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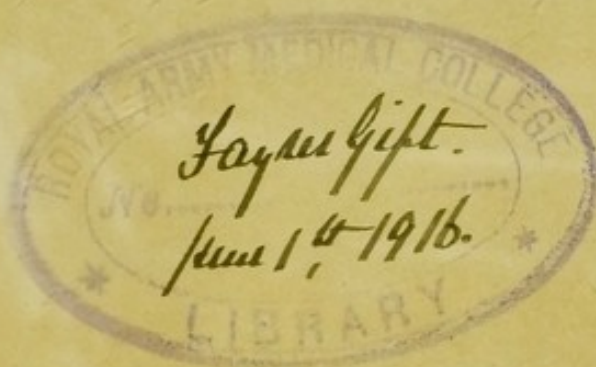
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Sir Joseph Fayrer
With the Author's kind regards.





ON THE BEST MEANS OF PRESERVING
HEALTH IN INDIA, &c.

ALCOHOL.



BY

SURGEON-GENERAL C. R. FRANCIS,

M.B., ETC.,

*Formerly Officiating Principal of, and Officiating Professor of Medicine
in, the Medical College, Calcutta.*

REPRINTED FROM *The Indian Magazine.*

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1889.

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P R E F A C E .

4 The reprint, in pamphlet form, from the *Indian Magazine*, of the articles on alcohol, is intended to furnish tyro temperance workers and the public generally with a cheap compendium of information on the temperance question from *every point of view*. It is believed that, except in more expensive publications, this information has not hitherto, in this country, been brought together into one general sketch. The compendium is, necessarily, simply an outline ; which, however, if approved of in principle, will, it is hoped, be amended and filled in by some more capable worker.

PREFACE

The report is compiled from the various sources of the statistics of the United States, and is intended to furnish the public generally with a cheap and convenient means of obtaining the information on the various questions of the country. It is believed that except in some of the more extensive publications, this information has not hitherto in this country been brought together into one general sketch. The compilation is necessarily simply an outline, which, however, it is hoped, will be of some value to the student and the public.



ALCOHOLIC BEVERAGES;—THEIR NATURE AND EFFECTS.

By Surgeon-General C. R. FRANCIS, M.B., &c.,

*Formerly Officiating Principal of, and Officiating Professor of Medicine in,
the Medical College in Calcutta.*

ALCOHOLIC BEVERAGES.

To attempt to persuade society that a pleasant practice,—that of indulgence in alcoholic beverages;—a practice handed down to us by our ancestors; sanctioned (as affirmed) by our Scriptures; advocated by our medical practitioners; hallowed, as it were, by custom; and, so, come, at last, to be incorporated with our national life;—is, after all, a practice fundamentally erroneous and productive of evils to individuals and to society more numerous and more terrible than the (hitherto supposed) greatest with which the earth has ever been visited, viz. plague, pestilence, and famine;—to attempt to convince communities of this is to undertake an Herculean, and apparently impossible, task. And yet, out of a population of some thirty-six millions, between four and five millions—or say about a ninth part of the whole of the inhabitants of the United Kingdom—are thus convinced. The result of patient and unbiassed scientific investigation by medical men of different countries; the accumulated experience of those who have abandoned the practise of drinking these beverages; combined with the evidence of life assurance societies; have proved beyond all question that, at any rate, they (the beverages) are not, as believed to be by the public generally, essential to health.

The description of an evil is often thought, by those who have no practical acquaintance with it, to be exaggerated. But it is impossible to exaggerate the evil from drink. It is, in truth, like some parts of the ocean, unfathomable. The disasters arising from it, individually and nationally, have been ably pourtrayed, in the *Fortnightly Review* for September 1886, by Cardinal Manning, who writes: “1. Is there any vice in the United Kingdom that slays at least 60,000 or, as others believe and affirm, 120,000 (human beings) every year? 2. Or, that lays the seeds of a whole harvest of diseases of the most fatal

kind and renders all other lighter diseases more acute and perhaps even more fatal in the end? 3. Or, that causes at the least one-third of all the madness confined in our asylums? 4. Or, that prompts directly or indirectly seventy-five per cent. of all crime? 5. Or, that produces an unseen and secret world of all kinds of moral evil and of personal degradation which no police court ever knows and which no human eye can ever reach? 6. Or, that, in the midst of our immense and multiplying wealth, produces, not poverty which is honourable, but pauperism which is a degradation to a civilized people? 7. Or, that ruins men of every class and condition of life, from the highest to the lowest, men of every degree of culture and of education, of every honourable profession, public officials, military and naval officers and men, railway and household servants; and what is worse than all, that ruins women of every class from the most rude to the most refined? 8. Or, that above all other evils is the most potent cause of destruction to the domestic life of all classes? 9. Or, that has already wrecked and is continually wrecking the homes of our agricultural and factory workmen? 10. Or, that has already been found to paralyse the productiveness of our industries in comparison with other countries, especially the United States? 11. Or, that, as we are officially informed, renders our commercial seamen less trustworthy on board ship? 12. Or, that spreads these accumulating evils throughout the British Empire, and is blighting our fairest colonies? 13. Or, that has destroyed and is destroying the indigenous races wheresoever the British Empire is in contact with them, so that from the hem of its garment there goes out, not the virtue of civilization, but of degradation and of death?"* Society may urge that, whilst all this may be very true as the result of excess, it is an insult to suppose that the respectable portion of the community are likely to become the victims of it. Ah! None can foresee to what, in some natures, moderation may lead. The seductive beverage is, to many, a subtle poison to which the noblest and the best may, in due time, succumb.

I propose, in the present and following articles, (1) to show the fallacy of the arguments upon which the people of Great Britain have based their faith in these (alcoholic) beverages; (2) to point out their Circean-like, seductive, nature; and (3) to advocate total abstinence from them on moral, social, and economic grounds.

* As a forcible illustration of the truth of these remarks in so far as they concern India alone, independently of other countries, we have but to recall in evidence the eloquently plaintive utterances of the late Baboo Keshub Chunder Sen, as he dwelt upon the mischief caused to his countrymen from the drinking customs introduced by Europeans into India.

SCIENTIFIC.

The exhilaration, usually caused by wine and other fermented drinks, has obtained for these drinks a world-wide reputation. Taken by the ancients, for the most part, to enliven convivial gatherings and used for libations to their gods—but little medicinal value attached to them in those days,—they came, in course of time, to be credited—(a credit, much enhanced by the discovery in, it is supposed, the eleventh century of their essence, alcohol, which was henceforth known as the elixir of life, and handed down with continuous increase to succeeding generations,)—with such a variety of virtues that the public have, at last, come to regard them as essential in one form or other, in almost every accident, and in the treatment of very many of the diseases, to which the human frame is liable;—a panacea, in short, in nearly every contingency, moral even as well as physical. To create an appetite, and to assist digestion in a weak, or full, stomach; to serve as substantial nutriment; to act, now as an aperient, and, again, as an astringent; to augment the secretions, as that of the gastric fluid, of the milk (in nursing mothers), of the kidneys, and of the skin; to narcotise and to refresh; to stimulate and to soothe; to warm and to cool; to strengthen; to allay thirst; to promote sleep; to act as an antiseptic; and to relieve pain;—as a daily beverage, useful in maintaining health, as well as a necessity in the treatment, and as a prophylactic in the prevention, of disease;—alcoholic drinks continue to be regarded by a large, though happily decreasing, number of medical practitioners, as a *sine quâ non*; the truth being, that both mind and body can be kept in a higher state of efficiency, and disease be better treated, generally speaking, without them. And so in sorrow and in joy;—in national demonstrations of rejoicing or of mourning;—in individual and family happiness or affliction;—alcohol is generally resorted to to intensify the gladness or to mitigate the woe.

Constitution of Alcoholic Drinks.—The essential ingredient in alcoholic liquors—that which gives them their piquant and intoxicating character—is alcohol;—a word of Arabic origin signifying essence.* Whatever the fermented drink—from the mildest home-brewed beer which may contain only three per cent. to the most fiery spirit, as brandy, or rum, or gin, or whiskey, containing probably sixty or seventy or even more—none are without this constituent, which exists also—sometimes as much

* It is, sometimes, erroneously stated that the Arabic words *jin* and *ghoul*—the former meaning a spirit, one of the genii, a demon,—the latter an imaginary sylvan demon supposed to devour men and animals—have reference to alcohol. But, neither etymologically nor socially, in India, have they any connection with this substance; however much its demoniacal character may render it deserving of *both* appellations.

as eight per cent.—in the sweet and, so thought, innocuous wines given to children on festive occasions.*

What is Alcohol?—Alcohol, of which there are at least a hundred varieties and the number is being yearly added to,—the three best known at present are the ethylic, the amylic, and the methylated,—is a light, highly inflammable, liquid, boiling at 172° Fahr.,—the boiling point of water being 212° at the level of the sea,—composed of carbon, oxygen, and hydrogen in varying proportions. Of nitrogen, which is the basis of flesh forming foods, there is none;—a fact, in itself, subversive of the theory that alcoholic beverages are nourishing. (The readiness, or otherwise, with which any of these beverages inflames when thrown on the fire, is a rough measure of the quantity of alcohol contained in it.) Ethylic alcohol, formed during the fermentation of grape juice, or of other saccharine fluids, and used in the preparation of the various tinctures specified in the Pharmacopœia, is the purest. Amylic alcohol is largely obtained from potatoes; hence one of its names, “potato brandy.” This is the worst of the three kinds. Its German name, fusel oil,—fusel signifying bad liquor,—indicates the inferiority of this alcohol. Being cheaper than the ethylic variety, it is largely used to adulterate drinks containing, or supposed to contain, the latter. Choice specimens of Hollands, for example, so much prized by some spirit drinkers, may consist only of gin mixed with potato brandy, and sweetened to taste.

Methylic Alcohol, procured by distillation from certain kinds of wood—hence the name wood spirit,—is principally used in the arts, *e.g.*, in the preparation of varnishes, &c. The relative purity of an alcohol depends upon the amount of carbon that it contains. It has been somewhat hastily inferred that, if the sale of the inferior kinds, especially of the amylic alcohol which contains a comparatively large percentage of carbon, could be prevented, little injury, if any (unless people drank too much), would result from the use of the purer kinds. This is a great mistake. It is quite true that the carbonaceous varieties, partly by contributing more to the deposit within the body of the carbon that ought to be eliminated from it, are specially active in developing and prolonging certain nervous symptoms;—in intensifying, for example, the comatose condition (where this occurs)—and in reducing the temperature of the blood; but every kind of alcohol, even the purest, exercises a degenerating influence upon both mind and body. So-called “good liquor” is, essentially, bad. This remark refers to the use of alcohol as a beverage, not as a medicine.

* The, so-called, teetotal drinks, which, sometimes, contain large quantities of alcohol, are simple frauds.

Alcohol in Nature.—It has been affirmed that, because alcohol has been found in living organisms—in plants and in animals,—it may be regarded as a natural product which man is justified in turning to good account and developing for his own use as a beverage. The quantity, however, of alcohol, hitherto met with in nature, has been infinitesimal—possibly, but for its volatility, proneness to oxidation, and further dissolution, more might have been detected;—and the fact is, therefore, of less interest to the public generally than to the scientific portion of it. The presence of alcohol in nature—traces have, it is said, been found in the air, in water, and in the earth, as well as in the animal and vegetable kingdom—need create no surprise, as the elements, of which saccharine compounds (and these are the source of alcohol) are composed, may be found anywhere, occasionally, in proportions to form sugar; and ferments are, generally, more or less abundant in the atmosphere. Given, in addition, a suitable temperature, and fermentation will readily ensue. A *souppçon* of alcohol may, sometimes, be met with in some saccharine fruits, as in over-ripe plums when still on the tree, and ready to fall, in autumn.

Fermentation.—After a saccharine fluid, as grape, or any other sweet juice, has been exposed to the air at a temperature not above 140° Fahr. nor below 40° Fahr. for a certain time, a visible intestine motion will take place:—the fluid begins to ferment. The sugar is being converted, by chemical disintegration and re-arrangement of its constituents (carbon, oxygen and hydrogen), into a compound known as alcohol. The food is being changed into a medicine. This intestine motion—indicating the fermentation—does not necessarily occur *immediately* on the exposure of the juice to the air, as erroneously supposed by many who maintain the contrary, and who assert that, *therefore*, all wine *must* be fermented;—though, the conditions being favourable, it will probably do so in a few minutes. There are, however, other conditions, besides a suitable temperature, in the absence of which there will be no fermentation. There will be none, for instance, if the juice be *too* saccharine; if it be inspissated; if salycilic acid, sulphurous, or (even) a *weak* solution of carbolic, acid be added to it. Boiling the juice and bottling* it, as is done by Messrs. F. Wright and Mundy of Kensington, will also prevent fermentation. This process of fermentation is set up by a ferment that exists amongst the minute microscopic organisms, which are more or less diffused through the atmosphere;—plentifully in our own climate. There

* “It is believed that tanning the skin bottles, in ancient times, acted as an antiseptic in preserving the contained wine and preventing fermentation.”
—*Wines, Scriptural and Ecclesiastical*, by Dr. N. Kerr.

are three kinds of fermentation: (a) the vinous—that which occurs in grape juice—caused by the *torula*, or *saccharomyces*,* *cerevisiæ*:—(b) the acetous—as when alcoholic liquors (as beer) are turned into vinegar;—this is caused by the *mycoderma aceti*:—and (c) the lactic, in which the *bacterium lactis* turns milk sour. Without the presence of these ferments there would, however suitable the other conditions before mentioned, be no fermentation. Antiseptics and boiling destroy the ferments—this is the object in boiling milk—and bottling excludes them from the liquid. Some atmospheres, scientifically known as antiseptic in consequence, are more or less free from germs and ferments:—hence their value in consumptive, and certain other, cases. The warm and dry parts of Africa, upper India in the hot season, and mountain heights comparatively free from vegetation, are suitable climates, *cæteris paribus*, in such cases on this account.

