some degree of cunning in the concealment of horses; at other times he was bold and reckless as to the consequences of being seen. In every case there was a certain purposeless character and absence of motive, other than the mere pleasure of riding behind or driving a good horse. I found him full of delusions of persecutions, and intensely suspicious of others. His memory of events was defective, and he could give no reason for stealing, having no memory of such acts. He drank spirits whenever he could get them, but was never stupid or wild from the effects of excess; but would, after a day’s excess, awake, and have no memory of what had happened. To his friends who had watched him carefully during these trance states, he was more reserved and silent, or impulsive, and laughing loudly at times; otherwise he was rational, and seemed fully aware of what he was doing. I pronounced him as inebriate, and irresponsible as to the nature and character of his acts; but he was found guilty and sentenced to prison, where he died a few months later of phthisis.

COMMENTS,

The inebriety in this case coming from physical causes was marked by a long prodromata before the trance state appeared. The purposeless character of the crime, and the want of the usual caution manifested by this class of thieves, confirmed the statement of no recollection of it. He could have no special motive to steal when he had so many horses of his own, and when he had stolen he did not seem to use the money he received, or regard it as a gain. He seemed governed by a mere impulse to drive a good horse, never stealing a poor one, and always doing it in an automatic manner, which varied but little from time to time. His previous good conduct and the unusual character of the crime made no difference in the judgment of the court, and he was sentenced over and over again. No one ever thought it possible that he should not realise the real nature of his acts. The following are similar cases which have come under my notice:—A teller in a bank, who was a secret inebriate, after a paroxysm of drinking forged a note and put the money in his pocket. The next day he was amazed at the presence of this money, not knowing where it came from. When his guilt was discovered he had no recollection of the
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circumstances, or reason for this act. He was punished, notwithstanding the unusual character of the act, and his defence of no memory of it.

A rich brewer, after a periodical paroxysm of drinking, would alter his signatures on cheques, and refuse to pay drafts. He would have no recollection of these events the next day, and after being convinced of their genuineness would pay readily.

Another brewer in these trance states, after drinking, would diminish the wages 50 per cent. of all his workmen; and if the trance continued long enough a strike would follow. Then he would recover, and all would be reinstated again—he all the time wondering why he had done this, not recollecting anything of it. This has happened a number of times, and is now distinguished by the sudden impulses to cut down the wages.

A farmer of the highest respectability is now serving a life sentence for manslaughter, committed (after drinking spirits to excess) on a man unknown to him, and for no reason or motive. The judge charged that his reasonable conduct up to the time of the homicide, and his appearance of full knowledge of all the surroundings and the consequence of his acts, was strong evidence of his sanity, and that no proof of his inebriety or want of recollection of the homicide should be considered any defence, or by any possible way lessen the responsibility of his crime.

An inebriate of wealth suddenly fired his buildings, and awoke when they were burned down, offering a large reward for the incendiary. When it was traced to him he was amazed, and reformed from this time.

All these cases were that of trance, with the impulse to crime, that developed in different ways. I am inclined to believe that some crimes have begun in this state, then, from fear or other conditions, suddenly checked, with the mind partially conscious of the nature and results of the act. Undoubtedly there may be present a strong element of insanity associated with this trance state in crime; still, not distinct enough to be recognised by court or jury. Epilepsy may appear along this line, and be so mixed up with both insanity and inebriety as to make recognition still more difficult. The practical point to be observed is that all such cases must be measured by the facts of their own personal history, thoroughly studied and justly understood.

Case II.

was a manufacturer forty-nine years old, who had used alcohol freely at meals for five years. His ancestors were inebriates and he had begun to use spirits from some supposed debility, until he was obliged to continue them every day. He was very affectionate and generous to his wife and family, and never betrayed any anger or displeasure at her conduct. Suddenly, after using more than usual of spirits, he became very passionate and offered violence to his wife; her tears roused him from his condition, and he was greatly distressed at his conduct, which was unaccountable to him. He consulted physicians and was treated for months for some brain malady. Then another blank of memory, in which he started the most slanderous stories about his wife staying at a hotel. His conduct was consistent with his stories, and his manner was in no way unusual. On recovery he was again chagrined and did not believe he had said what was represented to him by others. He would return from a long absence on business, and break up parlour furniture in a perfectly cool way, and in two hours after have no knowledge of what had taken place from a certain time. Sometimes he would affirm that he wished to punish his wife for some negligence; she would keep away from him at such times, and after an outburst of anger in which he would sometimes break up the furniture, all would be quiet again and the trance state would disappear as suddenly as it came on. The surprise and grief at what had taken place would alarm him, so he would abate for a few weeks from alcohol. One day he assaulted his wife in the street, and walked into the police office asking to be arrested for some crime. When
he recovered he had no conception of any part of the event. These blanks, always attended by violence to his furniture or his wife, increased, and were not noticeable for any other unusual insane conduct, which he fully justified at the time, and always appeared cool and calculating. When friends called during these periods, he would reason with great calmness, and be perfectly self-possessed, saying that his head was heavy and he was not well, but would be so next day. He went to Europe, and visited the hot springs with no benefit. Finally he went to an insane asylum, and relapsed there, injuring an attendant, but in a way and manner so perfectly cool and free from excitement that the superintendent thought it evidence of a sane mind, and doubted all his statements, discharging him as malicious. I advised him to go under the special care of a physician, and he is now free from these trances, and has taken no spirits for many months.

COMMENTS.

The general history of this case is exceedingly suggestive. The inebriety was followed by a distinct trance condition, with an unusual course of action, utterly at variance with his previous character and habits. The suspicion and violence grew into a dangerous impulse. This always followed after an excessive use of alcohol, and was not attended by any symptoms except the delusion of wrong in his wife, and the desire to right them by violent measures. The passionate violence at these times was of short duration, and the blanks lasted from a few hours to two or more days. His appearance gave no hint of his unconscious condition, and his reasons for violent acts were in a measure sane. He would have committed a fatal assault had a favourable opportunity occurred, and only by the caution of his wife and friends was this avoided. Only a minute study of all the circumstances and history of the case would have indicated the mental instability which was present, and yet he would have received the full measure of punishment in the hands of any court or jury without such study. This case illustrates what in all probability takes place every day in this country, especially in the sudden purposeless crime committed by inebriates. These cases fill the newspapers, and astonish both courts and juries, who are puzzled to find a motive for the crime, or to attribute it to insanity as described by the text books, or defined by experts. Sometimes these cases, (where the suspicion of irresponsibility is present) are defended on some strained theory of insanity, whose obscenity confuses the courts, and is criticised and ridiculed by non-experts and ignorant lawyers. These cases are not studied intelligently, and the true theory of their condition is unknown. Two cases will illustrate the every day's experience of courts all over the country. Some man, an inebriate, of low moral nature, (which is always an evidence of defective brain organisation,) comes home, after excess from alcohol, not intoxicated, and in an altercation kills his wife, or some one who may be drawn into the circle accidentally. He is arrested and has no memory of the event, no study is made of his case, only a few facts of the crime come out prominent. If he has money the defence is technically unnatural, and of course fails; he is punished. The second case is one where previous good character, except excess in the use of spirits, is prominent. He commits a homicide or some strange crime under circumstances that are inadequate to explain or account for it; denies all recollection of it afterward, and the defence must resort to some specious reasoning and theories, or work on the sympathies of the jury. The judge is indignant at what seems to him efforts to defeat justice, and charges strongly against the prisoner. Conviction follows; his counsel are sure of some mental defect, and yet they cannot make it clear to either court or jury. If the crime is of a petty character the punishment precipitates him into incurable conditions, and the object of legal measures to prevent crime is defeated. The theo-
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logical notions of the nature and character of inebriety, upon which legal decisions are based, are active causes in developing incurables of this class. One-third of the business of the courts in all our large cities consists of administering what is termed justice to inebriates, but what literally makes their recovery more and more impossible. Thus crime following inebriety and inebriety itself are punished, with no effort to study the causes or reach down to understand the physical conditions present. The result is that both Church and State, in their ignorant measures to check inebriety, are not only increasing its growth, but preparing the soil for its more rapid development.

Hundreds of cases may be selected from the records of courts and prisons equally as prominent as these I have presented. All conspicuous for crime committed after and during excess in the use of alcohol; all denying any recollection of the event; and all the circumstances of want of motive and purpose confirming their statements. Yet in all these cases there has been no medical study to understand the mental condition which would develop into such acts. Assumptions of perfect sanity and capacity to reason clearly have governed the decisions in these cases. As long as the inebriate was not stupid or wildly delirious he is supposed to be fully cognizant of all his acts; it is considered a vice and punishable up to a certain line, and beyond that a doubt might be entertained. This is the same spirit of superstition which punished witches and believed in demoniacal possessions, ignoring all physical causes, and is clearly outlined in the late charge of an eminent judge as follows:

Intoxication from excess of alcohol is no defence for crime, and cannot in any way lessen the measure of responsibility.

If inebriety is only a voluntary spiritual state, this is good law, probably, but if it is an involuntary physical condition, a reform is demanded in both theory and practice.

CONCLUSION.

I pause at this point to arrange some of the conclusions that stand out prominently from the facts stated. The great obstacle apparent in the medico-legal recognition of this trance state is the confusion of opinion as to the disease of inebriety. It is a remarkable fact that, notwithstanding the great advances made in the field of mental sciences, and the increasing prominence of inebriety in its effects in every community, the same opinions prevail to-day which were taught centuries ago. Insanity has emerged from the superstitions of religious teachers, but inebriety is still invested with murky theories of vice, sin, and punishment. All studies of its nature and causation have been made from the moral side alone. As a natural result the application of means and measures for the care and control of inebriety, based on such views, have utterly failed. Practically no other result can be expected until the entire subject is studied from a scientific standpoint, above the dogmas of theologians and reformed inebriates. The world moves, and no measures for the benefit of society or the elevation of the race will succeed unless founded on the truths of nature, and along the line of its eternal laws. The inebriate in this trance state is a mere automation in motion, either moving along certain fixed lines of conduct, or acting in obedience to unknown forces, which may change or vary at any moment. Some governing centre has suspended, and all consciousness of time and the relation of events has stopped. Changing thoughts and impulses, the suggestion of a disturbed organ, or the impression of a thought or desire coming from the past, may suddenly concentrate into action, irrespective of consequences. Both subjective and objective states, influenced by conditions of health and brain power, may develop into deeds that are practically unknown and unrecorded by the higher brain centres.

The phenomena of this state divides into two forms. One, probably the most common, in which the mind
moves along certain familiar lines of action, and follows some purpose which has been previously fixed, all of which appears natural and reasonable; as, for instance, the conductor pursuing his every-day work, or the banker who attends to all his usual business, unconscious of what takes place. Second, a new line of thought and action appears, unusual and foreign to his every-day life; often impulsive, inconsistent, and yet seemingly one that he is fully conscious of, and if questioned may give reasons that seem to justify his conduct. As, for instance, the physician who attended the prayer-meeting, or the lawyer who wrote a will, in every trance state, &c. In both of these forms sudden changes from one state to another may follow. Emotional disturbances may precede this state, or may appear coincidently with it. The senses are blunted or enfeebled, or they may be intensified in certain directions. Except this, perhaps, there is little evidence of unconsciousness, and if the impulse is criminal it may appear without premonition, like a flash of light, and disappear equally sudden. Legally the first question is the inebriety of the patient. On this point the inference will be clear if the person has used alcohol at intervals or continuously to intoxication. The degree of this excess need not be stupor or delirium, but whenever it is marked by changes of intellect, manner, temper, disposition, habits, and character, inebriety is present. Next, the presence of the trance state, which may be shown from the statement of the patient, and all the circumstances of this state, with a history of the case.

First, the statement of the patient that he did not remember the act may be made to shield him from its legal consequences, or save his reputation. The general principle here is that the use of alcohol invariably impairs the memory, and that confusion of mind and disturbed will-power is a pathological result from the same cause; hence there is always a physiological possibility of the correctness of the statement.

Second, the general character of his conduct during this state will bear out his claim of trance. His general abstractness of manner, or his strange, inconsistent actions, unusual in motive and object, united with an apparent recognition of the surroundings, may be taken as evidence. The farmer who went about visiting was strangely inconsistent in conduct. The engineer was very abstract and reserved in his manners, &c.

Third, the range of the mind and the general vigour and health displayed, will give some indications of the consciousness of his acts in this state. The sudden change from frankness to reserve, or from confidence to suspicion, or the presence of emotional excitement in little things, melancholy or hilarity, the rapid change of mind from one extreme to another are also evidences. The physician, from a sceptic, became a pious man in this state; the manufacturer became violent to his wife whom he loved very dearly, &c., &c.

Fourth, if crime is committed, or any conduct which perils the good order of the community, a careful study will bring out the evidence of the mental state present.

As in the case of the hackman, a full history of his stealing was clearly that of a man not realising the consequences of his acts. Or in the lawyer who wrote his will, and had suicidal impressions, the entire history of these acts pointed to the trance state. Lastly, a general history, which will include inheritance, education, mental capacity, and health, will bring out many factors to determine the case. The patient's acts after coming out of the trance state will also determine its presence. He will manifest an indifference and a change of conduct from that noted in this state. An illustrative case recently under my care was that of a dentist who in this state was very anxious to make money, although wealthy, but when this condition passed away, all his money schemes were forgotten. In another case a man murdered his wife in a trance state, and went about for hours, not realising what he had done, or mak-
The Trance State in Intoxication.

ing any effort to escape. From these and other studies the trance state may be reasonably proven to any court or jury. Then comes the question of responsibility. Clinical facts within the observation of any one will indicate unmistakably that in all cases of inebriety there is a defective brain power and general perversion of healthy activity. Also, when inebriety is present, the door is open for many and complex nervous disorders, which often complicate and make the inebriety more uncertain and doubtful. Hence, when inebriety is proven to exist, the responsibility of the patient for his acts is lessened; he is not of sound mind. When the trance state is determined, the actual responsibility or cognisance of right and wrong is suspended, and the patient is a mental waif, without compass or chart. No evidence of premeditation or apparent judgment in his actions can alter this fact. Any course of action marked by this may come from some impression laid up in the past, which, when conscious reason is withdrawn, takes on form and semblance. The real condition of the mind in this state is more or less concealed. Nothing less than a thorough medical study of every case by competent men can determine the measure of responsibility. Such a study must be made from a physical point, based on the facts, for nothing can be a greater injustice to both the patient and the community than to condemn and punish without a knowledge of all the conditions and circumstances. The object of the law to protect the rights and interests of individuals is defeated where its enforcement precipitates the victims into more hopeless conditions. Inebriety in any of its forms may be no excuse for crime in law, but it can never, in any case, be an excuse for punishment which destroys the victim. The time has come to lay aside the legal barbarisms, relating to inebriety, of the past, founded on superstition and ignorance. The borderlines of sanity and responsibility in inebriety, as laid down by courts, are unsupported by facts and the teachings of science.

Inebriety in all cases must be regarded as a disease, and the patient forced to use the means for recovery. Like the victim of an infectious disease his personal responsibility is increased, and the community with him are bound to make the treatment a necessity.

The following propositions sum up many of the facts mentioned:

1. Inebriety must be recognised as a condition of legal irresponsibility to a certain extent, depending on the character and circumstances of the case, and the general mental integrity displayed.

2. All unusual acts or crime committed by inebriates, either in a state of partial coma or alleged amnesia, which come under legal recognition, should receive thorough study by competent physicians before the legal responsibility can be determined.

3. When the trance state is established beyond doubt, he is both legally and practically irresponsible for his acts during this period. And each case should be measured by the facts of its individual history.

4. Inebriety is a disease requiring physical means in the treatment. Society demands of the patient that he use diligence to recover, and so far as he may neglect this, both himself and community are responsible.

5. It is the duty of the State to provide asylums and encourage private enterprise to furnish the means and appliances for restoration.

6. Lastly, standing on the borderland, and looking back at the monstrous injustice and legal crime that is daily committed in the punishment of inebriates, who are practically insane, I am convinced that the time has come for a revolution of sentiment and practice, in which both the inebriate and the community must be held responsible, not alone for his acts, or the consequences of them, but the causes and conditions which have developed in this way; then the victim will be forced to avail himself of every means for prevention, restoration, and recovery.
ALCOHOL AND ITS USE BY HEALTHY PERSONS.*

By James Startin, Surgeon and Joint Lecturer to St. John’s Hospital for Diseases of the Skin, London.

John Stuart Mill, we are told, was once asked by a young lady of his acquaintance, to explain some knotty problem in social science. After listening attentively to his very lucid explanation of the difficulty, the young lady exclaimed, “Oh, Mr. Mill, how I envy your head.” “And, my dear young lady, how I envy your heart.” “Since I envy your head and you envy me my heart, it seems most fitting that head and heart should go into partnership,” was the maiden’s reply—I should think it must have been Leap Year—and the result was a very happy marriage between the philosopher and his pupil. Now I want head and heart to enter into alliance to-night. I hope to enlist your reason and intelligence as well as your generous sympathy and your warm affections, as I tell you the reasons why I want you all to become total abstainers from alcoholic drink for your health’s sake. First, let me tell you myself never drink spirits under any consideration; neither do I recommend them to my patients, except under the most exceptional circumstances, and have not for three years. I could not have believed what a difference it has made to my health and strength; I think better, I work better, I am physically stronger, and my patients, both in private and hospital practice, express gratitude to me for my recommending of absolute abstinence from alcohol to them. Now, different constitutions require different treatment. Our able reverend friend at our last lecture gave us, the Doctor included, a strong dose. I hope to be able to give you a milder dose, but an effectual one as regards complete and total abstinence from alcohol. And there are some men and women too who require a very strong dose, and he no doubt knew this, and had seen its value. That awful tale of the gin drinker’s child made one’s very heart stand still, and we fathers and mothers, do not think it is enough to make us abstainers, for example’s sake alone to our children, as well as our duty and love to our neighbour?

Let this be one of your maxims through life, “Spirits of any kind should never be taken, except as physic.” (Mr. Ernest Hart)*

It is a singular fact that, ever since we have any record of civilised society, some form of alcoholic drink has been indulged in, and we have as yet very little experience of the effects of alcohol upon health to be gleaned from observations on the use of it upon the lower animals, since man alone has had recourse to such a poison; but I will tell you something about its effect on them presently. Have you ever seen an animal drunk? I have, and what was my feeling? First pity, and then intense disgust. I have seen pigs drunk from eating brewers’ grains, and they certainly performed the most extraordinary antics, but not more so than human beings when under the influence of drink. I have seen a drunken donkey, but it was made drunk by its drunken master giving it pints of beer. The man was a drunkard himself. How dreadful we may think this to be, but how much more evil is it, when we drink intoxicating draughts ourselves and give them to our children or our friends.