Fermented Drinks.—As, without sugar, there can be no vinous fermentation, this substance, or whatever contains it (either naturally or by conversion), is used in the manufacture of alcoholic drinks. Thus, from grape juice are prepared (or supposed to be prepared, though many a so-called wine has no such origin,) the various continental wines named from the place of growth of the vines. Certain tree and bush fruits, with the flowers and fruits of certain plants, are used in our own country,—as apples for making cider, pears for making perry, gooseberries, currants, raspberries, elderberries, cowslips, &c., for making the well-known home-made wines bearing those names. Cane juice, or molasses, or sugar refuse, are used for making rum; and various grains, as rye, barley, rice (whose starch, like that of the potato, is, under the influence of warm moisture, converted into sugar), for manufacturing the several spirituous drinks, as whiskey, gin, arrack,† saké;‡ as well as beer, &c. From a species of agave, allied to the aloe, is obtained, in Mexico, the ordinary drink of the country called *pulque*. The juice of the plant also serves the purpose of an aperient; and the fibres of the leaves, after being steeped in water and subsequently beaten, may be made to yield a strong thread. From a millet, which yields

* Other ferments will cause vinous fermentation, notably the *saccharomyces albicans*, which develops “thrush;” but the result is mild, compared with that produced by the *s. cerevisiæ*.

† Rice has been not only perverted from its natural use, as a food, by the Japanese, by the Hindus, and Malays, &c., in the manufacture of arrack, but by the Greeks and Turks, who prepare their *raki* from it; and, in past times, by the Chinese, to whom it yielded the national drink *sumshoo*, the use of which, discouraged by the Buddhists and Confucius, has, in the present day, been superseded by that of opium.

‡ The intoxicating drink of Japan. It contains from 11 to 17 per cent. of alcohol. About 7 per cent. of the rice crops of the country are devoted to the manufacture of *saké*.

also the intoxicating *tallah* of the Abyssinians, is prepared the *pombé** of South Africa. The flower of the *muhoob* (*bassia latifolia*) yields the ordinary native drink of Northern India: and, by exposure to a warm and sufficiently moist atmosphere, the refreshing and innocent juice of the palm becomes converted into an alcoholic and intoxicating beverage. South Americans distil their *chica* from maize; potatoes provide the Russians and Poles with *vodki*; and the Pacific Islanders—some of them—prepare their inebriating *kawa* from the root of the piper methysticum.

From the fact of an intoxicating drink being found indigenous in so many countries, it has been affirmed that such drinks, or their congeners in the shape of tobacco, &c., are, evidently, necessities. But, if this were so, they would be met with in *all* countries; whereas there are some where such drinks have never, till we introduced them, been heard of. The Maoris, in New Zealand, were without them; and so were the inhabitants of some of the islands in the Pacific visited by Captain Cook, who was much struck with the healthy appearance of the inhabitants. Such evidence as this at once refutes the theory of universal necessity. Similarly, it shows the fallacy of the strange doctrine that, as men have for a long period of time been in the habit of using certain substances in the manufacture of intoxicating beverages, these substances were evidently provided for that purpose by Nature. According to this theory, it is right to convert barley into beer. But, when such conversion leads to the consumption of so many million bushels, annually, of a grain that, if not thus perverted, would give bread to the hungry, and for whom, owing to this perversion, bread (*i.e.* flour to make it) has to be largely imported from America, it is clear that, in the manufacture of a luxury which deprives the poorer members of society, to so vast an extent, of the "staff of life," the beneficent design of Nature is frustrated. So, sugar, rice, and other cereals, are given, not for making intoxicating drinks, but for food. Hemp was intended for the manufacture, not of the intoxicating substances, *charas* and *bhang*;† but of ropes: the poppy provides the physician with a valuable addition to the

* When a deputation from the National Temperance League urged upon Cetewayo (the ex-King of the Zulus), during his visit to England, the advisability of checking intemperance in his dominions, he sarcastically replied, "Keep your fiery spirits for yourselves. Don't let them be brought into my country from Natal. Our pombé is a mild drink compared to them." So, the Mexicans complain of importations of strong English beer. Pulque, they say, is comparatively innocuous. Africans and Mexicans, however, drink their native liquors to intoxication on festive occasions.

† *Charas* is a resinous exudation from the flowers of the hemp collected with the dew, and made into an intoxicating drug for smoking. *Bhang* is an intoxicating liquor, prepared from the leaves of the hemp.

medical armamentarium, not, however, to be used by mankind for purposes of sensual gratification. The tari (toddy) palm yields a harmless beverage which men convert into one that poisons. And even the *muhooa*, in whose saccharine flowers Nature has located an abundant supply of sustenance for the insect world, is laid under contribution to supply men with the most abominable alcoholic liquor that ever was distilled.

MALT LIQUOR.—The public, believing that the beer brewed from malt must contain the nourishing properties of the barley which yields the malt, naturally think highly of all malt liquor. They are not aware that, in the process of malting, the food, which, as barley, nourishes the body, is converted into one that only maintains its warmth, and supports respiration; and that even this important property is lost by the further conversion of the grain into a liquid—alcohol—whose tendency is to destroy healthy structures, and to make the body colder. Enormous quantities—between 80 and 90 million bushels—of this valuable grain, which, apart from its richness in phosphoric acid and iron, contains more nutriment than wheat;—which, as barley cake, contributes to form the stalwart frame of the typical Highlanders of Scotland;—which, from time immemorial, has been held in high esteem as a strengthening food—the gladiators of ancient Rome were fed upon it, being called *hordearii* (from *hordeum*, barley,) in consequence;—and which might afford sustenance to so many poor and perishing families;—all this nutriment is annually wasted in obtaining, in a roundabout fashion, the sugar which could be procured more directly and more cheaply, from other sources,—from beetroot, for example. The brewer is well aware that it is the sugar from which the beer is manufactured. He knows that many a cask of beer is quite innocent of any connection with “John Barleycorn.” He sometimes adds a loaf of sugar, known as “saccharina”—(not the new preparation obtained from coal tar)—resulting from the action of sulphuric acid on starch, to increase the fermentation. As a consequence, the fermentation may sometimes continue after the liquor has been received into the stomach, to the detriment of that too frequently overtaxed organ. Herein lies an objection to bottled malt liquor—beer, porter, and stout, that is much “up.” In all malt liquor there is usually *some* sugar that, remaining unaltered, conduces, in those who freely indulge in this kind of alcoholic drink and in whom a tendency thereto exists, to the deposit of fat, and to fatty degeneration, as also, by its conversion into acid, to the development of rheumatism, or gout. The percentage of alcohol, in malt liquor, varies from 3 to 12 or 14 per cent.

Hops are regarded, by the public, as a necessary adjunct to malt liquor, on account of their supposed tonic and preservative

properties;—the truth being that they neither nourish nor preserve, any more than gentian, quassia, or any other bitter. The belief is, however, deep-rooted; and, consequently, the cultivation of the hop plant proceeds, *pari passu*, with the annual growth (and destruction) of the barley. The only true preservative is the alcohol, which, however, itself becomes decomposed if it be exposed to the air.

WINES.—The favourable reputation of fermented wines is even less merited than that of malt liquor, which does contain, as a rule, a certain amount of (saccharine) nutriment; whilst wine is, in most cases, little else than spirit and water, coloured: with certain adjuncts, not deserving of the importance generally attached to them by the public and even—I say it with all respect—by some medical practitioners. These adjuncts consist of various acids, of which the chief are malic, and tartaric, acid—the riper the grape the more, in some cases, of the latter,—and tannin. They exist in grape juice also, but in greater quantity; fermentation tending to lessen it. Some acids, not in the grape juice before fermentation, are there after it, being formed during the process. These acids are carbonic, succinic, and formic, acid. The several acids, both before and after fermentation, act upon the alcohol, and form ether (œnanthic), which has a special influence upon the nervous system,—and aldehyde, which is, simply, a part of the alcohol deprived of its water. The two together—the aldehyde and the ether—cause the much prized bouquet, or aroma, characteristic of some wines. (In some aromatic wines a kind of essential oil is also formed.) Wines, like other alcoholic drinks, become acid if exposed to the air, and, so, lose their aroma. Continental wines are rarely met with, pure, out of their own country. Adulteration and fortification are, in many cases, commenced before they leave it. The Portuguese Government will not allow genuine port to be exported; and this wine, as obtainable in England, is probably the most adulterated of all! Not only are good and inferior wines—the latter preponderating—mixed together, but thickening, firing, and colouring with elderberry, or damson, juice, caramel, or logwood, are resorted to;—the resulting concoction being far removed from the (supposed) full-bodied port prescribed by the physician and prized by the *bon vivant*. At Bordeaux, the better clarets are mixed with those that are inferior, and fortified, for English consumption, with brandy. At Cadiz, the natural wines of Spain are dealt with in a similar way, and; so, lose their rich ethereal flavour. Burgundy, the wine-maker's "child of anxiety," has to be very carefully "doctored" to bring it to the required popular standard. The extent to which the manipulation (!) of wine is sometimes carried, before it reaches the consumer, may be con-

ceived when a bottle of sherry is, occasionally, seen in a London grocer's shop window, labelled 6½d. !* Considerable importance is often attached to the colour of wine, whereas it is of no importance whatever;—being derived either from the original grape, or from various berries, some of which are largely cultivated for the purpose. A dark, or light, colour is given to wines to suit the public taste!

SPIRITS.—*Distillation.*—The volatilization of a liquid in a covered vessel by heat, and its subsequent condensation in a separate vessel by cold, is an art that, known as *distillation*, was doubtless practised by the natives of India, China, and Japan many hundred years ago: for, in each of these countries, an intoxicating (alcoholic) liquor, as *soma* in India, *sumshoo* in China, and *saké* in Japan, has been in existence from very remote times. The credit of the discovery is generally assigned to the Arabians (Moors), who, it has been assumed, were taught by the Chinese. The amount of alcohol in alcoholic drinks reaches its maximum in spirits. Fiery wines are, sometimes, made nearly as strong by fortification. The spirits, in ordinary use in the United Kingdom, are brandy, rum, whiskey, and gin.

Brandy.—Spirits ought, as the name implies, to be the essence, or spirit, of the wine: but genuine French brandy is the only spirit that deserves the name; being distilled from the dregs in sherry casks, or from damaged sherry—an inferior wine will answer the purpose of eliciting the alcohol;—or from grape husks left in the wine-presses. French brandy—the alcohol in it is the pure ethylic variety—is not, as a rule, adulterated with anything injurious. Its special odour is derived from a peculiar ether inherent in the spirit, which, sometimes, causes “nausea, thirst, and pain in the stomach, with apparently arrest of the secretion of bile.”† The colour of French brandy—(the word is a corruption of the German *brant wein*, burnt wine,)—is due to burnt sugar. British brandy is a concoction, containing a modicum of the pure spirit (brandy) mixed with an inferior kind, and watered; or it may be the result of still more varied manipulation!

Rum.—(the name is probably, thinks Dr. B. W. Richardson, quoting Mr. Stanford a philological scholar, derived, by aphæresis, from the last syllable in *saccharum*, sugar),—ordinarily prepared from molasses or refuse sugar, in the West Indies flavoured occasionally with pineapple, is, owing to the frequent presence of fusel oil, an inferior kind of spirit. A purer kind is made, sometimes, from cane juice. It is somewhat remarkable how the nourishment in milk is supposed, by many of the public, to be increased by the addition of rum! “Rum and milk” is, by such persons, regarded as an admirable fortifier against cold,—

* In truth, the rich man's wine, sold at several shillings a bottle, is, intrinsically, worth little more. † Dr. B. W. Richardson's *Cantor Lectures*

the fact being that milk, *warmed*, requires no such extraneous aid, which, indeed, *might* prove to be rather a drawback, instead.

Whiskey—(etymologically* *usigebiatha*, which means in Erse *aqua vitæ*, whence *usquabagh*, then *usige*, and now, in English, whiskey)—as being, generally speaking, free from admixture with other ingredients, ranks in purity with French brandy. The yellow colour of refined whiskey is due to the spirit having been poured into sherry casks, in which the lees of sherry wine have been left. *Aqua vitæ* (whiskey) was made, it is believed, before any other spirit—about 1260—by the monks in Ireland, who obtained the secret from the Moors.

Gin is the most pernicious of the “hot and rebellious liquors” sold in this country. Containing a large proportion of alcohol—as much, often, as 60 per cent., and even more—it is, moreover, largely manipulated (!) to suit the taste of the neighbourhood where it is sold. Oil of bitter almonds (in which, unless specially purified, there is prussic acid), oil of vitriol (sulphuric acid), carraway, juniper (from which last the name—in French *ginevre*, in Latin *juniperus*, in English juniper—gin is derived), cassia, chillies, horseradish, garlic, Canada balsam, Strasburg turpentine, essence of angelica, nitric, and butyric, acid, alum, and carbonate of potash,—all these ingredients, for one purpose or another, are, more or less, employed to render the spirit palatable! For producing creaminess, or pearliness, for making it beaded, sweet, or pungent, for forcing it down, and for bringing it up again if forced too low, these various medicinal agencies, infinitesimal in action after a single libation, but multiplied for evil when the crave for gin has become established, accumulate in the system and disorder it, thus adding to the mischief caused by the spirit itself. Gin, the source of greatest profit to the vendor, empties the pocket and ruins the health, more than any other of these four spirits, of the victims of its fascinating power. With its “pleasing aromatic warming† smack,” it deludes multitudes to their ruin. The diuretic action of gin, sometimes inconsiderately recommended on this account, is due to the juniper, which can be taken more safely in the “*spiritus juniperi*” of the Pharmacopœia—from half to a full teaspoonful in warm water for a dose. Gin was unknown in this country until the return of our soldiers from the war, in the early part of the century, in Flanders; where it was commonly used for preventing attacks of ague.‡

* Dr. B. W. Richardson's *Cantor Lectures*. † *Ibid*.