Perhaps the strongest argument of those who take the side of alcohol being of service to mankind is that it has been so long used by the most civilised and foremost nations of the world’s history. Naturally enough it would seem to most of us that what

* From a lecture delivered to the Surbiton Branch of the Church of England Temperance Society, 5th April, 1882.

* This is another maxim, “Happy is the man who drinks only when he is thirsty.”
was good for our forefathers is good for us; and hence you see that we who are attacking the use of alcohol have really a very difficult task to perform, which requires the greatest patience, good temper, and moderation on our parts.

It is with a full knowledge of this difficulty, having carefully studied the arguments for and against its use, that I have come to the conclusion that no healthy human existence requires alcohol in any shape or form.

It was only in the eleventh century that chemists began to distil spirits from wines; and it was not until long after this that spirit drinking prevailed throughout Europe.

Science declares now that alcohol is in no sense of the word a food. If it contains any nourishing properties (which remains to be proved), the re-
solute seeker after food would be hopelessly intoxicated over and over again long before he came in sight of a respectable meal. Alcohol is not a heat giver; on the contrary, it robs us of our vital heat, and makes it exceedingly hot for us by heating the surface of our bodies, during the abstraction of this very necessary property of life. As alcohol does not furnish us with supplies adequate to repair the three-fold loss of substance, heat, and moisture, without which renewed health cannot be, these drinks are not a necessity of healthful life.

They are simply luxuries and in no sense necessaries. And science further deposes that intoxicating liquors owe at once their potency and charms to an irritant narcotic poison—alcohol. As I shall endeav-

our to show you, it vitiates the blood, it inflames the stomach, overtaxes the heart, destroys the kidneys, hardens the liver, softens the brain, destroys the complexion. It dims the intelligence, it darkens the judgment, and paralyses the will. It is indeed a mocker. It promises us strength and mocks us with weakness. It promises us endurance and mocks us with faintness. It promises us substance and mocks us with shadow. It promises us heat and mocks us with cold. It promises us moisture and robs us of the moisture we already possess. It promises us life and mocks us with premature death. It promises us intelligence and wit and mocks us with confusion. It dazzles us with visions of happiness and plunges us into the depths of despair. Nay, worse; by the operation of the law of heredity alcohol transmits diseases both of body and mind which it induces, and stamps upon posterity the indelible hand of an inherent crave for the deadly narcotic which is the cause of all this mischief. I observe by late calculations that it is supposed that in the United Kingdom alone, both the moderate and immoderate use of alcohol, causes something like forty thousand deaths annually; and if to this we add the consequences to the relations of such victims to alcohol, the shame, beggary, and degradation so often inflicted on the families of drunkards, we cannot fail to see it is indeed high time that such a destroyer of our happiness should have its claims to a place among human wants most carefully examined. To the medical man this comes more home than any other member of society, since on him is naturally laid the grave task of investigating and promulgating the truth with regard to the physical habits of his race. And following the maxim of Hippocrates, the great father of medicine, "I will follow that system of regimen which, according to my ability and judgment I consider for the advancement of my patients, and give no deadly medicine to any one, if asked, or suggest any such

* But not for drinking purposes. It was then called "spirits of wine." Why spirits! Its strange intoxicating property discovered, it was thought to be a Spirit. Was used as a solvent for gums and resins used in manufactures; and of great value in Pharmacy as it kept in solution the valuable properties of drugs and barks used in medicine.

† In the fifteenth century, when it was first used as a beverage as "Hollands"—Gin-eva. Nothing more than spirits of wine flavoured with the juniper berry.
counsel; and with simplicity and purity I will pass my life and practise my art."

The question now comes—Are alcoholic liquids, when taken in limited quantities, harmless or safe? To accurately understand the influence of any beverages on the frame of man, our first business is to see what they are made of.

In addition to a few unimportant ingredients, intoxicating drink consists, apart from the water they contain, of alcohol. What is alcohol? It is, as every one acquainted with chemistry and physiology can tell you, an irritant narcotic poison, admitted by the highest authority on wine growth and manufacture (Drs. Thudicium and Dupré)—the former one of my old teachers—to be a poison even in small doses. We find in whisky, one pint, no less than 10½ ozs., and in a pint of brandy the same, and in rum 15 ozs.—a large amount, you see, of the poison. Port and sherry contain 4 ozs. of spirit, champagne, 3 ozs., claret 2 ozs., London Stout 1½ ozs., pale ale 2½ ozs., cider 1 oz. to the pint. Half an ounce of alcohol having been known to kill a child four years old, it follows that there is as much poison in a pint of tent as will prove fatal to a child of this age, and half kill another, and as much in a pint of rum as would kill thirty. Such being the nature and composition of intoxicating drinks, what effect may we expect them to have upon the body and brain of man? A poisonous effect surely. And so indeed there is.

Alcohol when swallowed, especially as spirits, brandy, whisky, rum, and gin, at once begins its evil work by irritation and inflammation of the stomach. And we medical men see, if we have the opportunity of examining the stomach in the post-mortem room, of a man who has died from drink or violence, its effects! Angry inflammation, or even ulceration and corrosion of that organ.*

Many dyspeptic men and women, too! literary men especially, have come to me with a long account of aches and pains, and eruptions of the skin, under the burden of which accumulated miseries they invariably say they could not get on without a wee drop of spirituous comfort; but I invariably find that when they adopt my advice, and completely discard the broken and deceptive alcoholic reed by which they thought they were supported, they soon leave their sorrows behind, and emerge into happy manhood and womanhood. The great majority of cases of bad appetite and dyspepsia are the result of constant daily moderate drinking.

Now, with regard to the effect that alcohol has upon the several organs of our body. First, the skin, in which I am more particularly interested. To those who wish to keep their skins in a healthy condition—and I speak especially to you women—never drink, as you value your complexions, never drink spirits or other intoxicating drinks. My attention lately has been much drawn to the fact that amongst my patients, both in hospital and private practice, often averaging 200 per week, many of these are disfigurements of the skin, and due entirely to drink, and amongst the upper classes too. And, further, it is a painful fact that there are 50,000 prisoners in our jails; 60 per cent. of the inmates of our lunatic asylums are the victims of its direful influence; and there are about a million paupers in our workhouses or elsewhere, and plenty ready to follow them, all through drink. I find in my own hospital, St. John's Hospital for Diseases of the Skin, more than 60 per cent. of the cases that come before me are brought about by its abuse; and those eruptions causes it to grow thick, and finally to lose its powers of digesting food.

All our organs have thus beautiful protecting membrane, the lungs, the heart, the liver, indeed the whole alimentary tract in our bodies, that which absorbs the life-giving properties of food. This is all injured by alcohol. It loses its elasticity; it loses its permeability, i.e. its power of letting substances pass through it, and thus the nourishing food goes for naught into our bodies.

* What is its effect on the membrane of that organ? First it inflames it, then
of the skin that are either inherited or acquired are very materially influenced by its use. Alcohol has a direct specific action upon the skin, and being in the first instance a most active generator of heat, has its evil influences on the capillary circulation of the skin, i.e., the surface circulation. Do we not see it in the red nose of the drunkard?

Through the baneful influence of alcohol on the blood, two-thirds of the cases of gout and rheumatism which come under our notice have been brought about.

Dr. Norman Kerr says, that out of 1,560 cases of gout he has seen, only one was in the person of an abstainer, and in this instance the disease was hereditary.

To understand best what organs are most frequently affected by alcohol, it may be as well to remember that alcohol and other fluids are first absorbed by the stomach and upper, or larger, intestines, and enter into the circulation of the liver almost at once. After leaving the liver and circulating in that organ, it goes to the heart and lungs, then into the brain and general system. Alcohol greatly injures by its irritative effects upon the tissues, and hence it does the greatest injury to those organs it first meets with. The stomach, then, is the first sufferer, its lining membrane becomes inflamed and red; in drunkards this becomes thickened, and shows an unnatural grey colour, dotted with black spots, and its surface is covered with a nasty viscid mucus. The dyspepsia of the drunker is a well-known symptom of stomach disease. The organ is distended by gases, and the patient complains of constant retching and vomiting of mucus, bitter taste in the mouth, furred tongue, wind in the stomach, rumbling in the bowels and diarrhoea, alternating with constipation.

The liver is rarely found undamaged in drinkers, indeed it is generally found very much diseased. The "Gin Drinker's Liver," with its thickened covering, shows this more especially; people often die from this disease alone.

The lungs are the principal organs through which alcohol escapes from the body, and so are frequently damaged by it. The diseases it produces are acute congestion, bronchitis, laryngitis, and consumption. The hoarse voice of the drinker is proverbial.

Heart disease is also one of the evil consequences of alcoholic drinking, large quantities of fat may be deposited around it and impede its action. The muscular fibres of it become also diseased with the same material and stop its action, and suddenly breaks down and leaves many a good man a useless organ. In this way a single glass of spirits causes the heart to beat 4,300 additional times in twenty-four hours,* thus imposing on it as heavy an extra task as if a person had to lift 1½ tons weight 1 foot high.

Hear a well-known rhyme:—

Oh! my heart goes pit a pat, pit a pat,
Oh! my heart goes pit a pat, pit a pat,
Oh! my heart goes pit a pat, pit a pat,
All because of alcohol.

But the worst now remains to be told.

We come to the seat of the intelligence, the brain. Alcohol paralyses the vasomotor nerves, those which control the circulation of the brain, i.e. which feed it. There is a fitful and irregular supply of blood to it, and the result is seen in confusion of thought and uncertainty of purpose. The drunkard is palpably incapable, never to be trusted, and he who is merely excited by drink, the edge of whose faculties has been blunted, is honoured with the highest confidence. With what results? Let many accidents by land and by sea bear witness.

Insanity, paralysis, epilepsy, apoplexy, descending too often to the innocent offspring, are the awful consequences, not only of drunkenness, but, as Sir Henry Thompson says, drinking far short of drunkenness.

The great testimony then of science is that alcohol is neither a necessity nor an advantage, and, in plain terms, a brain and a body poison.

Now, with regard to work and the

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* The heart beats normally 100,000 beats a day.
effect of alcoholic drinks. If there is any honest man who really wants to get at the truth, and will not be set from his purpose by people con-
doling with him about his appearance and the result of his experiment, and will try the effect of alcohol upon work, be it intellectual or manual, I would tell him fearlessly, and would risk all I possess upon the back of the statement, that as certainly as he does try the experiment for even a month or six weeks, so certainly will he come to the conclusion that however pleas-
sant alcohol is for the moment it is not a helper of work.* It is a certain hinderer, and every man who comes to the front in his work, whether it be in profession, in literature, in trade, in artisan work, is marked by one charac-
teristic: that the more busy he gets the less in the shape of alcoholic drinks he takes; and his excuse is, “I am very sorry I cannot take it and do my work.” How did Captain Webb swim across the Channel? He had webbed feet certainly, but no intoxici-
cants. Cavill and others tried it with intoxicants, but could not do it. W. G. Grace, the celebrated cricketer, who can stay all day at the wickets, and put the ball where he pleases all over the field, and bowl his adver-
sary out, demanding a quick head and eye, is a total abstainer. Angus Cameron, twice winner of the Queen’s Prize at Wimbledon, was fortified by total abstinence; and others I could tell you about. And I could tell you much about intellectual work, whether it be writing, public speaking, writing for the press; whether it be painting, sculpture, or a delicate hand-
dicraft which is something more than mechanical, and could show you the deteriorating influence of drink in its different stages; so much so that it is almost possible, by carefully noticing

* Remember the tale of the Rev. Mowl. The story of the gang of labourers, those who drank pots of beer, and those who did not. In twenty-four hours the result was: the drinkers gave up before the end of the time; the abstainers worked on to the end of the time, and left off as fresh almost as when they began.

the falling off in the quality of the work, to tell the amount of intoxicating liquor that had been taken.

I will now tell you something more about the effect of alcohol on pigs and animals.

For a period of twelve months the French doctors had been keeping nine pigs in a state of habitual drunkenness. This was done with a view to test the different effects of several kinds of al-
cohol. The Prefect of the Seine put some styes and a yard in the municipal slaughter-houses at La Villetta at the disposal of his savants, in order that they might conduct the experi-
ments at the smallest cost to them-

seh. We learn that the pig who takes absinthe is first gay, then exei-
table, irritable, combative, and finally drowsy. The pig who had brandy mixed with his food is cheerful all through till he falls to sleep: the run-
swilling pig becomes sad and somnolent almost at once; while the pig who takes gin conducts himself in eccentric ways, grunting, squealing, tilting his head against the sty door, and rising on his hind legs, as if to sniff the wind.

Do you think we are a whit better than these wretched animals were when we are under the influence of drink? God grant we never may be.

The effects of alcohol on the lower animals, on their minds and bodies, are of the same kind as those of man, varying from simple transient, palpably pleasurable excitement from small doses, up to sudden or speedy death from inordinate quantities. As in man, the effects vary according; not only to the dose or quantity, but ac-
cording to the individual idiosyncracy, the species and genus to whom or to which it is administered.

Thus, from the same amount of the same form of alcohol, given apparently under the same circumstances, one animal may remain quiet and passive, while another becomes mettlesome and dangerous; one may commit only a series of ludicrous absurdities of conduct, while another develops a fury, ferocity, or destructiveness, that are highly dangerous to themselves and to man.
The elephant frequently manifests its love of arrack, and is easily intoxicated therewith; the spirit, no doubt, to which it has easiest access. I was very sorry to read in the press the other day that our great children's pet had been given beer during his transit from the Zoological Gardens to the ship to bear him away from us, and afterwards to read that a whole bottle of whisky—which had been sent to him as a present, at the last thing, just after our good lady the Baroness Burdett-Coutts-Bartlett had left him—had been poured into his trunk, and he had taken it with greed, and put out his trunk for more. What can the Great Maker think of this; with pleasure, think you? If the officer of the Society for the Prevention of Cruelty to Animals had thrown the bottle into the sea, before the poor beast had its contents, he would have done some real service.

The mandrill prefers porter and gin (Cassell). Certain monkeys and parrots are fond of rum (Buckland). Baboons are partial to beer (Brehem). The orang shows a preference for different kinds of wine. Other monkeys have a special liking for beer; The donkey too has acquired a penchant for beer (Watson), as I have told you. Wood mentions a Newfoundlander dog that regularly after his daily swim called at a certain beer shop for his pint of beer. The inference, rather, is that simply the individual animals mentioned display a fondness for those forms of alcohol which are the most easily got at.

Various eccentricities of an acquired or artificial, morbid, or perverted taste or appetite, are exhibited in the form of as striking dislikes of certain beverages, as of likings to others. Thus a cat that was irresistibly attracted by porter, refused her more natural and innocent aliment, milk. A dog that lived at a brewery was so passionately fond of drinks, that he would turn away disdainfully from biscuits or sugar, but would swallow any stimulant greedily. Frequently the love of alcoholic fluids becomes inordinate and uncontrollable. Thus we are told of a cat for which porter had a fasci-
recently described as "our great English superstition"?

Now let me speak a few words of warning to you women, women of England, young as well as old, because drinking amongst women has greatly increased the last few years. First—those of you who nurse your children, and it is always best for you to do so, if you can. Do not be deluded into the idea that you require stimulant at those times, it is a fallacy and a delusion. It is most probably mainly to the all-pervading presence of the subtle poison in the maternal circulation, that we owe the chief part of the worse than Herodian massacre of innocent little children at the breast, a massacre as infamous as it is wanton. Of all the physical agents that destroy the infant life of our country, there is none so deadly, none so inexcusable as drink. The sad suffering, the sorrowful slaughter from indulgence in intoxicating drink by mothers of all ranks, I am compelled helplessly to see, makes my heart ache at times.

Thoughtless nurses, careless doctors, selfish mothers, they should have pity on the young. Leave the handiwork of the Great Architect alone. You cannot improve, you can but mar it.

How sad a thing it is in London to see women in all ranks of society drink. Do you know how they do it? The lady's wine merchant, the grocer, he will tell you! The ladies' public-house, the restaurant, the pastrycook, they all now have a spirit license. The amount of sherry consumed in some of these places by ladies in the upper ranks of society, is perfectly awful. The grocer's spirit license has been the ruin of many a happy English home.

The Eau de Cologne drinks—the chemists will tell of the quantity sold to ladies.

Hear the experiences of one who has taken the trouble to find out for himself.*

Here comes Miss Flash, the very antipodes of the country cousin, and her long snipe-like nose tells of indigestion or of sherry. The former complaint she leaves outside in a hansom cab, the latter she consumes here—if not here somewhere else, and else, and else; for these sherry women of ours are the precise counterpart of the "gin crawlers" of the lower orders, and will go from "Limpsey to Limpsey"—a glass here, a glass there, and glasses everywhere, in precisely similar fashion to the wretched men and women who spend the day crawling from pub. to pub, for two pennyworth of Old Tom. Instead of the vile concoctions called spirits—I mean gin, rum, brandy, whisky, sherry, and other alcoholic liquids (which are nothing more nor less than spirits of wine, flavoured to the taste with sugar, essential oils and colouring matters), which are sold to our labouring classes and others; and that wretched stuff called ale, which is not much better, as they get it, for it is barely, if ever, sold unadulterated—if we could only persuade them, and all, to take water, milk, tea, cocoa, coffee, and other non-intoxicating drinks, according to the taste; ginger ale and other mineral waters, with lime juice or raspberry vinegar, very pleasant drinks in summer; and Mr. Wright's unalcoholised unfermented wines;—so diminishing the chances of excess, and giving the digestive ferment their full play in the economy of nutrition of wholesome digestible food, so essential to the nourishment of a sound and healthy body.

"And is it possible," says Dr. A. Clark, "that the teaching of science or the dignity of our profession, any more than the calls of patriotism, humanity, love to our neighbour, morality, and religion, can prove that we are wrong, when we advise those that come into contact with us, as patients or in other capacities, to abstain from the poisonous and pernicious use of alcoholic drinks?" And further, what is health? "We cannot define health, because it is indefinable. Health is that state of our bodies in which the functions of it go on without our notice or observa-

* Read the book, "Babylonian Cups; or, How they Drink in London." National Temperance Publication Depot, 337, Strand.
tion, and in which existence is felt to be a pleasure, in which it is a kind of joy to see, to hear, to touch, and to live. That is health! Now, let me tell you, that is a state that cannot be benefited by alcohol in any degree. Indeed, it is a state which, nine times out of ten, is greatly injured by alcohol. It is a state which often bears alcohol without any sensible injury; but, I repeat to you, it is not one which can in any way be benefited by alcohol. It can bear it sometimes without obvious injury, but be benefited by it, never! And I venture to tell you that there is a certain joy of existence, a sense in which one feels what a pleasure it is to look, for instance, upon green fields and happy birds, to hear pleasant sounds, to touch pleasant hands, to know that life is a satisfaction. This is a state, in my opinion, which is always injured in some way or other by alcohol.