‡ Sir Samuel Baker states that he cured himself, when in Africa, of a chronic ague by drinking hot whiskey toddy prepared from potatoes;—which an African king, following his example, grew for the same purpose. American trappers, when threatened with a cold, find hot water and pepper an efficacious remedy. It would have been an interesting experiment if Sir S. Baker had tested the efficacy of *cold* whiskey toddy!

VALUE OF ALCOHOL IN THE ARTS.—Alcohol, like ether, is useful for dissolving certain substances which are not soluble in water. Hence its value in the preparation of medicinal tinctures; which, however, are objectionable for those who formerly were drunkards, as also for the Hindus of India, who—the debauched, the lowest castes, and those who have learned to drink from Europeans excepted—object to our tinctures on account of the alcohol with which they are made. (Herein lies the value, for Indian practice, of the tinctures which, prepared with glycerine and ether, are in use at the Temperance Hospital in London.) Alcohol, by appropriating oxygen and, so, preventing the oxidation of substances, is, also, valuable as a preservative;—hence its employment for the preservation of specimens, which it, for the most part, hardens, *e.g.* the brain. The effect of alcohol upon the living brain is not, however, to harden, but to soften, it. The *rationale* of this will be explained later.

PATHOLOGICAL EFFECTS OF ALCOHOL.

It is obvious that, in order to maintain the integrity of the various organs and tissues of which the human body is composed, the blood, by which they are constructed, nourished, and kept in repair, must be pure and wholesome. This purity and wholesomeness will largely depend upon the food and the fluids which feed, and upon the air which purifies, it. The brain and nervous system, the heart, and the lungs, have been—to a certain extent justly—called the tripod of life; which will not, however, continue in a state of efficiency, unless the functions of digestion and respiration be kept in good working order. And not only so. The human machinery, grand in its simplicity, is yet made up of a *variety* of subordinate parts, between which harmony—inter-departmental harmony, so to speak—must be complete.

It must not be supposed that the temperance movement is a mushroom growth of the present generation only, that will, like other (so called) fashionable “crazes,” pass away in due course. On the contrary, during the past two thousand years and upwards—from the days of Aristotle, when that philosopher enunciated his celebrated dictum, *ebrii gignunt ebrios* (drunkards beget drunkards)—it has been steadily (more particularly in later times), though at times haltingly, advancing until now, when, not temperance, *i.e.* moderation in the use of intoxicating beverages, but total abstinence from them, is advocated by an (ever-increasing) army of, in the United Kingdom alone, nearly five million supporters. Excessive indulgence in these drinks, followed in almost every case by a *state of repulsive intoxica-*

tion,* has generally been deprecated, though all too readily condoned in the past, by the better classes of society;—the inebriety being, however, attributed, mainly, to a too free use of spirits: whilst malt liquor and wine, so far from doing any harm, were, it has been contended, essential, if taken in moderation, to health. Dr. R. B. Grindrod was, it is believed, the first medical authority who demonstrated, some fifty years ago, the fallacy of this argument. He pointed out that alcohol, whether in large quantity as found in brandy, rum, whiskey, and gin, &c., or in the mildest home-brewed beer, was alcohol still; and that not only might intoxication, with diseases characteristic of alcoholic indulgence, supervene upon liberal libations of the latter, but that still more serious condition, known as “dipsomania,” or the “drink crave,”—a disorder of the nervous system, which seemingly exhibiting merely a deplorable love of drink in the individual, might yet be the precursor of serious and often incurable diseases of the same system in succeeding generations;—to wit, epilepsy, paralysis, and even insanity itself. The evils of intemperance have indeed been pointed out, during the past four hundred years, by medical practitioners in various countries;—in Russia, in Germany, in Austria, in Holland, in Norway, in Sweden, in France, in America, and in England. But all have laid the blame, principally, upon spirits: and the aim of temperance societies has, for the most part, been to forbid indulgence in *them*. When the present temperance organisation was commenced towards the close of the first half of the present century—there had been no united† effort against intemperance till then—*total* abstinence was not thought of. Moderation was the basis of the movement. In fact, the true character of alcohol was not then understood. Following the lead of Dr. Grindrod, however, other investigators entered the field of enquiry, and in due course fully endorsed his views. About fifteen years ago, it having been found that moderation was quite inadequate to check the progressive tide of intemperance which was flowing over the land, abstinence from every form of intoxicating liquors was inculcated in these societies by precept and example; and “total abstinence,” or “teetotalism,” became, henceforth, the watchword of the advanced temperance reformer. During this

* In order to deter young men from excessive indulgence in intoxicating drinks, the Spartans were in the habit of making their Greek slaves drunk, and then exhibiting them! And Mahomet wisely inculcated total abstinence, as a religious principle, in his followers.

† Individual temperance reformers, advocating even total abstinence, were, indeed, at work;—to wit, Father Mathew, whose success was very great. Though many subsequently fell away, very many kept their pledge till death.

period the physiological action of alcohol upon vegetable and animal life, as also its specific effect upon the various component parts of the body, has been carefully studied by scientific experts,—notably by Drs. B. W. Richardson, Norman Kerr, Lionel Beale, J. Edmonds, J. J. Ridge, and others, in our own country, as well as by able investigators in others. Dr. Beale has shown that alcohol cuts short the life of rapidly-growing cells. And similarly, in Dr. Ridge's experiments with cress, alcohol arrested the growth of vegetable tissue;—thus showing that the practice, which obtains in some communities, of giving spirits to young persons to keep them small is based on a scientific truth. Quite recently, Dr. Richardson placed jelly-fish in a tank of water, through which alcohol, in the proportion of 1 part to 1,000, was diffused. Swimming about, at first, with vigour, they presently collapsed, and sunk to the bottom of the tank,—there remaining stationary and evidently defunct;—each presenting the appearance of a “pearly mass with soft fluffy margins.” Upon the human body alcohol has four distinct deleterious influences, which may act separately, or in combination. (1) It paralyses; (2) narcotises; (3) irritates; (4) abstracts water from the blood and important organs and tissues. By this last action thirst is induced; the supporting, lubricating, and filtering properties of some tissues are deranged; the form of the others is altered; and the elasticity of those in which this quality exists is destroyed.

With these few prefatory remarks, I proceed to show how alcohol affects each organ and structure throughout the body.

One of the most common results of alcoholic indulgence,—a result with which we are all familiar when it appears in the face,—is congestion: *i.e.* the blood-vessels become inordinately distended, and the blood within them flows, if at all, more slowly. Blood-vessels, it must be remembered, are of two principal kinds: *viz.*, the arteries, which, by reason of their muscular structure and elasticity, co-operate with the heart in propelling onward the blood; and the veins, in which the motion of the blood towards, and into, the heart is passive. Between the two is a network of minute (and to the naked eye) invisible vessels, called capillaries, in which the congestion chiefly occurs. There is no inherent propelling power in the veins or in the smaller capillaries, but a system of valves in the former supports the blood and prevents its back-flow. The progress of the blood in these vessels depends upon the *vis a tergo* (the force from behind), *i.e.* upon the combined action of the heart and arteries. If these be weakened in any way, slow circulation in the veins and capillaries, to a greater or less extent, will follow. This will especially be the case in the smaller veins and

capillaries,—those minute vessels which, not apparent to the naked eye in health, now become conspicuously distended. It should be stated that the heart and arteries are under the control of a system of regulating nerves, those in connection with the heart being known as inhibitory, and those in connection with the arteries as vaso-motor. The effect of alcohol is to paralyse these nerves—an effect more pronounced (depending upon individual proclivities) in some parts than in others,—the consequence being that, whilst under its influence, the heart and blood-vessels, deprived for the moment of the accustomed regulating control, become temporarily weakened, and the blood does not flow with its wonted vigour. That is to say, it would not, and the stagnation would be complete, but for the increased activity of the heart. The condition of this organ, when under the influence of alcohol, may be compared to a horse that, mounted by a timid or unskilful rider who does not keep a tight rein over the animal, takes the bit in his mouth and bolts. If the hand be placed over the heart of a person who has exceeded the physiological* quantity of alcohol, and the pulse be felt at the same time, it will be found that both are quickened. This result may not be so marked in persons who have long been accustomed to indulgence in intoxicating beverages,—in “seasoned vessels,” as they are termed: it is more evident in those who are commencing the dangerous practice;† in the extremes of life; and in those with peculiar nervous and susceptible temperaments. On the removal of the alcohol, either by conversion into other substances, or by elimination from the body, the heart and vessels, if healthy, will return to their former condition: but the same train of events will recur on its being again taken. According to the strength and frequency of the potations will be the intensity of the events. If the indulgence be long continued,

* It has been affirmed, as the result of direct experiment, that a limited quantity of alcohol, *i.e.* about $1\frac{1}{2}$ ounces (equal to between three and four glasses of sherry or port, a like quantity of claret or hock, and $1\frac{1}{2}$ pints or tumblers of beer), may be taken with impunity by a healthy adult in twenty-four hours. But so much would be a pathological quantity for many; and such is the seductiveness of alcohol, many more would find themselves unable to avoid exceeding the assigned quantity. Better leave it alone altogether.

† Blushing is a temporary congestion, or rather filling of vessels not usually visible, and having an emotional origin. Congestion, and distention of blood-vessels, may be caused in various ways. A red (congested) nose may, for example, be due to tight-fitting corsets,—not in early life, perhaps; but later, when the vessels have lost their propelling power. As old age approaches, and the tone of the entire system is lessened, congestions sometimes appear naturally in extreme situations; as, in the lower limbs, on the nose, and occasionally (especially if they have been much used) in the eyes. Alcohol favours such congestions.

and especially if life be advanced, the heart, in consequence of these continued demands upon it, will become more enfeebled, and its pulsation accelerated, until at length, the alcoholic influence being continuously maintained, it will come to a standstill,—death being the final event. The accelerated pulsation of the heart is, by the public generally and by many medical practitioners, looked upon as a response to a beneficial spur:—in their estimation alcohol acts as a stimulant. Its paralysing nature, however, is evidenced by such cases as the following. A retired Indian officer of 60, liable to occasional attacks of tropical dysentery from which with careful dieting and total abstinence from alcoholic drinks he always soon recovered, was dosed, in his last and fatal illness from the same disorder, with several ounces of brandy, daily. Palpitation of the heart, with spots of congestion in the legs below the knees, were striking, and (to his then medical attendant) unaccountable, symptoms towards the end. There had been no history of previous heart disease nor of heart weakness. The case seems to be typically illustrative of how alcohol may enfeeble the heart, causing palpitation and congestion in a dependent part of the body. It is known that, under ordinary circumstances, the heart, in health, will, during each day and night, perform work equal to lifting a certain weight one foot from the ground. Dr. E. A. Parkes, the much esteemed Professor of Hygiene in the Army Medical School at Netley, made, with Count Wollowicz, a series of experiments to show the effect of alcohol upon the heart. They found that it was enabled, under the influence of this drug in full physiological doses, to lift from 15 to 24 tons extra weight—or some 122 tons altogether—to the same height during the same time. But, there was a season of corresponding debility in the heart, afterwards.

THE HEART.

I have said that, owing to continuous extra exertion, the heart might, at length, come to a standstill. But, meanwhile, it may be undergoing changes in some part of its structure. Its orifices and cavities may become enlarged in consequence of the prolonged strain, or the valves may be stretched and unable to adapt themselves, so as to prevent regurgitation;* or the muscular walls of the ventricles may be thinned, leading to heart-failure and sudden death, as I have seen in the cases of some of those given to alcoholic indulgence in India: or they

* Each orifice in the heart is provided with valves which, closing across the opening, prevent the blood from flowing backwards—from regurgitation. They promote the onward progress of the blood. Alcohol may injure these valves and destroy their symmetry.

(the ventricles*) may be, otherwise, so modified in texture, as to be unable to contract effectually; or degenerative changes may ensue,—the muscular fibres being converted into fat, or fat may be interposed between the fibres. In all such cases the heart becomes more or less embarrassed; but any attempt to bring about a conservative hypertrophy will† be unsuccessful unless the alcohol be given up. In some of these cases, however, the mischief may have advanced too far. Remedies then, including total abstinence, will be useless.

THE BLOOD-VESSELS.—As already stated, the blood-vessels are liable to become dilated and distended under the influence of alcohol;—the more, if the influence be prolonged. The more minute vessels are the first to suffer, but the larger also may become involved, as seen in the varicose veins of those who, addicted to alcoholic excess, stand or sit much. Omnibus drivers, who often remain seated for long periods and who are apt to indulge freely in alcoholic potations, are apt to suffer from ulcerated legs,—congestion being the first step in the diseased process. Sometimes, the slowly flowing—almost stagnant—blood may coagulate in a vessel, which, thenceforth, becomes impervious. Or, there may be a calcareous deposit on the surface of the inner‡ coat,—a “fur,” resembling that so often seen in a tea-kettle: or, the deposit may be atheromatous§, or fatty: or, the vessel affected may become a stony, or bony, tube:—any of these changes causing more or less occlusion, and weakening of the vessel, with some arrest of the circulation;—thus favouring the formation of an aneurism or the occurrence of hæmorrhage. In any case the nourishment of the organ, or tissue, which is, or ought to be, supplied through the affected vessel, is diminished, or altogether cut off. It is in this way the brain is softened in those cases where this condition is found. It is possible that

* The ventricles, of which there are two, are the strong *muscular* cavities. By contracting, which they do powerfully, the blood is driven out of them into its appointed channels. Alcohol tends to thin, and weaken, the ventricles.

† Hypertrophy is derived from two Greek words signifying excessive nourishment. If the heart becomes embarrassed in any way and unable to propel the blood onwards with sufficient force, Nature, by supplying the ventricles with more nourishment, makes them thicker—more muscular—and stronger, by which they are enabled to overcome the difficulty. Alcohol neutralizes the effort to promote hypertrophy.

‡ Arteries are composed of three coats,—an outer fibrous coat, a middle or elastic coat, and an inner serous coat. The first gives strength, the second elasticity, and the third furnishes a smooth surface for the passage of the blood.

§ Atheromatous is derived from a Greek word signifying pap. The deposit, of a somewhat pappy, or fatty, consistence, is the result of degenerative changes within the artery.

the softening, sometimes met with in other organs, may have a similar origin. It is commonly supposed that the brain becomes hardened in those addicted to alcohol, this being the effect of the spirit upon the organ when preserved as a specimen. But, the *modus operandi* of alcohol, in the two cases, is different: in the latter alcohol abstracts the moisture from the brain, which, in consequence, is hardened.

THE BLOOD.—Alcohol is essentially a blood poison: not a single constituent of this fluid escapes.

The Blood Corpuscles, of which there are two kinds—the red and the white,—are important gas carriers. The former absorb, in the lungs, oxygen from the air and convey it to every part of the body. After the oxygen has combined with the carbon, which it meets with everywhere—in the organs and tissues of every description,—causing the combustion required to maintain the heat of the body at a uniform temperature (98° Fahr.), the carbonic acid, thus formed, is conveyed back by the same carriers to the lungs, there to be eliminated in expiration. The importance of these corpuscles may be estimated from the fact of there being 135 in every 1000 parts of the blood, or 175 millions in the whole of it. They float, in seeming myriads, in the centre of the blood-stream, whilst the white corpuscles move more sluggishly at the side. Both are, more or less, circular in form, which is preserved by the moisture (water) which they contain. The effect of alcohol is to absorb the moisture, and, thereby, to destroy the form.* The corpuscles collapse and become oval, or star-like, or truncated, or otherwise irregular in shape, with, occasionally, crenated edges. Sometimes, they run too closely together, adhering in rolls. The effect of these several derangements is seriously to impair the function of the red corpuscles as “vital instruments” of the circulation. Moreover, when several are agglutinated together in masses, they do not readily pass through the minute blood-vessels: and, by impeding the blood-current, they may cause considerable local injury.

The Fibrine, of which there are from 2 to 3 parts in every 1000 parts of the blood, either loses its power of coagulation in consequence of alcohol fixing the water with the fibrine, or, if the spirit extracts the water† determinately, the tendency is to coagulation. One or other of these results will ensue according to the degree in which the water that holds the fibrine in

* Doubts having been thrown upon this fact by some who are authorities as to the pathological action of alcohol, I wrote to Dr. B. W. Richardson, who first announced it; and he very kindly replied that he had seen, what he stated to be the case, under the microscope, and that no one, so far as he was aware, had controverted the statement from his own observation. The point is important.

† Dr. B. W. Richardson.

solution is affected. The blood of those addicted to alcohol is apt to be in a too fluid state, when the power of coagulation becomes diminished, if not altogether lost. This is strikingly seen, in the case of some drunkards, if they happen to cut a finger. Whereas the blood of the savage, or of those who live according to nature, coagulates at once,—forming a slight film upon the surface of the cut, which prevents further bleeding,—in them the blood continues to flow freely and is often arrested with difficulty. It may be well to observe here, for the benefit of practitioners in India, that the venom of some poisonous snakes has the same effect: hence the danger of applying leeches to, or of making incisions in, parts that may have become swollen after a bite.

The Albumen (of which there are 70 parts in 1000 parts of blood) is represented by the various colloidal structures, *e.g.* the arteries and muscles, and, indeed, all the organs in the body, together with the membranes (also colloidal) which envelope and support them. Alcohol causes the investing membrane of an organ—this is strikingly seen in the liver and kidney—to shrink, and contract, in consequence of which the organ becomes compressed, and even, in some cases, condensed; so that circulation through it is impeded, causing a block, as it were, behind with an undue accumulation of blood, to relieve which the watery constituents of this fluid exude, either into the areolar* tissue in which case the exudation, that may be local or general, is called anasarca—the puffiness of the face due to this cause is often seen in cases of granular kidney a similar swelling of the extremities being the result of contracted liver,—or into one of the shut serous cavities of the body, *e.g.* the peritoneum—the largest—which covers the intestines—when it is called dropsy. Strictly speaking, this latter term is applicable to both kinds. Owing to the shrinking and contraction of the interstitial portions of the membranous envelope, the surface of the organ—liver or kidney—loses its smoothness and becomes irregular, presenting an appearance that, occurring in the liver, is called hobnailed—hence the term “hobnailed” or “gin-drinker’s” liver—and, when seen in the kidney, “granular” kidney.

The Salts (normally about 10 parts in 1000 parts of blood) are relatively increased in quantity by the disturbing action of alcohol. There is, then, a tendency to cataract in the crystalline lens of the eye, and to the formation of stone in the bladder.†

* A tissue or web, constituting a cellular framework—hence the term cellular or areolar tissue,—permeates every structure throughout the body, serving as an envelope and a support. The openings (cells) communicate with each other, and into these the alcohol-obstructed fluid exudes;—being called anasarca, derived from two Greek words signifying distributed through the flesh.

† Dr. B. W. Richardson.

Water, in which the other constituents of the blood are held in solution, constitutes more than seven-tenths of the vitalizing stream. At once, as already observed, the vehicle for the conveyance of nutriment to, and for the removal of effete matter from, all parts of the body, it enables every structure to retain its shape and (where required) its pliability, giving form also, and bulk, to the frame. By abstracting some of the water, alcohol, besides causing thirst, in various ways injures one or more of these structures. The value of water in the animal economy cannot be overestimated. It has kept alive men shut up, through an accident, in a mine for days together, when alcohol—had it been available they would, in accordance with the popular belief in its sustaining power, have drunk it in preference—might, probably, have shortened their existence. Unemployed dock labourers have told the benevolent ladies from St. Augustine's at Kilburn, that they could starve for four days, if they had water. And water has enabled those, who for a wager have foolishly abstained from food for a prolonged period, to accomplish their task. Its marvellous utility in the jelly-fish has been referred to in a previous article.

THE SKIN.—The action of alcohol in causing congestion of the skin is familiarly illustrated in the faces of some drivers of public conveyances.* Rubicund cheeks are characteristic of this class of men; and during the earlier years of life—say till 35 or 40—they may look, and be, healthy, having the benefit of fresh air (or at least as fresh as is attainable in a large town like London) throughout the day: but later, after a prolonged course of indulgence in alcohol—(even earlier in some cases),—the elasticity of the smaller arteries that assist in propelling onwards the blood becoming diminished, the blood sluggishly circulates, or even stagnates, and assumes, from imperfect aëration, a dark bluish tint. In confirmed tipplers the face, in warm weather, has a blotched, and in winter a dull leaden, appearance, both of which are characteristic. Sometimes, there is rupture of the smaller extremely dilated vessels, which gives a mottled aspect to the face. It is now that eruptions are apt to appear, acne—popularly known as grog-blossoms—being a common form. Mr. J. Startin, Surgeon to St. John's Hospital for Skin Diseases,

* The redness of face in these men is not altogether due to alcohol. Exposure to wind and weather assists in causing it. And it may occur independently of alcoholic drinks, as sometimes evidenced in the case of abstaining sailors—a less uncommon phenomenon in the present day than in the past! I venture to think that the fact of conductors of omnibuses and of tramcars not as a rule having such red faces as the drivers is due to the former not being so much exposed to the weather. Omnibus and cab drivers suffer considerably, says Dr. Norman Kerr who practises much amongst them, from gout, rheumatic gout, dropsy (doubtless due to liver disease), asthma, &c., owing to the toxic influence of their potations.

has stated that 60 per cent. of the skin affections brought to him for treatment are, directly or indirectly, due to alcohol. Nor, is this surprising when the *modus operandi* of the alcohol is understood. By its injurious action, says Dr. B. W. Richardson, on the colloidal gelatinous structures—the skin is one—the epidermis (scarf skin) is imperfectly thrown off. Dying, it remains scaly upon the surface as dead *débris*; and, owing to deficient vascular and nervous tone in the true skin beneath, is not replaced so quickly as in health. Consequently, it accumulates; fluid also, in some cases, collecting. The protection of the scarf skin being thus partially withdrawn, pain and irritation follow in the surface of the true skin below. When the skin is in this condition, the bites of insects, as mosquitoes and gnats, often lead to troublesome sores, especially during the rainy season, in India. Sufferers from “prickly heat”* in that country would do well to drink as little of anything, even of water, as possible, as all fluids tend to increase the congestion and dilatation of the vessels; and alcoholic drinks do this in a marked degree. But, whilst alcohol has this effect when taken internally, when applied to any part on the surface of the body in the form of an evaporating lotion, it causes the superficial vessels, with which it comes in near contact, to contract, and, so, gives relief. Eau de Cologne acts in this way.

Dyspepsia is a prolific cause of cutaneous eruptions, partly owing to the strong sympathy existing between the mucous membrane and the skin, and partly by the blood being, more or less, impure. In these dyspeptic cases the stomach clearly first requires treatment. Skin affections may, also, be excited, or aggravated, by disorders of the liver, of the kidney, or of the uterus. Spots of congestion (as in the case of the officer before mentioned), resembling purpura, sometimes appear on the skin in dependent situations; *e.g.* the lower extremities. Many of the skin affections, which occur in persons addicted to alcohol, would disappear entirely, or in part at any rate, if the alcohol were given up. Some local treatment, in addition to hygienic measures, may be necessary (as change of air, a sojourn by the sea, and a suitable dietary); but, if the practice of taking alcoholic beverages be continued, no treatment, generally speaking, will avail. Unfortunately, skin affections caused by alcohol are indications of prolonged indulgence in the spirit, which has led to blood-vessels having, only too frequently, irremediably lost their elasticity and become permanently distended.

MUCOUS MEMBRANES.—As is the skin to the surface of the body so is the mucous membrane, which is a form of inner skin,

* Prickly heat, pathologically, is congestion, followed by inflammation, in the perspiratory glands.

within it. At every opening, as the eyes, nostrils, ears, mouth, &c., the outer skin ceases, merging into a membrane, which, being furnished with small glandular bodies that yield a lubricating material known as mucus, is called a mucous membrane. Commencing at the orifices above mentioned, this membrane lines every cavity and tube therewith communicating, ending finally at the termination of the intestinal canal, where, doubling as it were upon itself, it again becomes a true skin. Congestion of the mucous membrane—more in one part than another depending on individual tendencies—is a common result of alcoholic excess. The reddened eye of the tippler, coupled, occasionally,—the symptom may sometimes occur alone,—with fulness in the nose conveying the idea of a “cold”; the congestive form of diarrhoea which, often caused by a “chill,” (though alcohol alone may produce it), is aggravated by the latter,—hence the want of judgment in giving port wine and arrowroot or sago, or hot brandy and water, as a matter of course, in diarrhoea which may be the result of one of a dozen different causes, and, if it be the congestive variety, alcohol will be likely to aggravate the congestion. Those who have suffered from a bronchial cough, and not refrained from alcoholic drinks, will have experienced the increased irritation and inclination to cough (due to congestion) following a libation, especially if it consists of “spirits.” Indulgence in alcoholic beverages exposes the entire mucous membrane of the air-passages, from that lining the nose and mouth to the air-cells of the lungs, to the injurious influences of cold. The greater readiness with which those addicted to alcohol catch cold, or “take a chill,” as compared with abstainers, is becoming a matter of general experience. In view of this effect of alcoholic beverages upon these passages, singers, public speakers, and all whose avocations require that their voices should be in a state of efficiency, would do well to rigidly abstain from them. Alcohol, though exhilarating for the moment, and in many cases enabling the individual to put forth a powerful vocal effort—it is known that Malibran often sang at her best, in response to an *encore*, under the influence of a glass, or more, of porter,—ultimately roughens and weakens the voice; and, in the case of a singer, though perhaps never intoxicated, may yet cut short a promising career, as was painfully illustrated in the instance above quoted. Malibran died at 28, of inflammation of the lungs supervening upon a chill. An egg-flip, made with milk or cream (without wine), lubricates and strengthens the voice, better perhaps than anything. Glycerine lozenges are, also, useful for softening it.

The feeling of warmth experienced at the pit of the stomach after drinking a glass of wine, popularly known as “warming

the cockles of the heart," is due to congestion, assuming an arborescent form, of the mucous membrane at the point upon which the liquor impinges. In confirmed drinkers—in those who daily take much more than the physiological quantity of alcohol—the congestion increases in area and intensity (becoming permanent unless the practice be given up), and causing, in combination with a want of nerve-tone, a variety of dyspeptic symptoms,—as pain, loss of appetite, flatulence, nausea, and, in the worst cases, vomiting. Sometimes patches of intense congestion occur, with rupture of blood-vessels, and effusion of blood in the midst of a generally congested mucous membrane—similar to a condition met with in cases of acute arsenical poisoning. In some cases the mucous membrane is thickened, ropy mucus lying on the surface—in others it is thinned—the stomach itself, particularly in large beer-drinkers, being much dilated. In the experiments made upon the Canadian hunter, Alexis St. Martin,* it was noticed that the extensive congestion of the mucous membrane of the stomach, the drops of grumous blood exuded upon the surface, the aphthous patches, the vitiated gastric fluids mixed with thick ropy mucus, and the collection of muco-purulent matters slightly tinged with blood,—resembling the discharges in some cases of chronic dysentery, conditions which are frequently met in this disease in India,—all passed away after a very few days' abstinence from alcohol. This fact should serve as a warning to those dyspeptics who fly for relief to alcoholic drinks; whilst it is encouraging to those who give them up, if they do so in time. Nature and an appropriate dietary will do more for the dyspeptic than alcohol.