This is a state in which a sort of little discord is produced by it. This is a state in which, sooner or later, the music goes out of tune under its continuous influence. As regards its influence upon our health, our bodies, our complexions: Perfectly good health will, in my opinion, always be injured by even the smallest quantities of alcohol imbibed—involved in the sense of its perfection and loveliness. Perfect health is the loveliest thing in this world. But alcohol will, even in small doses, soon take this feeling away, soon take the bloom off our skins, and will injure the perfection of loveliness of health, mentally, morally, and physically.

WHAT CAN PHYSICIANS DO IN TEMPERANCE WORK? *

By Dr. D. H. Mann, Delhi, N.Y.

The members of the medical profession occupy a position through which they can do much to aid in the ultimate overthrow of the rum traffic. Although they can do no more than any other class of men in securing the immediate adoption of the prohibitory amendment, yet in their capacity of educators they can exert much influence which may eventually hasten the desired result.

God never intended man to use alcohol as a beverage, or He would have given it to us in nature. But we find He has nowhere made such provision, and not one drop can be found as a natural product from any source. It is only obtained from the application of man's evil ingenuity in bringing about vinous fermentation, and by that rotting process producing glucose, or grape sugar, from grains or fruits, from which substance alone can alcohol be procured.

Now, with humiliation I am forced to admit that until in the recent past my noble profession has been to an alarming extent, and is still too much so, guilty of producing many drunkards in the land, directly and indirectly, by the reckless and wholesale manner in which so many of its members have prescribed alcoholic stimulants in their daily practice for all the aches and pains, agues and dances, coughs and colds, inflammations and consumptions, fevers and chills, at the hour of birth, at the time of death, and all intermediate points in life, to induce sleep, and to promote wakefulness, and for all the real and imaginary ills that come under the eyes of our great Esculapian descendants.

Largely has this influence been felt, in common with that from other sources, in laying the foundation for rum drinking, and to-day stands, in-
directly at least, a formidable barrier against the popularising of a prohibitory step to this human sacrifice at the altar of Bacchus. In Heaven's name, I ask, what is the duty of the medical profession in view of the terrible results which have so long followed the unrestrained use of these deceitful and destructive articles of our materia medica?

Let us study the immediate effects and the remote results of the use of intoxicants, not alone in their physiological relations, but in their moral bearings as well, and we shall see that physicians can aid greatly in obtaining a prohibitory check to this direful evil, they can, and should do much to prevent drunkenness in the generations yet unborn, and those just in their infancy, by refraining from prescribing intoxicating drinks as medicines to enceinte women and nursing mothers. All recognise the easy transmission from mothers to children of different traits and peculiarities, yet physicians will thoughtlessly prescribe, and women as thoughtlessly drink, these poisonous beverages, and then wonder why the little one grows up to be a drunkard.

All recognise the necessity, if a woman is enceinte, of keeping from her everything that is disagreeable to the view, lest the child's form or features be unpleasantly marked; only bright scenes and pleasing pictures must the expectant mother look upon. She must be kept from disturbing and irritating scenes, lest the little one prove peevish and unhappy. Every virtue must be cultivated in the mother, and every vice put far from her, that the coming child may be as nearly perfect as possible. And yet when she who is to become a mother complains to her family physician of weakness and various bad feelings, he, thoroughly conscientious in other respects, and a Christian man, perhaps, carelessly recommends a little brandy, a little bourbon, a daily glass of wine, or porter, ale or stout, to be taken with the dinner; and thus the embryo child is fed upon these intoxicants before he is fairly in the world.

If we wish to adopt an infant, do we take the first that is offered, without a question as to its genealogy! No! we wish to know something of those who gave it birth, whether they were respectable people, or whether they were thieves, murderers, or drunkards, for as the parents were so we expect the child, in a measure, to be.

Again, the mother who is nursing her infant tells her physician that her strength is gone, that her milk is poor and insufficient for the nourishment of her babe, and unhesitatingly comes the order that she shall increase its richness and flow by a daily glass of beer, or some other intoxicating beverage. The result often is that babies are never sober from the earliest period of their existence until they are weaned.

The mother's blood and that of the infant are in common, for from that of the mother comes the nourishment and the life properties to that of the nursing child. While the mother is soothed by alcohol, the little one is nursed into its first drunkenness. So the mother learns that when the child is restless she can soothe it for a time by alcoholizing her own blood, and she takes the physician's stimulating prescriptions, increasing in the little one permanently the irritability which she temporarily seeks to allay. Better far to wean the child than to have it drink in with its daily food the germs of drunkenness.

If from any cause the mother is unable to furnish sustenance for her child, how carefully she selects the nurse who is to fill her place; she must be a woman of unblemished character, of sunny disposition, and if it were so much as suspected that she was addicted to the use of intoxicating drinks she would be immediately discarded; yet the conscientious physician will prescribe these drinks to the mother, and the child imbibes a love for them in its first unconscious infancy.

The physician has an unbounded influence in the family, second to that of no other man, not even the pastor; he is admitted at all hours of the day.
and night, on terms of intimacy which can be accorded to him alone; he is generally a participant in many of the family secrets; he is with them in the hours of sickness, in the agony of separation when death calls some loved one away from earth.

Anxiously the waiting friends scan the doctor’s face, as he stands by the bedside of the sick one, if happily they may find there a ray of hope that the dear invalid, lingering between life and death, may be restored to them. Eagerly they obey his every order, looking wistfully for him at the hour of midnight, hoping almost against hope that he may yet think of something which shall stay the flickering light of life and bring health and life to the emaciated form. What an influence must such a man possess over his patients! Let him be very careful how he uses this influence.

God grant that the voice of every physician in the land be raised in the cause of temperance; let us all work to secure the glorious amendment which shall banish all intoxicating drinks from our land, making it a crime to sell the vile poison, which transforms men into brutes, rendering their wives and children homeless. Is it not our duty to turn a short corner, and take into consideration the physiological action of alcohol upon the human system, more thoroughly than we have been wont to do, and guard these prescriptions as carefully as we would those of any other poisons, which, in their places, are valuable adjuncts to our materia medica?

Under the terrible appetite for strong drink kindled at the tap of the cider barrel in our country homes, at the side-boards of our fashionable family circles, at the beer cup in our saloons, and from the thoughtless and ad libitum prescriptions of medical men, how man alone, of all the earth, palls and dwarfs, and sickens; begets children the parti-coloured tissue of whose existence is the woof of one disease woven into the warp of another; transmitting consumption, insanity, and nervous debility, procreating deaf muteness and blindness, and those human fungi, the brainless idiots, and spawns, polished infirmities in human forms, in our large towns and cities, who by money become pillars in Church and State. The medical profession should arouse and take hold of this work. Petitions with the thousands of names of the representatives of this noble profession should be sent to our legislature at every session, until the thrill of their influence be felt throughout this great Empire State. Our profession is numerically strong, and influentially powerful when its efforts are concentrated upon any one point. It has long been a clamour that the clergy did not come to the front as the nature of their profession would seem to demand. Be that so, or be it not, it is evident that the medical profession, with her temples of learning, with her thousands of young men students, and her multitudes of talented physicians, is shamefully behind the work of the day in its practices, teachings, and examples, in this God-given enterprise.

That being so, we should bestir ourselves, and while the world looks to us for scientific reasoning, followed by scientific practice, see to it that we introduce a higher standard of moral and philosophical educational work, that our followers, just starting in this heaven-born career, may have a higher ethical idea of their professional responsibilities, and a thorough knowledge of the subtle poisons they will be called upon to employ as remedial agents, and the constitutional effects they will produce upon the unfortunate afflicted ones, to whom they may administer them.

The medical profession, though it has in its ranks many great natural and cultivated minds, who aim high in their dealings, and are doing much to promote the great temperance reform, can (in the humble opinion of the writer) do herculean work in the way of securing constitutional prohibition, by observing even the feeble suggestions thrown out in this brief paper.

The whole civilised world is now awakening to the importance of the
great evil in the land, and looking eagerly for a cure. Man first learns to drink, or inherits a liking for alcohol from drinking progenitors, then suffers endless penalties for the taste he has acquired, or innocently received as a dower.

Now, let the members of the medical profession ask themselves first, how many have in the last half century, escaped articulo mortis by the direct interposition of alcoholic stimulants under medical advice; then how many of the number have become confirmed drunkards as the ultimate result of unguarded ad libitum prescriptions; then see, if possible, whether the popular, wholesale use of a supposed panacea for all ills, has, in the great aggregate, been productive of a general good, or a national evil. For the loss of how many from among the two millions of human beings who have been slain by rum in our own boasted country of liberty, in that time, are the skirts of our profession bearing the stain. No plague, pestilence, or famine in all that time has swept from the land half so many as the monster rum. Ah! more; there are following all this other evil results lurking behind in the form of poverty, disgrace, shame, and crime, and a vocabulary of diseases, as the direct offspring of this accursed practice of rum drinking.

Is, or is not, the medical profession responsible for some share of this national evil? Let us, then, guard against such fearful responsibilities in the future by waging an open warfare upon this man-killing evil, and never cease our efforts until we shall see engrained into our constitution a prohibitory clause, to banish the accursed stuff from the daily use among the people. How nobly the representatives of divinity are taking hold of the work. How much more might the profession of medicine do, having so largely the guiding of the germs in their own hands, in addition to the general influence they can exert equally with others.

A strong position for the medical fraternity to take in this work, and a praiseworthy one, would be to bond ourselves together in an organised society, to be known not only by our cognomen, but by our works, as the great "Esculapian Temperance Society." So methinks I can see clearly that it is incumbent upon the descendants of that great father of medicine to lead in the work. Come, brothers! to the helm! to the helm, then!

Let us no longer fan the devil's flames, but let us turn upon him and fight him with fire, and let every man who calls himself a healer of human ills, use the influence of his strong position to the end of a total annihilation of this monster fiend.

Like the Roman of old, exclaiming, "I am a Roman citizen," when Rome's eagles were perched on her banners of victory, let us be proud to exclaim, "We are American citizens; and proud of the glorious achievements of our sister States in their prohibitory conquests, and do all to assist in bringing about the same glorious results in the grand old Empire State.

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ALCOHOL IN WORKHOUSES.

The following important letter has been addressed to the Medical Officer of the East Preston Union:—"Local Government Board, Whitehall, S.W., 20th May, 1882. Sir, I am directed by the Local Government Board to state that they duly received your letter of the 15th of February last, on the subject of administration of stimulants to the inmates of the Workhouse of the East Preston Union, of which establishment you are the Medical Officer. The Board have considered the representations contained in your letter,
Alcohol in Workhouses.

but feel bound to state that, in their opinion, they do not justify the administration of stimulants in quantities which appear to be excessive when compared with those prescribed in other workhouses. Referring to your remarks on the subject, I am directed to observe that the Board are advised that stimulants are not absolutely necessary by way of medical treatment in the majority of diseases which usually come under medical treatment in workhouses, and that for sustaining failing powers and counteracting disease there are other means than the administration of stimulants, which are, doubtless, as well known to you as to other medical men. The Board, moreover, are informed by their inspector (Dr. Mouat) that in some of the largest workhouses in the kingdom the use of stimulants has of late been practically discontinued or considerably reduced. Under these circumstances the Board must express their disapproval of the course you have adopted, and impress upon you the necessity of confining within reasonable limits your recommendations with regard to the supply of stimulants, The Board trust that this further intimation of their views will prevent its being requisite for them to take any additional steps in this matter.—I am, sir, your obedient servant (signed), J. F. Rotton, Assistant Secretary.—To Thomas H. Willan, Esq., Medical Officer, Littlehampton.

In a letter to the Times (May 31st), Mr. S. D. Fuller, of 85, Inverness Terrace, W., writes:

"Some returns recently issued by the Local Government Board on the expenditure in Metropolitan workhouses and infirmaries have a more than local interest, and with your permission I would quote certain of the figures, in the hope that the questions raised thereby may be deemed worthy of consideration by boards of guardians and their medical staff.

"During the year ended Lady-day, 1881, the expenditure for beer, wine, and spirits, consumed by inmates in each of the metropolitan workhouses belonging respectively to the Unions of St. George's (2), Greenwich, Shoreditch, Camberwell, Wandsworth and Clapham, Whitechapel, and Lambeth, was under £10. In each of the two workhouses belonging to Camberwell there was an average of 379 inmates; £4 was spent at one, £187 at the other, on alcoholic stimulants. For 1,055 people in the Fulham Road Workhouse £7 was spent in beer, £1 in wine and spirits. Less than half that number, or 473 people, in the City of London Workhouse consumed beer to the value of £558, and wine and spirits to the value of £136. These figures have reference to workhouses only.

"As regards the consumption of alcoholic stimulants in many of the metropolitan workhouse infirmaries, the Local Government Board Returns give no definite information. I believe, however, that the following contrast will hold good:—In the St. Marylebone Workhouse and Infirmary the average number of inmates during the year ended Lady-day, 1881, was 2,085, and the cost of beer, wine, and spirits, £1,613. In the St. George's Workhouses and Infirmaries 1,776 inmates consumed £21 worth of alcoholic stimulants.

"May not a doubt be legitimately raised as to whether both these systems can be right?

"The Metropolitan Guardians have an association of their own, at whose meetings they are able to compare their experiences and take counsel of one another. As a guardian, I could wish that our medical officers would in like manner meet together and discuss this question of alcoholic stimulants. It is no longer a theoretical one. Ten years ago alcoholic stimulants were discontinued at Wrexham, and in 1876 information on the results was printed by order of the House of Commons. Three years ago Dr. Webster could report to the St. George's Guardians on the altered moral state, greater physical energy, and improved food assimilation brought about by the withdrawal of alcohol.

"The question, moreover, is not only a medical one. It has its moral
bearing. Is it right that the man who is driven by drink into the workhouse should be supplied with beer? Can the medical officer, consistently with his primary duty to heal the sick man in the workhouse infirmary, show that sick man practically that he can do without alcoholic stimulants, that he can become a strong man without resorting to beer or brandy?

"If guardians have to leave—as they virtually have—the answers to such questions in the hands of their medical officers, they are at least entitled to ask them to take counsel upon them of one another."

The Visiting Committee of the Strand Workhouse have had their attention called to the great quantity of beer, wine, and spirits, consumed in the house. They found that a pint of beer per diem was allowed to many of the inmates for work done. The doctor did not approve of this; but said he understood, when he took office, that this allowance was the wish of the guardians. The committee recommended that the beer be diminished by one-half daily, and that the other allowances be left to the discretion of the surgeon. A gradual reduction in the amount was suggested; but it was stated, in answer, that the men employed in painting and cleansing would not work without beer. The chairman of the committee remarked that, if they refused to work, the master had his remedy. If the master find this beyond his power, we would suggest that he communicate with Mr. Wearne, the medical officer of Helston Workhouse, for advice how to manage this much-needed reform. In 1879 the "drink" consumed in that workhouse cost the ratepayer 12s. 4d.; 1880, 7s. 3d.; 1881, 7s. 2d.; a total for three years of £1 10s. 11d.

We learn from the Sanitary Record that, without cutting off the supplies from those who were previously habitually accustomed to the allowance, Mr. Wearne determined to treat new comers differently; and, while dispensing with alcoholic drinks, he substituted stimulants of a more abiding and sustaining nature, as milk, sugar, sago, cocoa, and corn-flour, in extra quantities. Or, as we gather from the same journal, the Falmouth Workhouse might be appealed to for instruction, where Mr. F. C. Bullimore is the medical officer, and where the drink-bill for the year ending March 25, 1882, only amounted to 9d.—British Medical Journal, June 3.

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Registered or registerable medical practitioners are admitted as members on condition of personal abstinence from all intoxicating liquors as beverages, and payment of an annual subscription of not less than five shillings. Registered medical students who are total abstainers are admitted as Associates on payment of an annual subscription of half-a-crown.

NOTICES.

Members and Associates receive the Medical Temperance Journal free by post.

Members changing their residences are particularly requested to be kind enough to send their new addresses to the Honorary Secretary.

Members will be kind enough to remember that the Annual Subscriptions for the current year, 1882-3, became due on May 1st, 1882.

NEW MEMBERS.

R. C. Corbet, Esq., Orsett. | Dr. Herbertson, New Cumnock.
Dr. Ashworth, Stockport. | Dr. Mokuna, London.

NEW ASSOCIATES.

F. W. Abbott, Esq., Charing Cross Hospital.
H. A. W. Coryn, Esq., Charing Cross Hospital.
A. E. Rook, Esq., Middlesex Hospital.

Enfield, June, 1882.

J. J. RIDGE, M.D., Hon. Sec.

THE ANNUAL GENERAL MEETING.

The Annual General Meeting of this Association was held at the rooms of the Medical Society of London, Chandos Street, Cavendish Square, on Friday, 26th May. Dr. Benjamin Ward Richardson, F.R.S., presided. The annual report was read, as follows, by the hon. sec., Dr. James J. Ridge:—

The twelve months which have elapsed since the last Annual General Meeting of the Association have witnessed a remarkable temperance re-
vival in many parts of the country. New converts are to be numbered by thousands, and evidence is given hereby that the work of scientific and other advocates of the cause in leavening the masses of the people, and spreading information on the subject, has not been in vain. It is, however, as experience has shown, a matter of anxiety as to how these new converts will fare when the day comes, as come it inevitably will, when they shall be seized with their first illness after becoming abstainers, and may have to consult some member of our profession. Too often, alas! in times past, the work has then been completely undone, and the would-be abstainers assured that their illness is due to their total abstinence, and that they must at once abandon it. It is, therefore, very important that the medical profession should be well informed on the subject, and alive to their great responsibility in possessing such a power of promoting or hindering the progress of the nation towards complete sobriety.