Increased pain in, and discharge from, certain other passages after (perhaps medically forbidden) indulgence in alcoholic drinks are familiar illustrations of the congesting effects of alcohol on mucous membrane. Congestion of this membrane lining the uterus (womb), if not originally caused, is very frequently maintained, in consequence of patients declining to give up their glass of spirits at night, taken in many cases in addition to the wine or beer, or both, of the day. Prescribed originally, it may be, to relieve pain at the monthly period, the prescription only too frequently comes to be taken *daily*, nominally to anticipate it. Some women have a tendency to uterine congestion—a tendency more common, after parturition, in a tropical climate amongst the married and child-bearing. This

* Alexis St. Martin was a Canadian hunter, in whose stomach a hole, which remained permanently open, was made by a rifle bullet. Dr. Beaumont—his medical attendant—availed himself of the opportunity of ascertaining the digestibility of various articles of diet, as also the effect of alcohol upon the stomach.

same condition is also, not unfrequently, an accompaniment of sterility. Our countrywomen in India would, therefore, do well to follow the example of the native females of the country, and abstain altogether. Uterine congestion is not, I believe,—this is one of the points for medical ladies who practise in zenanas to elucidate,—a common disorder with them, any more than is congestion of the liver with the (abstaining) natives generally. Uterine congestion is, in India, apt to supervene upon dysentery, as is the latter sometimes upon the former: and both are intensified and fostered by alcoholic drinks.

BRAIN AND NERVOUS SYSTEMS.

In cases where alcoholic beverages act injuriously upon the body,* some part of the nervous system will be almost sure to suffer; and this independently of the *vaso-motor* nerves, paralysis of which causes the congestion which, in every case, takes place after the most moderate dose of alcohol. From the brain† and spinal cord—the great nerve centres—to the smallest and most distant nerve-fibre and cell, this agent leaves its unpromising mark,—temporary in most cases if the alcohol be given up in time, but permanent and irremediable in others;—resulting, very much according to individual proclivities, in general or local paralysis, epilepsy, insanity, or in one or other of the various forms of nerve disorder. Delirium tremens, dipsomania,‡ insomnia,§ mania, neuralgia (for the relief of which alcohol is frequently given, but which in the end it only tends to aggravate); loss of memory, especially of recent events; anomalous pains, conspicuously in the limbs; with minor, and often at the time inappreciable, forms of nerve derangement;—these are among the common effects of a prolonged course of indulgence in alcoholic beverages. It is a lamentable fact that children born of drinking parents, and remarkable often for a quick intelligence,

* The effect of alcohol upon the mind will be considered later.

† Simple temporary congestion of the cerebral vessels—the basis, if the cause be long-continued, of permanent and irremediable structural changes—is an early result of alcoholic saturation. Dr. B. W. Richardson once saw the eviscerated brain of a drunken man, whose head had been severed from his body by a passing railway train. It was gorged with blood,—the congestion being universal throughout the organ. This is the condition in the brain of those who, overcome by drink, sink into a comatose sleep, never—I have myself known such cases amongst even the *educated classes*—to wake again on earth. In a minor degree, it is the condition in all who go to bed at night under the influence of a “night-cap.”

‡ Dipsomania, derived from two Greek words signifying a craving for drink, is a misnomer, as the drink might be of any kind. If altered at all, the term should be methumania, or a crave for *intoxicants*.

§ During natural sleep, the brain is, comparatively, empty of blood. Alcohol fills it, and, so, is likely to cause sleeplessness. Quantity may cause coma, and a *drunken* sleep.

are peculiarly liable to some form of nerve trouble, epilepsy being the most frequent. Even where no disease is developed in the offspring, immediate or remote, there may be impairment* of nerve function. Thus, there is often a feeling of languor—a disinclination for exertion—without any apparent cause; and, in real illness, the convalescence, in cases of recovery, is slow, owing to a lack of vigour in the recuperative powers of Nature.

There is a form of paralysis, known *par excellence* as “alcoholic paralysis,” in which the nerves at their distal extremities are first affected;—the disease being ushered in by extreme sensitiveness and pain (which are eventually succeeded by numbness and absence of pain) in a particular part on the surface. The latter, often lancinating, sometimes comes with the suddenness of an electric shock. This form of paralysis is said to be comparatively frequent amongst women, and chiefly affects the lower half of the body.

THE MUSCLES.

The muscles of the body—those which act independently of the will, *e.g.* the muscular fibres of the heart, the stomach, the bladder, and the uterus, &c., as well as the voluntary muscles†—are dependent for their vigour on the soundness of the nerves by which they are regulated. Where these are disordered or deficient in tone, there may be muscular weakness, with instability, accompanied, it may be, by structural changes, as thickening, or thinning, or such modification of the natural structure as may interfere with its work. Muscular vigour is best maintained by total abstinence from alcohol, or any other nerve depressant. The sustained muscular strength of

* It is a common belief that malt liquor, “stout” for preference, is necessary for those with weak nerves. There can be no greater mistake. *Alcohol weakens the nerves*, and, as already stated, arrests development. It is in just such cases that the drink crave, moreover, is likely to follow the prescription. The enervating effect of alcoholic indulgence in earlier life is, in some with nervous constitutions, never obliterated. They remain nervous to the last. Their handwriting is not so good in the morning, but it improves as the day advances, when there is more nerve-force throughout the system.

† The direct weakening effect of alcohol upon muscular fibre has been demonstrated, experimentally, by Dr. B. W. Richardson, upon the frog. Several notable instances of muscular vigour being more or less maintained, owing to the non-use of alcohol, have occurred in our army, viz., in the Red River expedition; in the fatiguing journey, in 1804, across the desert to join Sir Ralph Abercrombie on the Nile; in the American War of Independence in 1783; in Africa and New Zealand campaigns; in the celebrated march from Cabul to Candahar; and in the Indian Mutiny of 1857, &c. The marching power of our Indian Sepoys, and the long distances—frequently over 30 miles a day—travelled by native servants when going to their homes on leave, are, doubtless, due to the same cause.

pugilists, oarsmen, pedestrians,* and other athletes, in whose "training dietary" alcohol has formed no part, and of abstaining cyclists, who sometimes perform long journeys with little or no fatigue,—all testify to the value of total abstinence. It is somewhat remarkable that, in muscular failures from alcohol—in paralysis partial or complete,—the motor fibres in nerves supplying voluntary muscles (those which cause motion in a limb or part) are the first to be affected. Though the power of moving or regulating a limb, or part of one, may be impaired, its sensibility, as a rule, will remain intact. (In the face the lower lip first falls.) I have known a tooth-brush, in the hand of a gentleman of splendid physique, but the victim, from excessive indulgence in spirits, of incomplete general paralysis, to be spasmodically jerked to the other end of the room, whilst the gentleman—in full possession of his mental faculties and with undiminished sensation—was, after a fashion, cleaning his teeth. The involuntary muscular movements (startings) which sometimes occur, in tipplers, at the commencement of sleep—evidence of muscular instability—are due to impairment of the functions of the brain or of a nerve-centre. The nervous trembling in the morning, especially conspicuous in the hands, in the dissipated is another illustration of the (temporary) unsteadiness of the motor nerve-fibres.

THE SENSES.

Contrary to the popular belief that alcohol sharpens the senses, it blunts them. A small wineglassful of claret or champagne, or half that amount of port or sherry—a quantity equal to two drachms of alcohol,—will cause a person, looking at a

* The most remarkable instance, perhaps, on record, of sustained muscular vigour was witnessed a few years ago in this country, when Mr. Edward Payson Weston, an American pedestrian, being then 45 years of age, walked—starting from London—5,000 miles in 100 consecutive days (excepting Sundays and Christmas Day) through some of the provinces at the rate of 50 miles a day; and delivered, at the close of each, in the town where he stopped for the night, an address on temperance. Mr. Weston completed his task in the Victoria Coffee Hall,—once the headquarters (in that part of the metropolis) of low-class music and singing, and where intoxicants were sold, but now, under the management of Miss Cons and a committee, who conduct it on total abstinence principles, a model establishment for popular education and evening recreation,—and few of the large concourse of temperance advocates and others, assembled to witness it, will forget the display of unabated energy with which the last mile was walked. Mr. Weston is an abstainer from alcohol and tobacco; and the task was undertaken for no wager nor reward, but purely in the cause of temperance, under the auspices of the Church of England Temperance Society and of two temperance philanthropists, who paid all the expenses. The same task was subsequently undertaken by a non-abstainer, but ultimately abandoned.

mark from a certain distance, to advance a foot, or 9 per cent., nearer, to see it as clearly as he did before taking the alcohol. The retina has been paralysed to that extent.* So with the other senses. The abstaining sentry hears the stealthy footsteps of the midnight marauder, or the approach of an enemy, more readily than his sleepy comrade who has taken a nip of spirits† to keep out the cold. The artisan, who eschews strong drink in every form, manifests a greater delicacy of touch in his work. The tea-taster, who is sometimes required to test the flavour of a score or more of different samples of tea in a forenoon, can do this better by abstaining. And the sense of smell, often valuable in detecting the lurking-place of the germs of infectious disease, is keener and more accurate in the abstainer.

THE STOMACH.

Allusion has already been made to the effect of alcoholic indulgence upon the mucous membrane and muscular tissue of the stomach. In addition, other structures may become disordered by its use, as indicated by various dyspeptic symptoms, viz., loss of appetite, hypochondriasis (low spirits)—a mental condition often associated with some derangement in digestion,—heartburn, waterbrash, nausea and vomiting, the several kinds of pain or uneasiness, as cramp, neuralgia, a sense of heaviness or weight, sharp pain, dull aching pain, flatulence, &c. The conditions giving rise to these symptoms, for all of which alcoholic drinks are, generally speaking, considered so beneficial by the public, are ultimately made worse by resorting to them. They may give relief in the first instance by their deadening influence; but the malady reasserts itself—often with increased vigour—when the influence is over. A longing naturally ensues for a repetition of the relief; and thus, if it be indulged, a crave for the insidious remedy is too frequently established, and the sufferer becomes the victim of dipsomania, without, it may be, losing the original disorder.‡ Even where this unhappy result (dipsomania) does not occur, the *tone* of the stomach is

* *Medical Temperance Journal*, April, 1882, where an interesting account is given of some experiments made Dr. J. Ridge, to show the action of alcohol on the nervous system. He also proved that the sense of touch, and of weight (called the muscular sense), were impaired by the same agent. The unsteadiness and extreme nervousness, often seen in the dissipated on the morning after a night's debauch, (and previously alluded to), are due to debility and irritability of the nervous system. In these cases alcohol, by its deadening influence, soothes this irritability, and is, thus, said by the public to "steady" the nerves.

† Dr. B. W. Richardson has shown, by the audiometer, the paralysing effect of alcohol upon the auditory nerves.

‡ Alcohol is quite unsuited for allaying the distress from incurable disease, as cancer in the stomach or in any other part of the body.

more or less lost, and only recovers itself (*cæteris paribus**) when the alcohol is given up. For *costiveness* these drinks are objectionable, although an erroneous idea prevails amongst many Europeans, especially in India, that beer acts as an aperient.

THE LIVER.

Fortunately for the stomach (which, if the alcohol introduced into it remained longer than it does, might become even more seriously irritated and injured), this ingredient in a beverage, unless an unusually large quantity be ingested, is rapidly conveyed to the liver, which is thus one of the earliest organs to suffer from such indulgence. The primary effect is congestion,† which in tropical countries, under the combined influence of heat and alcohol, is often very considerable,—the organ, in consequence, attaining a large size;—inflammation, ending in abscess, frequently following. *Cirrhosis* of the liver, already referred to as the “hob-nailed” or “gin-drinker’s” liver, is another form of liver disease which is largely due to alcoholic potations. Liver mischief from this cause was, generally speaking, unknown amongst the natives of India prior to the advent of Europeans in that country. Now, unhappily, during the last 50 years, owing to the adoption of our drinking customs, especially by those who have now, more than ever, come under the influence of European civilization, it is not at all uncommon; and many a native, educated and otherwise, has paid the inevitable penalty for conforming to them. The death-rate from alcoholic excesses is yearly increasing amongst the natives in India.

THE KIDNEYS.

The action of alcohol—the same as upon the liver—has already been considered. It frequently lays the foundation of “Bright’s disease.”

THE LUNGS AND RESPIRATORY PASSAGES.

Alcohol, in addition to causing congestion, as before stated, of the mucous membrane lining the air, or respiratory, passages, may produce a like condition of the spongy and elastic connective tissue of the lungs, thus laying the foundation of further irremediable structural changes; amongst which those induced by a form of consumption, known as “alcoholic phthisis,” are very remarkable. The victims of this type of consumption, so far from presenting the emaciated aspect of sufferers from the disease, as usually seen in its advanced stages, look well, as a rule, to within a short period of the end;—drinking freely, and

* That is, when all attendant circumstances are favourable;—age and constitution, for example.

† The “nutmeg liver” is due to this cause.

recognized in society as healthy boon companions. At length a feeling of *malaise*, with perhaps a stitch in the side, is complained of; a cough is heard; expectoration follows; the hitherto unsuspected mischief, which has been insidiously growing, is now rapidly developed; the ordinary symptoms of consumption make their appearance; and the patient's career is quickly closed. Alcoholic phthisis mostly occurs amongst men between the ages of 28 and 50.*

ALLEGED VIRTUES OF ALCOHOL.

It may be well to analyse, in detail, the various virtues ascribed to alcoholic beverages.

Stimulating and Nourishing.—The public at large, as well as many medical practitioners, entertain a deep-rooted belief that alcoholic beverages are stimulating and warming, and, in some forms, even nourishing. When it is seen that they cause the blood to flow more quickly through the vessels, and that the temperature is at first somewhat raised, the inference is not unnatural that they *are* stimulating and warming; but, in truth, the heat is, as it were, rolled out towards the surface, whence it is quickly dissipated by radiation; the body then becoming colder than before, the coldness increasing with repetitions of the beverage. This effect is strikingly seen in the case of persons taken up by the police as “drunk and incapable.” When brought to the police-cell, the question sometimes arises whether the person is drunk or in a state of apoplexy. If it be the latter, the body would be warm, the pulse being full and slow; or, it may be, not, apparently, unnatural: but if it be a case of intoxication, the temperature, as seen by the clinical thermometer, would be lowered, the pulse being, in some cases considerably, quickened. The chilling effect of alcohol is also illustrated in another way. Let two persons, before starting to walk home from a party on a cold night across a bleak common, drink—one a glass of hot grog, the other a cup of hot coffee. Whilst the former will probably feel chilled long before he reaches his destination, the latter will, if at all, decidedly be so in a much less degree. The advocate of hot punch at bedtime for a cold may point triumphantly to its sudorific and curative effect. But, in this case, there has been no exposure, the heat of the body having been retained by the warm bed-clothing. Hot water alone would, however, effect the same object. The accumulated evidence of those who have had experience of the cold in Arctic regions is exceedingly strong as to the injurious action of alcohol; and it puts the warming

* Dr. B. W. Richardson;—to whom the discovery of this form of consumption is due.

effect of genuine heat-producers—as fatty food—in striking contrast with the chilling action of their fictitious (alcoholic) substitutes. The depressing effect of alcohol, which has been known in some cases to extinguish life, upon those who yield in these regions to the strong desire to sleep during exposure is well known.

That alcohol is not a nutritious (flesh-forming)* food is evident from the fact of its containing no nitrogen, which is the essential element in these foods. The fact is becoming recognised in many of our public institutions—in hospitals, lunatic asylums, poor-houses, &c.,—in which milk is taking the place of malt liquor and other alcoholic beverages, to the great advantage of the inmates and of the institutions.

A Digestive.—If taken in large quantities, alcohol coagulates the pepsin in the gastric fluid, as also all albuminous food; and, thus, retards digestion. In small (so-called physiological) doses it *seems* to aid it. In certain weak and irritable states of the stomach, it, for the moment, soothes, and enables the individual to take food which would otherwise be rejected. But, it is safer to avoid any such aid to digestion; as, apart from the risk of a liking for alcohol being established, the stomach may lose much of its tone, and, the gastric fluid being forced, this secretion may deteriorate in quality as well as be diminished in quantity. The digestion, thus, may become more and more enfeebled, followed by various dyspeptic troubles, as fulness, or a sense of weight after eating, flatulence, &c. The cause of the trouble not being realised, more alcohol is taken to relieve it; and, thus, the mischief is intensified. To the natives of India this practice of spurring up a stomach, that is not, at the time, prepared to receive food, with “fire-water,” has always appeared very extraordinary. We should be acting wisely if, instead, we adopted *their* practice of letting the stomach *rest*. If it be really necessary to force the gastric fluid, this can be done, more safely and effectively, by taking a dose of bitters, as gentian or cheretta, with a few drops—say 8 or 10—of dilute hydrochloric acid, a few minutes before each principal meal. For giving tone to the system, the native plan of infusing a few cheretta chips in cold

* The idea, fostered in the past by eminent medical practitioners, that alcohol is a nutritive food has naturally, but unfortunately, taken deep root in the public mind, leading, in some cases, to very disastrous results. A friend of my own, suffering a few years ago from low spirits and loss of appetite, died, after a fortnight's illness, from want of nourishment; though both he and his attendants quite believed that this was being supplied in the effervescing alcoholic drinks, which was the only thing that he would take. “He had nourishing soups, at any rate?” I said, interrogatively. The answer was, “No; but he had plenty of champagne!”

water overnight, and drinking the clear supernatant liquor in the morning, is an excellent one. But want of appetite from fatigue is best treated by rest, which, aided by a little warm soup, will probably remove, in a short time, the sense of fatigue; when the stomach may, with the returning appetite, be prepared to take more substantial nourishment.

Alcohol for Nursing Mothers.—The objection to the use of alcoholic beverages for forcing the secretion of milk is the same as that for increasing the flow of the gastric fluid to promote digestion—viz., subsequent diminution in quantity and deterioration in quality. The object in view is, moreover, best effected by good food and pure water;—witness the number of mothers who are able to nurse, during the usual period, without the aid of alcohol in any form. Water increases the solid constituents of the milk, as well as its quantity. And the alcoholic drinks that contain the least alcohol and the most water, *e.g.* malt liquors, which are ordinarily recommended by the medical faculty and the public to nursing mothers whose milk fails, are those which answer the purpose best. So that, after all, the active agent is the water, not the alcohol! It is a matter of experience that the children of mothers who depend upon alcoholic beverages (of which they often partake too freely) for increasing the flow of milk and maintaining their own strength, are apt to be deficient in vitality, and more liable to fatal attacks of bronchitis and other affections of the respiratory passages.

As an Antispasmodic, Anodyne, Diaphoretic, and Narcotic.—As a relaxant, alcohol is, undoubtedly, useful in relieving spasms, *e.g.* in angina pectoris, and in some forms of neuralgia; but its subsequent action renders it objectionable. For the former, nitrite of amyl, inhaled under medical supervision, or nitro-glycerine, answers better; and for the latter nothing will be permanently effective, as a rule, without general treatment. As an *anodyne*, its habitual use cannot be recommended, on account of the comparative slowness of its action, of the quantity often required to produce the desired effect (which is, moreover, temporary), and of the risk incurred of establishing the drink-crave. For similar reasons it is objectionable as a *narcotic*. The hot water, with which it is usually mixed when given as a *diaphoretic*, would—sweetened or not—answer the purpose much more safely.

Antipyretic (for reducing temperature).—Alcohol is given, in some cases, to reduce high temperature; but other agents are more effective, and safer. It is especially dangerous for this purpose on account of its devitalizing tendencies. The cooling effect of the alcohol may be obtained at too high a price.

For *quenching thirst* and raising the spirits alcoholic drinks

are freely used in tropical countries. But, so far from mitigating the former, alcohol, by subtracting water from the body, aggravates it, thus meriting its name, "fire-water."

As a *diuretic*, alcohol is sometimes recommended in the form of gin; but a risk is incurred of renal congestion and Bright's disease, followed ultimately, it may be, by granular kidney and possible dropsy. As the diuretic property depends upon the contained juniper, this may be taken in the "spirits of juniper" of the pharmacopœia, under medical advice.

As an *astringent*, alcohol, in the form of port wine, combined with arrowroot, or sago, or tapioca, or cornflour, is in high repute for diarrhœa, without any regard to its cause: whether it be eliminative—an effort of nature to throw off what has "disagreed;"—sympathetic, as in brain disease; symptomatic, as in enteric fever; a forerunner of a more virulent form of itself, as in cholera; the knell, so to speak, of the departing spirit, as in phthisis (consumption); irritative, as from retained feculent matter; or congestive, from a chill:—all varieties are treated by this panacea, which, positively hurtful in some varieties, as in the congestive type, is efficacious, if at all, owing to the tannin in the port, and the lubricating qualities of the farinaceous additions. (In some, who are not accustomed to its use, alcohol will often *cause* diarrhœa.) Port-wine gargles also largely owe their efficacy to tannin.

As a *rubefacient*, when rubbed, for example, upon the unbroken skin in any part to promote the circulation in torpid or congested blood-vessels, as after a contusion (bruise), or in chronic rheumatism, or coldness of the surface, alcohol is often useful. Brandy and salt were in fashion some thirty years ago for these purposes, and the combination was a good one; but the salt is now seldom added to the spirit. As alcohol, like ether, evaporates rapidly, thus causing cold, it is serviceable in evaporating cooling lotions as a *refrigerator*.

As an *antiseptic*, the general belief is very strong that alcohol destroys all the lower forms of animal life: hence, brandy or whisky are frequently added to suspected water. Large quantities of the spirit might have this effect, but small doses—such as are usually added—would rather promote the development of some forms. This is, apparently, inconsistent with the fact that, even in very minute doses, alcohol arrests the growth of cell-life. There are, however, two kinds of protoplasm,—constructive and destructive. The growing cells and tissue of the former are constructive, the bacteria of the latter* (as in impure water) are destructive. Alcohol destroys the former,

* See *Medical Temperance Journal*, July, 1887: "Experiments on Alcohol as a Septic Agent." By Dr. J. Ridge.

but the latter flourish in it.* A safer plan is, after adding a few drops of Condry's fluid, to boil and filter suspected water. It is still a common belief amongst many Europeans in India, as elsewhere, that alcoholic beverages—as hot grog or a bottle of sparkling malt liquor—are good preventives against the influence of malaria. Taken alone for this purpose, alcohol, on the contrary, rather favours it. Taken with food, however, it often gets the credit of being a preventive, when this is really due to the nourishment.

DOES ALCOHOL FATTEN?

The practice, adopted in some parts of the country, of feeding calves and other animals upon a diet of barley and gin to make them fat, seems inconsistent with that of giving gin to young persons to keep them small. But there is really no inconsistency. An accumulation of fat may be concurrent with an arrest of growth. By interfering with the normal processes of nature, alcohol lessens the elimination of what helps to form fat: viz., of carbon, which, combined with oxygen to form carbonic acid, is removed from the body through the lungs. Consequently, fat is apt to accumulate within and around the several organs and tissues—some portions of these being, moreover, converted into fat, by which their efficiency becomes greatly impaired.† They, therefore, who have a tendency to obesity should avoid alcohol, which thus indirectly tends to fatten. Malt liquor, and alcoholic drinks saturated with sugar, tend to fatten by reason of this ingredient—the sugar.

MORTALITY FROM ALCOHOL.

It is calculated that, whilst 40,500 persons die annually from their own intemperance, 79,500 more succumb from accident, violence, poverty, or disease, arising from the intemperance of others; making a total of 120,000 deaths each year from alcoholic drinks. But these are very far from all. Many a death, recorded, out of respect for the feelings of bereaved relatives, as the result of the immediate disease from which the person died, is in reality due to the alcohol, which either led to, or intensified, the disease. Alcohol, where it does not absolutely originate, assists in developing morbid action, as well as various

* See the article by Dr. J. Ridge, "Experiments on alcohol as a septic agent," in the *Medical Temperance Journal* for July, 1887.

† Many cases of sudden death, for which there is no apparent cause, are due to fatty degeneration of the heart; and alcohol tends to promote this degeneration.

abnormal conditions, which not only produce discomfort, but which, unless the alcohol, which is the unrecognised cause of them, be discontinued, may be the foundation of future serious and, sometimes, incurable disorder. The influence of alcohol in determining the *issue* of disease is seen in fevers, cholera, dysentery, snake-bite, &c., where recovery largely depends upon the recuperative powers of nature—whether they be unimpaired or not. Even where there is no actual disease, persons who have been addicted to alcoholic beverages may become, mentally or physically, wrecks of their former selves.

The extent of the mortality, and of the mischief, due to alcohol, though brought to the notice of the public and of Government for quite half a century, has never, till lately, been realized by either. In 1839, Mr. Wakley, coroner for Middlesex, stated that 1,000 of the inquests, annually held by him, were due to gin! From the returns of the registrar-general it is seen how alcohol causes a high death-rate amongst all classes that consume it too freely. Publicans, innkeepers, attendants at liquor shops of every description—all who have to do with the sale of alcoholic drinks—show a very high rate of mortality. For every 100 persons engaged in other occupations, who die, 138 publicans die! Some life assurance societies decline to assure their lives upon any terms whatever; and those that take them require high premiums. Similarly, amongst grocers, a “well-to-do” class who, until they were licensed to sell spirits, did not show a high death-rate, this has, now, become very considerable.

ALCOHOL AND LONGEVITY.

Non-abstainers admit the truth of what is stated as to the injurious effects of alcoholic beverages *if taken to excess*; but, in proof of the strength of their own position, viz., that these beverages, if not beneficial, are, at any rate, harmless provided they be taken in extreme moderation, they advance the familiar ancestral argument. “Look,” say those who can point to them, “at our ancestors on both sides. Grandparents and great-grandparents living hale and hearty (whilst drinking moderately), and in the full possession of all their faculties, up to extreme old age, and then dying of no disease.”* They may point, also, to some notorious drunkards, who have lived to be more than a

* It is now quite understood that alcohol actually *causes* diseases which would never, probably, occur if it were not used. It is a powerful factor, for example, in the form of malt liquor and some kinds of wine, in the production of gout and rheumatism. They therefore, who are predisposed to these disorders, should rigidly abstain from *every* description of ale, beer, porter, stout, and of wine.

hundred. The best answer to the first argument is the evidence, furnished by life assurance societies, especially by the "United Kingdom Temperance and General Provident Institution." From the statistics, which extend over a period of 20 years, it is found that, whilst 97·3, out of every 100 non-abstainers who were expected to die within a given time, actually did die, only 71·1 deaths occurred of the *expected* 100 amongst total abstainers. Total abstinence leads, therefore, to *increased longevity*. (It should be stated that this institution is exceedingly particular in its selection of applicants for life assurance. There are two sections, consisting of abstainers and moderate drinkers; and those in the latter are known to drink with extreme moderation.) Fifty years ago the lives of teetotallers were not considered to be so safe as those of moderate drinkers; but, now, they are known to be safer: and, whereas formerly such lives were either rejected or required to pay a high premium, now they are cordially welcomed by life assurance societies; for, living longer, they increase the financial prosperity of these societies. So, amongst the members of teetotal clubs, as the Rechabites, Sons of Phoenix, and Sons of Temperance, there is less illness; the illnesses are of shorter duration; and there are fewer deaths in a year than in clubs that drink beer, *e.g.* the Foresters and Oddfellows. The "Blue Ribbon Life Accident Industrial Insurance Company"—a most valuable society—bases its operations upon a knowledge of this fact; and, instead of giving a handsome bonus at the end of a term of years, it reduces the premium in the first instance—a great advantage to persons with limited means, especially amongst the working classes. With regard to the fact that even free drinkers sometimes live long, the argument does not tell in favour of alcohol, but of the strength of individual constitutions—for such cases are quite exceptional—which are thus able to resist the pernicious effects of the drink. And, in many of these instances, the drinking has been in "bouts," which are not so injurious as the daily saturation with alcohol. The evidence of our gaols, in which no alcoholic liquors are allowed, is all on the side of total abstinence. There is usually discomfort—sometimes intense—from the sudden withdrawal of the accustomed narcotic, but, as a rule, there is no danger, though the deprivation is carried out without reference to age or sex; and, after a time, prisoners gain weight, and leave the prison in much better health than that in which they were admitted. The theory that one, who has for many years been accustomed to drink freely, cannot be suddenly deprived of his liquor without risk, is not only disproved by prison experience, but also by the fact that sufferers from delirium tremens are not, in the

present day, treated, except in particular cases, with opium and a "hair of the dog that bit them," but with suitable nourishment, and without alcohol, which, in the majority of cases, is altogether and at once withdrawn.