These considerations also render the attitude of the profession a matter of greater interest. As far as the membership of our Association is concerned the prospect is hopeful, since our numbers are increasing year by year. On May 1st, 1881, there were 250 members and 16 associates. Since then 20 new members have been enrolled, and 2 associates have become members on obtaining their diplomas; 5 new associates have been enrolled. On the other hand 3 members have been removed by death, namely, S. S. Alford, Esq., Dr. J. Campbell Reid, of Newbiggin-by-the-Sea, and R. P. Roberts, Esq., of Rhyl, all three being men who were highly respected, and hearty workers in the temperance cause. In addition to these losses, 5 members and 5 associates have resigned. Hence the total number of members is now 264, a net gain of 14; and of associates, 13.

After the business of the last Annual General Meeting had been transacted, the late S. S. Alford, Esq., read an excellent paper on "The Practical Treatment of Dipsomania." This gave rise to an animated discussion, which was twice adjourned, and fully sustained on each occasion.

At the November quarterly meeting a paper was read by Dr. Norman Kerr on "The Use of Stimulants in Workhouses."

In February, Dr. J. J. Ridge gave some demonstrations of the effects of alcohol on the nervous system, and Dr. Norman Kerr exhibited several newly-imported foreign non-intoxicating wines.

At the same meeting opportunity was taken of the return from America of Robert Rae, Esq., the respected Secretary of the National Temperance League, to present him, in the name of the Association, with an illuminated address, in recognition of his great services to the Association, and unwearied efforts to promote the spread of total abstinence among medical men.

The Council have the satisfaction of reporting that the investigation into the mortality of the West Derby Union Workhouse, during two months in which the quantity of alcoholics was reduced, was held, as mentioned in last Report; and that the Local Government Board placed in the hands of the Council, through Dr. Richardson, the whole of the returns for them to examine and report upon. A Special Committee of Council was appointed, consisting of Drs. Richardson, Branthwaite, Kerr and Ridge; and, the papers having been referred to an actuary to be analysed, the Committee reported that the returns were incomplete, and therefore unsatisfactory; but that they furnished no evidence whatever that the increase of mortality was in any way connected with the diminished use of alcohol. This report commended itself to the judgment of the Inspector of the Local Government Board, and permission was given to publish it.

It should also be noted that the action taken by Dr. Norman Kerr, in proposing that tickets exclusive of wine should be supplied for the Annual Dinner of the British Medical Association, has had the satisfactory result, that about one-third of those who
were present at the dinner in 1881 purchased non-alcoholic tickets. A similar course has been adopted by the Linnean and other Societies.

The Council would take this opportunity of earnestly urging those members, who are able to make investigations on the action of alcohol, or record their observations or experience of the effects of its use and disuse, to prepare papers, or make communications, for the quarterly meetings, in order that the cause may be more generally promoted. The Honorary Secretary will at any time be glad to receive and read any such papers if the authors should be unable to attend.

The Council also trust that each member will continue to use his influence with his medical friends to increase the number and extend the influence of the Association. There are many new abstainers in the ranks of the profession, and if our numbers could be doubled there can be no doubt that a very important and useful impression would be produced on the minds of medical men and the public, in favour of a clear and definite abstinence from the use of alcoholic liquors as beverages.

**BALANCE SHEET, 1881-82.**

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Examined, compared with Vouchers, and found correct,

WILLIAM J. CORYN, { Auditors,
W. HENRY KESTEVEN,

May 23rd, 1880.

The Report and Balance Sheet were adopted, the officers were re-elected, and a cordial vote of thanks was passed to the Auditors.

The following communication from Dr. Lowe, of Lynn, was read by the Honorary Secretary:—

**A READY TEST FOR IMPURITY IN WATER.**

The "ready test" is merely an adaptation of the well-known Nessler's test for ammonia—free and albuminoid—adapted chiefly for travellers and popular use, as it does not bear being opened and exposed to air and heat without decomposing. Hence the suggestion which I threw out in the *Lancet* last autumn, and which Messrs. Negretti & Zambra have taken up.

I think it is calculated to be of great service in rendering evident the more dangerous kinds of impurity in drinking water. It has always seemed to me that water-drinkers are exposed to greater dangers than other folk, especially when travelling, and that anything which would diminish the risks they incur in this way would be of real service, not only in the cause of health, but that of temperance also, if they can be reckoned two distinct questions, which, I imagine, they cannot. Of course, the present method is not intended to do away with the necessity of analysis, but merely as
indicating those specimens of water which are to be particularly avoided. It is curious to notice with what complacency people will drink water of the composition of which they are quite ignorant, and which may, for aught they know, and often does, possess the most dangerous properties. I wish there had been any additional matter worth embodying in a paper for your Society; but I am sure the members would think me presumptuous in offering them any remarks which have no claim to originality beyond the suggestion as to the mode of use of this particular test.

Mode of using the Test.—Break one of the glass balls by dropping it from a height of a foot into a clean wine-glass. Fill the wine-glass with the water to be tested. The more dangerous kinds of impurity—ammonical products derived from sewage—if present in considerable amount, are at once detected by the production of a yellow colour, or by a flocculent deposit, which becomes yellow or greenish after standing six hours (the glass being covered to exclude dust). Water of this description is unfit for use. If a copious white precipitate forms, or if any cloudiness ensues, the water should be submitted to analysis, and should in no such case be drunk without previous boiling. If the water remains perfectly clear it may be used with safety. Care should be taken that the wine-glass, containing the test and broken glass, be emptied after using.—Negretti & Zambra, London.

ALCOHOL AND POISONOUS EMANATIONS.

The President then made a communication on "The fallacy of employing alcohol during exposure to poisonous emanations."

At the outset of his address the President said he had been naturally interested in this question on account of the numerous letters which came to him at various times bearing upon it. He received communications, he might say, once a month at least, asking in different ways whether in the cases referred to alcohol was not necessary. Sometimes a letter came from some person engaged in the work of cleaning sewers, and sometimes from managers of such works, as well as from surveyors of towns entrusted with the superintendence of similar operations. These would write to ask him whether men so employed did not require, during the time they were at work, a certain amount of brandy or other spirit. He noticed that wine was never mentioned in such instances, nor was rum. It was usually brandy, or, in some cases, whisky. Inquiries came also from another class of men, viz., undertakers. In the present year he had received inquiries from two undertakers, bearing upon this matter. They wanted to know whether it was not necessary that they should take some amount of brandy or whisky when they were exposed to infectious cases; or when they were removing a body that was undergoing decomposition; or when they were placing a body in a coffin, and particularly in cases—as not unfrequently happened in hot weather—where the coffin or shell gave way, and there was some escape of gases. The people who wrote in this way were not always spirit drinkers. The last gentleman who wrote to him asking this question, was himself a master undertaker, and a total abstainer during the greater part of his life, and in fact, in his way, a local advocate of the Temperance cause; but he was still in doubt from the various impressions that he had received from other undertakers, and men whom he employed, whether it was not necessary to take alcohol on urgent occasions. Then he got the same inquiry from nurses who were going to attend in cases of fever, and nurses who were engaged in laying out the dead, or in removing excreta from the sick-rooms, or when under any other circumstances they were exposed to bad odours. He not unfrequently got the same questions put to him by members of the medical profession. Several times in his career medical men had referred to him to ascertain whether, in making post-
mortem examinations, especially where the body had undergone a change, a stimulant was not necessary. The last communication he had was from a medical student, who desired to know whether, in dissection, it was not essential; and whether a youth commencing to dissect might not with advantage take a little brandy or whisky as a stimulant. Now it was really a very important matter to know what should be the precise answer to give to all such inquiries, and he thought it were well that the members of this Association should have a proper understanding on the subject, so that there should be a common action in the advice which they gave under these circumstances.

He would like to consider the circumstances under which this stimulant was called for. He believed that in many—he would even say in by far the greater proportion of—instances the stimulant was called for merely as a habit, or very often as a pretext, but more frequently as a habit. When the duties or labours to which the people named were subjected first came upon them, they were not abstainers; and later on they had got into a decided habit of taking a stimulant for the purpose named, which acted upon the mental constitution. The question, therefore, was put, not for any real consideration of danger which might arise from abstaining, but rather from a fear to break off a habit which had become a part of themselves. In some instances the indulgence was used as a pretext, by those who had left off drinking for a time, for resuming the habit of taking a stimulant. Such was the feebleness of human nature that, after giving up a habit of this kind, every argument was used by persons to show why it should be re-adopted in their particular case, and it seemed as if a pretext were really necessary; but probably those very persons would look upon such a pretext on the part of other people with absolute contempt. In their own case they did not reason, but used the pretext. In other instances a stimulant was taken, or the wish expressed that it should be taken for an assumed desire to prevent faintness or nausea, or both, which came on, it was said, if the stimulant were not taken. He believed, however, that a considerable number of persons—not by any means the majority, but a considerable number—owed to some nervous derangement, or feebleness. They became faint and felt nausea, the nausea either preceding the faintness, or the faintness the nausea, when they undertook tasks of this kind, and in that nervous state they thought it needful to take a stimulant. They said they would not take it under ordinary circumstances; they had an objection to take it; they thought it a bad principle; but they were quite certain in their own minds that unless they did take it they would become faint, or suffer from nausea. In another class of cases it was thought to be wanted to sustain courage and endurance. There were some minds so constituted that they never could face those duties with anything like calmness and coolness—he meant duties in which risk and endurance were involved. It was a very rare thing to go through the work of a year, conducting post-mortem examinations, or inquiries similar to those, without finding among professional men that there were a certain number of them who shrank from such duties, and had done so all their lives. They would tell how, whenever they entered a dissecting-room in early life, they did so with a dread they never quite got over. They would tell that though they had seen many surgical operations, they had always to screw their courage up when an operation began, and that they never entered upon such a duty without feeling a certain degree of shrinking and anxiety, which practice never entirely removed. These took a little stimulant before the operation commenced, and they thought this sustained them, and landed them into the period when the dread that came on at the beginning had passed off. There were others of all classes who took a stimulant for the sake of endurance. They began well at a disagreeable
task, but after a while they got tired of it, and they began to feel a want of strength and power, and a stimulant was called for to sustain them to the end of their task. There was another—a more refined class than all—not a nervous class, but rather what seemed to be a mixture of those classes to whom he had referred, who never got over the disgust for that which was being done. They might not be deficient in courage or endurance; they might never feel any sense of faintness or nausea; they might not be habituated to the use of stimulants; and they might not want a pretext; but they had always a disgust for that which was being carried out. They were very susceptible to disagreeable odours and disagreeable sights, and, irrespective of any sense of fear or deficiency in any other faculty, they simply felt a disgust for that which was going on, and so they took a stimulant under the belief that in some way it deadened this feeling. Generally, they took it pretty freely before they began their work, and during its operation.