It has been alleged by some eminent medical authorities—not accepted authorities, however, on the subject of alcohol—that drinking nations are superior in physique and progressiveness; but no evidence in support of the statement is adduced: whilst history points to the decadence of several such nations in consequence of their indulgence in drink, and of the effeminate habits which such indulgence is always apt to engender. The strength and energetic activity, inherent in northern and western nations, is due, not to alcohol, but to their geographical position. So far, they have maintained this superiority in spite of their drinking habits. But there are signs of mental and physical decay. Insane asylums, throughout the civilized world, contain numerous victims brought there through drink; and the high state of nervous tension in which a large portion of society lives has tended largely to develop the drink-crave throughout the United Kingdom and in America. The same medical authorities have affirmed that alcohol lessens mortality, and helps to ward off cancer, tubercle, and infectious diseases; but they offer no proofs, and the facts are against them: and we have in evidence, on the other side, the statements of Sir Andrew Clark, Sir Henry Thompson, Sir William Gull, Dr. B. W. Richardson, Dr. Edmunds, Dr. Norman Kerr, Dr. G. Harley, and a host of others.

SOCIAL.

So far I have endeavoured to demonstrate in detail that, whilst abstinence from alcoholic beverages promotes longevity, freedom from disease, and the fullest possible development of mental and physical vigour, indulgence in them (even in extreme moderation in constitutions altogether intolerant of their baneful influence) tends to arrest growth, to foster if not to cause a *variety* of diseases, and to dethrone the intellect which gives to man his proud position as lord of the creation. But this is not all. Weakening moral control, hardening the heart, engendering selfishness and repressing all that is manly and noble in character, alcohol puts out of view the best side of human nature and develops its worst. What a terrible social pest must that be which works evil in communities greater, as was stated a few years ago in the House of Commons by the Prime Minister of the day,* than those caused by war, pestilence, and

* Mr. Gladstone.

famine! Filling our unions with paupers,* our prisons with criminals,† our asylums with lunatics,‡ and our hospitals with sick,§—thus adding to the already heavy burdens of taxpayers, who, themselves for the most part thrifty and sober, are called upon to provide buildings and establishments requisite for the maintenance, custody, and cure of these several classes,—alcohol is the curse of our social life. Judges on the bench, ministers of religion of all denominations including army and naval chaplains and chaplains of prisons, medical practitioners, commanders in the navy and merchant service, military men, masters of unions and relieving officers, employers and supervisors of every kind of labour,—all, in their respective spheres of observation and experience, testify to the now well-ascertained fact that, but for the “drink,” these various institutions would be comparatively empty. That “drink” does fill them is proved by the absence of pauperism and poor-rates, of crime and constables, and by the presence of only a minimum of insanity and sickness in localities where no publichouse, and consequently no “drink,” exists.

Society, isolated in separate grooves and knowing nothing beyond hearsay of the drink-made degradation by which it is well-nigh surrounded, is sceptical as to the truth of the statements of temperance workers who are enthusiastically spending their substance and their lives in the endeavour, by counselling abstinence from the poison, to elevate the masses to a higher state of citizenship and well-being. It supposes that intoxication in public, being no longer fashionable, is limited to the poor tipsy creature occasionally seen reeling along the pavement under the escort (it may be) of a loving wife or of a protecting policeman, and jeered at by a thoughtless following crowd. It is, for the most part, ignorant of the appalling fact that thousands of young

* At a gathering of workhouse masters and relieving officers (in connection with the metropolitan unions), convened in April, 1888, by the National Temperance League, there was a remarkable consensus of opinion that, in the majority of cases, “drink” was the prelude to poverty. One relieving officer stated that, in the course of his service which extended over twenty years, he had been called upon to give relief to only one teetotaler, and HE was blind!

† It is estimated that fully 75 per cent. of our criminal population owes its degradation to “drink.”

‡ Nearly half the insanity in the United Kingdom is due to, or intensified by, the same cause.

§ 70 per cent. of the sickness in our hospitals, and probably much more of that which is treated at home, is brought about by the drinking habits of the people. But for these habits, truly says a medical paper—*The Hospital*,—thousands of doctors would have to join the ranks of the “unemployed.”

girls,* and children by the hundred, are annually taken up "drunk and incapable" in the streets of our large towns; of the numerous infants overlain and smothered by their drunken mothers on Saturday night; of the murders, manslaughters, suicides, infanticides, adulteries, seductions, divorces from the marriage tie, and a variety of social disturbances,—all largely due to this social pest. Alcohol is no respecter of persons. From among the aristocracy of England, which should constitute a bright and pure halo round the throne, to the rough but kindly costermonger who loves his donkey when sober but half kills him when he is drunk, the devil (in solution) develops the evil proclivities of his unfortunate victims. The charm of a maiden lies in her modesty; that of a mother in her maternity. He destroys it in both. Chastity is wrecked; and the crimes of adultery and seduction are too frequently promoted and perpetrated under the influence of his potent spell. Innocent infants, not lovingly regarded as pledges of hallowed affection, but painfully as evidences of guilt, are rashly sacrificed by outraged mothers on the demon's altar. The husband, affectionate and tender when sober but transformed into a fiend when drunk, murders the wife of his bosom and pays the penalty of his crime on the scaffold. And, so, link by link, the devil constructs his ever-lengthening chain,—society, by its social customs, contributing to the welding. Warming the heart—such is the conventional idea—and giving a spur to generous impulses, alcoholic beverages are naturally popular in society; which, in all good faith and with the best intentions, makes use of them on every possible occasion. From birth to burial every incident of our social life,—commemorative gatherings, the inauguration of fresh undertakings, monetary transactions, &c., &c.,—is flavoured with alcohol. Old friendships are cemented anew and fresh ones initiated by the ever-present and ubiquitous "drink!" We give it to the subordinate employés of society—to railway, cab, and coach drivers, thus risking *our own* necks and the loss of *their* character; to policemen, to postmen, to labourers on our premises, to workmen of every description,—even to doctors on their rounds;—in each case confirming, or originating, a bad habit that, in many cases, may lead to social degradation and a premature death. Pitying—the pity might with better reason come from the other side—and pooh-poohing the so-called asceticism of abstainers as the fad of amiable fanatics, society claps its youth on the back, urging it to enjoy in moderation the good gifts of God, and, by exercising the self-control which is specially diag-

* During the past year 3,000 young girls, and 600 children under ten years of age, were so taken up; and 600 infants were thus smothered,—in London alone.

nostic of a manly character, to display that higher form of temperance which the society of to-day is, rather, disposed to advocate. Generous youth,—in many cases, too, Cassio-like and deficient in moral backbone,—unable or ashamed to say No, yields to the tempter, and, joining the main stream, discovers, when too late, that moderation is not always possible, and that he cannot stop when he would. The stronger willed, with greater power of self-control, has but scant sympathy with the Christopher Slys,—too many of them of its own creation. The cruelty of the temptation, treated often as a joke by the unthinking, may be only realised in the years to come when the drink crave, in due course developed in the predisposed—(who can diagnose these in the first instance?)—shall have carried the victim to his grave, and plunged his family into mourning.* Well may the teetotaller, who has *felt* the value of total abstinence, endeavour to inculcate the safer principle,—“Touch not the cup.” Society responds: “All this may be true enough of wine and spirits, but beer can hurt no one!” Fallacious and pernicious doctrine! Ask the medical practitioners amongst the beer-drinking communities in Germany. Note the prostrating effect of a sudden illness or accident in an English drayman saturated with beer, ale, or porter. Enquire of the gouty or rheumatic what malt liquor, and abstinence from it, does for them. A single glass at dinner and another at supper may indeed, *apparently*, hurt no one; but it is the thin end of the wedge, and it *may*, as indeed it often *does*, create an appetite for more of itself, or for something stronger of its kind. Go to India and hear how beer is there considered by Europeans a necessity. There, beer, not sleep, is looked upon as “tired nature’s sweet restorer.” But, how many have, in the past, succumbed early to beer-drinking in that enervating climate! And how many now, as the result of wiser habits and of abstinence from *every* kind of alcoholic beverages, live to a good old age, either migrating to the hills or returning to pass a long evening of life in their own country! Alcohol has been designated by an eminent London physician as “the enemy of the race,” and by a lamented son of royalty as the only enemy England (and, I would add, India) has to fear. A question, not confined to England, has arisen as to whether the race is degenerating. A state of extreme nervous tension, leading in many cases to the drink crave, is being developed in the United Kingdom and in America. Continental nations are taking the alarm. Switzerland re-

* A few years ago, the announcement of a young man found drowned, without any clue to his identity, led to enquiries from *two hundred* persons who, for some time past, had lost sight of a relative—in some cases a son, in others a nephew or cousin—who had given way to drink!

cently convened an International Congress to study the question. A Government enquiry has been instituted in France. Austria, despotic yet paternal, has reported through its Minister of War that there is an alarming deterioration in the physique of young men enrolled for military service, owing to the spread of spirit-drinking amongst the humbler classes. And the Director-General of the Army Medical Department of England has called attention to the falling off in physique of the recruits in our own army. He makes no allusion to drink as a possible factor: but of its existence there can be no doubt. Happening to be Assistant Staff Surgeon at the East India Company's Depôt at Warley during the early days of the Mutiny in 1857, it was part of my duty to examine the recruits, of whom many would, soon afterwards, be required for active service in India. Their physique, in the majority of cases, was below the average; but, of these, very many simply wanted regular and sufficient food to develop, as they would in due course, into strong healthy young men. But a large proportion were constitutionally weakly,—not displaying tendencies to any particular form of disease but bearing marks of inherited delicacy, the outcome of a defective nervous organisation. I have not the least doubt that this was largely due to alcoholic indulgence by their progenitors. In the early days of the Roman empire so much importance was attached to female temperance and chastity, that women were rigorously forbidden to touch intoxicating wines. "To this day the ancient law of female abstinence has been fostered in Austria with the happiest results: so that, in the whole kingdom probably, there are not to be found as many female drunkards as exist in an English town. . . . In Rome the primitive temperance and chastity were, in lapse of time, superseded by luxurious indulgences and *intemperance*:" and "fashionable ladies had come to rival men in drinking-orgies."* The first Napoleon said that the greatness of England was due to its mothers. The facility, with which women may now-a-days obtain, at the grocer's (describing them in the account-book as grocery), intoxicating beverages of every description,—not only the simpler home-made wines, as elder, raisin, and cowslip,† wine, &c., which satisfied their female ancestors—similar wines were permitted to the Roman women,—but beer and the strongest spirits, naturally favours the growth of female intemperance, which has indeed during the last twenty-five years, since the license was granted, increased to an alarming extent. Unknown to the public but none the less true, as many medical

* Bible Temperance Commentary.

† Even these are not always obtainable in the present day.

practitioners can abundantly testify, female inebriety, greatly due to this facility, has sapped the happiness of many a home, and is, unquestionably, laying, as the future will show, the foundation of the degeneracy of the race: for, to the healthiness, or otherwise, of the mother may, in the majority of cases, be traced the physical character of the offspring;—to say nothing of the moral influence which such mothers are likely to exercise upon their children. The present era can boast of many useful discoveries, but all pale before that by which it has been demonstrated to man that his mental and bodily health, as well as his social happiness and utility in life, are best without alcoholic drinks.

ECONOMIC, OR COMMERCIAL.

The impoverishing effect of the free and unrestrained consumption of alcoholic beverages is as true of a nation as of individuals. It is self-evident that, by the withdrawal of enormous sums of money from general circulation into the tills of a few individuals, general trade *must* suffer: yet the fact seems scarcely to be recognised by writers on political economy. It is admitted in the case of a thrifty tradesman who, having put by a few pounds to give his family a trip to the seaside, suddenly finds that it is all required to pay for a valuable pane of plate-glass in his shop-window, broken by a careless apprentice. The *glazier* benefits, of course; but others, amongst whom the money would have been expended to prepare for and accomplish the trip, must inevitably suffer.

Conceive upwards of 120 millions of pounds* poured every year into the tills of those who sell these beverages. By so much, deducting some 36 millions which the Government receives out of it for revenue, is the general community impoverished. The working-man who, after receiving his week's wages on Saturday afternoon, instead of going straight home "drops" into one or more of the numerous publichouses which he must pass on his road, and there, in company with other choice (!) companions, boozes the hours away in stupefying beer or in maddening "spirits" till midnight,—this alas! is to many the acme of enjoyment,—will have but little left to provide the necessary food and clothing for his wife and children. Think

* It is, unhappily, true that, in the past, the amount of the national drink bill has been a measure of the national prosperity. A sad truth,—that a nation's enjoyment consists of "drink"! But, it is a hopeful sign of temperance progress that, during the last decade, there should have been a reduction, in the amount of alcoholic beverages consumed by the people, to the extent of 26 millions. Ten years ago the bill was 146 millions. This is certainly not altogether due to commercial depression.

of the multiplied waste of time and money going on *daily*—it reaches its maximum on Saturdays—in thousands of public-houses throughout the United Kingdom! It is easy to calculate the actual loss to trade in money, but it is less so to estimate the loss to the nation in “bone and sinew,” in character, in social happiness, and in general deterioration. It would be infinitely less ruinous to throw the money into the ocean. With labour, and in time, the amount might be reproduced. But “drink” paralyses both mental and physical energy, and temporarily, if not permanently, takes away the power of reproduction. It is indulgence in alcoholic beverages—especially in beer (the Englishman’s fetish)—that is enabling America to take the place of England as the workshop of the world; and to supply not only well-made articles at a cheaper rate, but the tools wherewith to manufacture them! Owing to the unthrifty habits of too many of our own working-men, who take two or three days to recover from their Saturday’s debauch, their working power falls behind that of other nations. It is calculated that, in the iron trade, 900 Americans can do the work which it takes 1000 Englishmen to accomplish in the same time. The foreigner, too, can live more economically, and works more continuously and more regularly: *his* labour is therefore cheaper as well, often, as more satisfactory. The depression in trade caused by the “drink” induces many of our most intelligent and most enterprising artisans to emigrate into countries,—notably America,—where their prospects would be less fitful and more cheering.