That was a fair analysis of classes of cases where the stimulants were called for—habit, pretext, desire to prevent faintness or nausea, or both, sustainment of courage, or endurance of an operation, and removal of sense of disgust for the proceedings, being the reasons assigned. It was often a very difficult thing to decide whether the causes of the objectionable phenomena thus described were physical or mental purely; but he believed in a large number of cases all the danger and difficulty were purely mental. If it were not so—if there were really a physical danger and a physical cause for the phenomena spoken of, then they would see far more suffering than they did see, because a considerable number of persons were subject every day to these dangers. If there were physical causes always at work to produce the phenomena complained of, there would be a great amount of temporary, and, in some cases, of permanent, disease not seen now. He thought the mischiefs complained of were mainly from mental causes, and this was very important to bear in mind; for, if this was the case, then the question of taking stimulants was brought down to one of a mental character, and the whole question of the effects of alcohol upon the mind lay at the bottom of the phenomena complained of, like others which related to the use of alcohol, as, for example, the phenomena men experienced when they were subjected to some great danger, as going into a battle-field, or facing an accident or some serious danger. At the same time, they must not ignore the fact altogether that certain physical agents did produce physical effects under the circumstances named. Sulphuretted hydrogen produced an effect which was no doubt very definite in its character, and affected some natures much more than others, though exposure to the agent was attended, in the end, with tolerance of a very marked kind. In support of this view Dr. Richardson referred to the effect produced upon breathing the atmosphere surrounding the numerous alkali heaps or residues of sulphur undergoing decomposition which are to be found in certain parts of Lancashire. Some heaps gave off a great amount of sulphuretted hydrogen at times. But yet the men engaged about these heaps seemed to get accustomed to it. They usually said that they were nauseated at first, but by-and-by they got accustomed to the work, and ultimately breathed an atmosphere of sulphuretted hydrogen that seemed intolerable. In approaching one of these heaps he was himself once so stricken with the sulphuretted hydrogen that he was obliged to get away from it as quickly as possible, and he felt an intense coldness, combined with nausea, take hold of him, which resulted in vomiting, and it was with the greatest difficulty that he could get back to his hotel. When he arrived there he went immediately to bed; but he was a long time in getting the restoration of full warmth and power, and he was, in fact, not well until the following day. Yet he found the two or three men who were actually working on
this heap were apparently none the worse for it. They said they suffered at the beginning of their career from the sulphuretted hydrogen, but by-and-by they became tolerant of it. It was possible that some ammonia compounds might in a like manner, combined with sulphur, be a cause of nausea and faintness of a physical kind. The exact nature of all volatile substances which came off decomposing matter had not yet been made out. In some cases apparently the hydride of methyl passed off and some ammoniated compounds together with the sulphuretted hydrogen. But they might take all these agents that had been considered injurious in a physical manner. What they had to consider was what they would advise under these various circumstances in respect to alcohol; (a) what they would say as to its use if the mental condition was taken into account alone; (b) if endurance and courage were taken into account alone; (c) if the poisonous action of the agent had to be taken into account. He thought the argument as to the mental condition was the same here as it would be in the case of fright or any other influence which would subject the person for a moment to danger.

If, for a few moments, alcohol quickened the circulation and caused what was called hasty courage, that was, after all, of the most evanescent kind, and he felt sure, both from what he remembered before he was an abstainer, and since, as well as what he had observed in persons who took stimulants, and those who did not, it was best to meet the difficulty straightforward and have nothing to do with alcohol. He felt convinced that the mental attitude was better all through—the will was longer sustained, and that the work, whatever it might be, on which they were engaged, was very much better done, and with greater safety, when no alcohol was taken. He noticed in post-mortem examinations particularly, that those who had taken a little stimulant before and after the operation, were never so exact and precise in the work as those who did not take it. They used their needles and knives and scissors much more rapidly, but with much less certainty than those whose minds were perfectly clear; and therefore they were subject much more to the risks from cuts and other wounds. As to the power of endurance, he would speak very decisively against alcohol. He was quite sure that endurance under all such trials was best sustained without any artificial aid whatever. The wise plan was to take a good meal before being subjected to the task, and to do nothing else, however long they might be about the work, till it was done, or if they must break off, let them do so in order to go into the open air; take another meal, and drink as little as possible; but, above all, have nothing to do with either smoking tobacco or drinking stimulants. In illustrating this point Dr. Richardson related some of his experiences in embalming—a process most difficult and arduous, he said, when the embalmed was undergoing decomposition. On one occasion of a trying nature where he was the principal operator, and engaged for five hours at a stretch, he felt not the sense of fatigue, whereas two friends whom he had to assist him, and who went into the adjoining room to revive themselves with a little brandy-and-water now and then, were completely broken down, from which and other similar experiences he inferred that endurance was better sustained without than with alcohol. With respect to the action of poisoning in such instances as he had referred to, he believed that, again, was lessened by not taking alcohol. Dr. Brinton, over twenty years ago, made an observation before the Medical Society of London which all present on that occasion confirmed. He said, “If I make a post-mortem examination, I notice that there is the odour of the body on the hands some hours afterwards, but what is more surprising, the odour is also conveyed in the excretions from the bowels.” He had noticed that in his own case, but never since he had abstained from alcohol. It seemed as if there was not the same absorption of the poisonous matter into the blood.
when the body was quite free from alcohol as when it was charged with it. He had no doubt that the greater the proportion of alcohol taken into the blood during the exposure to these organic poisons, the greater would be the absorption of those poisons. There was only one possible reason why alcohol should be given—he did not know that it was a good one, but it was plausible—he meant in cases where actual syncope took place; he did not know whether, under these circumstances, they would be justified in giving half an ounce or an ounce of alcohol. He could not precisely say, he thought possibly they might, but beyond that he could not see any necessity for the use of alcohol as a stimulant.

A short discussion took place afterwards, in which Dr. Drysdale, Dr. Townsend (Liverpool), Dr. Norman Kerr, Dr. Paramore, and Dr. Ridge took part, but nothing was elicited from any of these gentlemen beyond an emphatic testimony to the truth of the theory which Dr. Richardson had been propounding.

THE WALTON WORKHOUSE.

Dr. Ridge submitted the following communication, which appeared a few days later in the Times:

"In November, 1880, it was stated in the Times that the medical officer of the Walton Workhouse of the West Derby Union, Liverpool, had reported to the Board of Guardians that the mortality among the sick paupers in the infirmary during the previous two months had been three times as great as usual, and that this was owing to a large reduction in the amount of alcoholic liquors administered. The data on which this opinion was founded not being given in the paragraph referred to, the Council of the British Medical Temperance Association petitioned the Local Government Board, through their president, Dr. Richardson, to institute an inquiry, and suggested several questions to which answers were required before the conclusion could be warranted that the reduction of the total quantity of alcohol consumed had any connection with the increased mortality. The Local Government Board approved of the proposed inquiry, and sent down an inspector to endeavour to obtain the necessary information. Certain returns were made, and these were placed in the hands of the Council to report upon. After careful examination and analysis, it was discovered that, of the whole quantity of alcohol used in the two months (valued at £31 17s. 7d.), a very large proportion had been consumed by cases which ended fatally. It was also found that several of the fatal cases were of such a nature that the absence of alcohol could not have had any relation to the result. The information supplied was found to be very defective on several important points, and quite insufficient to warrant the conclusion that the rate of mortality was either unusual or due to the decreased consumption of alcohol, much less to lend any support to the wide generalisation that without the use of alcohol as a drug the mortality of the sick would be increased. These conclusions were concurred in by the inspector who made the inquiry."

The proceedings then terminated.

BEER-DRINKING AND BRIGHT'S DISEASE.—A New York correspondent of the Cincinnati Inquirer relates a conversation upon this subject with Dr. Montross Palen, who was prominent in the late international convention of physicians in London, wherein, in answer to a question as to whether he thought there was any connection between lager-beer and Bright's disease, the latter said: "The man who habitually drinks beer is sure to have Bright's disease. Beer in large quantities is one of the worst things a man can ruin his stomach and organs with. In Germany, where the students drink a great deal of beer, their kidneys and bladders are always affected."