It has been urged that brewing is a natural industry, giving employment, in conjunction with distilling, to numerous “hands.” As a matter of fact they give it to comparatively few. The entire industry, distilling included, throughout England, Scotland, Ireland, and Wales, gives work to only a million “hands”; whereas a single iron and steel company in Sheffield employs 40,000: and thousands, and hundreds of thousands, find constant occupation in the various manufacturing districts throughout the United Kingdom. The distillation of the national beverage in all Scotland employs only 600,000. The value of a product lies not only in its own usefulness, but in its producing powers. Measured by this standard, alcohol is found not only to be sadly wanting, but lamentably mischievous. It has been calculated by eminent statisticians that, of the 850 millions—the nation’s annual income,—274 millions are lost every year through “drink.”

SCRIPTURAL.

Before suggesting measures for lessening the national temptation to indulge in intoxicating drink, and for eradicating the love of it, I propose to show that the Scriptural argument, upon which so many take their stand in their advocacy of such indulgence, is without any solid foundation. As in the Hebrew Scriptures known as the Old Testament, so in the religious writings of the Hindoos—their Vedas and their Shastras,—the habitual use of intoxicating beverages is not encouraged, as affirmed by many. Professor Max Müller, to whom I applied* for information on the point, very kindly informed me that there is nothing of the kind in the latter. Had it been so, total abstinence from them would not have been included in the doctrines inculcated† by Buddhism. With regard to the Hebrew Scriptures, it is evident that the first translators were not acquainted with the chemistry of fermentation. Believing, as indeed many still do, that, when the juice of the grape burst from its covering, it at once fermented, they presumed, apparently, that all saccharine mixtures did the same; and that, therefore, *yayin*—the original word (from which we derive our “wine”) implying simply grape-juice, whether fermented or not—in every case was a fermented, and therefore an intoxicating, drink; that *shakur*, “related to the word for sugar in all the Indo-Germanic and Semitic languages, and still applied throughout the East from India to Abyssinia to the palm-sap, the zhaggery‡ made from it, to the date-juice and syrup, as well as to sugar and the fermented palm-wine,” and indicating merely sweet drink, meant, in every case, *strong drink*; that *ahsis* (really fruit-juice) was *intoxicating wine*; that *ashishah* (a pressed fruit-cake, probably a cake of raisins,) meant *flavons of wine*; and that *tirosk* (ripe vine fruit), although repeatedly associated with *yitzar* (orchard fruit) and with *dahgan* (corn), simply as a product of the vineyard, implied *strong drink*. Similarly, words with a general meaning were made to have a special one. Thus the Greek *epieikes* (gentleness) was originally translated “moderation” (in drink); *enkrateia* (self-control) has been made to mean “temperance” (in drink); and *sophrone* (soberminded), “sober” (the opposite of intoxication). In the recently-published Revised

* I did so after reading the review, in this *Magazine* for May, 1888, of a pamphlet by Dr. Cust entitled the “Liquor Traffic in India,” &c. Dr. Cust there states that the Sacred Books of the Hindus recognised, and even commended, the use of intoxicants in the early ages.

† So Confucius inculcated the same doctrine for China; whence arose, it is said, the practice of opium smoking and eating,—as being, nationally, less disastrous.

‡ A kind of coarse treacle, inspissated.

Version of the New Testament the real meaning has been given in each case. In the Old Testament also, though the former misleading construction has, in some instances, been unaccountably retained, in others the correct meaning has been given. It would be well if it were made incumbent on all ministers of religion, to whom the public naturally look for information on such points, to study Hebrew when *in statu pupillari*. The existence of unfermented, and therefore unintoxicating, fruit-juice, and the fact of its being used as well in a *solid* as in a liquid form *as wine* (and so called), render it difficult of proof as to which kind of wine, fermented or unfermented*—when sanction and even encouragement to drink it were given—was intended. But granting that, in *every* such case, intoxicating drinks were indicated—an extremely improbable theory as being inconsistent with the beneficent intentions of the Creator and the teaching of Jesus Christ—it must be remembered that the ordinary drinks of the day were comparatively mild. There were varying degrees of strength, but the strongest—the art of distillation being then unknown—were not equal to our spirits.

With progressive civilisation and the discovery of alcohol, (which, though undetected, was of course always present in alcoholic beverages),—it in due time came to be *added* to these beverages to make them more intoxicating—drunkenness was more common; and, at length, attained such a pitch that, after endeavouring in vain to repress it by advocating abstinence from the stronger kinds, temperance reformers felt that the only prospect of success consisted in adopting and advocating the principle of total abstinence from all. It may fairly be assumed that, had the Great Teacher lived in our day, he would have recommended the same thing as a matter of expediency. Even in Scriptural times the pernicious nature of these drinks was

* It is a remarkable fact that the Christian public in our own country do not, speaking generally, believe—such unhappily is the amount of ignorance on the subject—that the pure juice of the grape is wine suitable for the Sacrament of the Lord's Supper. They prefer even the trash made up—nobody knows where—because it contains *SOME fermented liquor*:—the truth being that the wine provided at Christ's last meal with His disciples was simply the fruit of the vine, which in all probability was pure and unfermented grape-juice. At the Jews' Passover, the prototype of this Christian Sacrament, wine fermented and unfermented has been promiscuously used since its institution. Some Jews merely steep crushed raisins in water over-night and expect a blessing upon the use of the fluid thus impregnated quite as much as if it were fresh fermented, or unfermented, grape-juice. Others mix water with the (fermented) wine. The objection on the part of the public to wine that is not fermented places the minister, who may be in favour of unfermented wine, in an awkward position; whilst, in the absence of the latter, a former drunkard, wishing to turn over a new leaf, may, by being compelled to drink again of that which before ensnared him, be led into a final and fatal relapse.

well understood and sometimes taken advantage of, of which more than one notable instance has been recorded. They were forbidden to priests when in the exercise of their holy functions; and kings, who in those days sometimes administered the law, were discouraged, so as to avoid any possible clouding of the mental faculties and a consequent perversion of justice, from partaking of them. The physically strongest men and, we may reasonably assume, men of the highest intelligence, mentioned in Scripture, were those who either voluntarily, or by command, abstained from alcohol in any shape.

It cannot be shown that, in any form of religion, the daily use of alcoholic liquors as a beverage is *recommended*. No Hindoo of caste will, knowingly, touch it, even to save his life! And Mohammed, whilst recognising the nourishment in fruit-juice, strictly forbade the use of the inebriating liquor to be made from it, *under all circumstances*. Christianity, in common with Mahometanism and Hindooism, enjoins the giving of milk or water, in conjunction with bread, to strangers, but not of alcohol. "It may be given *if at all* to one who is at the point of death," says a Hebrew ruler—thus recognising its supposed value as a medicine;—but the inference drawn from the next verse, "Let him (the heavy-hearted) drink and forget his poverty and remember his misery no more," that a distinct command to get drunk is here given, rests upon a one-sided view of the sentence, which might be construed thus:—"Should such drink be given to the afflicted, they will simply drink and forget their own cares and become unconscious of their own misfortunes."*

LEGISLATIVE.

When a civilised Government not only legalises the sale of intoxicating drinks to the public but confers honours upon those who manufacture them, one must not be surprised if, consequently, the public reason that such drinks cannot be unwholesome. The natives of India might even believe, in view of the increased facilities afforded for indulgence in them by the "out-still"† system, that their consumption would please the Government; in fact, that it almost amounted to a "Sirkar ke hookm!"‡ It may be that the Government of India—than which, I confidently affirm, having served under it in almost every capacity possible to a medical officer for upwards of thirty years, that there is none in the world more desirous to promote

* The Temperance Bible Commentary.

† Formerly, liquor (native) was sold, under Government supervision, only in the Suddur (principal) stations. Now, it may be manufactured (distilled) throughout the district; hence the term "out-stills." The credit of bringing this system to public notice is largely due to the Rev. Thomas Evans, Baptist missionary at Monghyr.

‡ Government order.

the welfare of the people—have, for revenue purposes, classed alcohol with opium; from the cultivation of which the imperial exchequer is annually so largely replenished, without, speaking generally, producing the mischievous results attributed by some to its use. A fallacy, however, lies in the comparison. The action of the two drugs is not only different but even antagonistic. Alcohol in excess, sometimes soothing when first swallowed, eventually irritates and inflames, often becoming a source of danger to the community as well as to the individual. Opium in dietetic doses—it is thus taken with positive benefit by thousands of the natives of India—is essentially a soothing agent throughout. In those who indulge in alcohol every organ and tissue in the body is jeopardised, health being frequently undermined, and life, in some cases, brought to a premature close by even its so-called moderate consumption; whereas the careful consumer of opium may live to be fourscore, without a symptom of deterioration in any! I am not, of course, an advocate for the habitual use of opium, any more than of that of alcohol. I merely point out the difference of their action upon the human frame. Opium is a natural, alcohol an artificial, product. The latter is essentially a destroyer, and its use as a daily beverage should be systematically discouraged. The reply of the ex-king* of the Zulus to the deputation from the National Temperance League has already been noted. The urgent appeal to a Christian bishop, of an African ruler† for the deliverance of his people from the pest, is even more earnest and touching, and, to us as a Christian nation, humiliating. He says: “It (your strong drink) has made my people become mad. By God, it has ruined my country. . . .” The vigorous administrator adds that he has issued laws under which any of his people found selling it shall be eaten up,‡ and any found drunk shall be killed. But he begs the Queen of England to prevent its importation into his land. “For God and the prophet’s sake; for God and for the prophet, his messenger’s sake,” he prays for help. The Viceroy of Egypt views, with grief and shame, the increase of public-houses in that country, especially in Cairo, since the advent of the British army of occupation. But he is powerless to do away with them. European traders, protected by agreements between England and Turkey, are ruining the people with cheap intoxicating drinks. A native, who there, as in India, only drinks to get drunk, finds it easy to effect his purpose for 2½d. And so, wherever the flag of England flies protecting the commerce of her sons, free-trade in these liquors

* Cetewayo.

† Maliké, a Mahometan.

‡ Their country overrun and destroyed, or annexed.

is shortly established. Christian missionaries and spirit vendors arrive together. The efforts to raise the natives in the social scale, and to inculcate habits of industry and thrift, are more than neutralised by the demoralising influence of strong drink. The worst passions of human nature being let loose, quarrelling and vice ride roughshod over the gospel of purity and love. Where there was no drink before, we have introduced it; and where it existed in a comparatively mild form, we have supplied a still stronger kind, and intensified the love of it. Little do untravelled Englishmen and Englishwomen know of the extent of the injury we are thus inflicting upon native races in our colonies and dependencies. The moral and physical destruction of humanity follow in our footsteps. The slavery of alcohol, less evident to the general English public than that in human flesh which aroused popular indignation in a previous generation, has at length, chiefly through the efforts of the National Temperance League and the Church of England Temperance Society, been partially appreciated in England. A memorable meeting—one of the most representative and influential ever held on any subject—was convened, three years ago, in Prince's Hall, Piccadilly, under the presidency of the Bishop of London, to hear the evidence of eye-witnesses, and to initiate a crusade against the drink-traffic amongst native races. Non-political, undenominational, but essentially humanitarian, philanthropists and social reformers gathered together on the same platform. Speeches came from the hearts of the speakers, and met with a responsive echo in those of the audience, as evinced by its loud and reiterated plaudits. As an outcome of the gathering, a Committee* has been formed to investigate the question in its legislative, commercial, and social aspects; to elicit and, where necessary, to form public opinion; and to address local authorities at home and abroad, in view to the enactment of more stringent repressive regulations: temperance societies are enlightening the people on this hitherto neglected source of danger to our distant fellow-subjects: and Mr. W. S. Caine, M.P., has, grandly, gone with his wife to India to test for himself the truth of the assertion that native drunkenness has more than doubled itself during the last ten years; to endeavour, by the establishment of temperance organisations, to stem the tide of reckless inebriety which threatens to flood the country; and to extend to native philanthropists, who—born teetotallers—are amazed and pained

* "The United Committee for the Prevention of the Demoralization of Native Races by the Liquor Traffic." Office at 139 Palace Chambers, Bridge Street, Westminster, S.W.

to see it thus threatened, the right-hand of fellowship,* of sympathy, and encouragement. Strong drink will assuredly make short work in tropical countries with the natives, whose comparatively (physically) feeble constitutions are less able to resist its pernicious influence even in extreme moderation:—how much less when taken in the excess, which they, once accustomed to it, prefer! To the introduction of social reforms amongst a community custom is, usually, a formidable barrier; but in India it is, as regards the use of intoxicating liquors, in the reformer's favour. Indigenous drinking, more common in some districts than in others, is confined to the lowest castes amongst the Hindoos, and to the debauched amongst Hindoos and Mahometans. The bulk of the population are abstainers. The argument, that, because the quantity of liquor annually consumed, when distributed amongst the 200 millions of the people, amounts to only something short of a tumbler per head per annum, the nation therefore is proved to be one of *very* "moderate drinkers," does not fairly represent the true state of the case; more than 90 per cent. of the population being, ten years ago at any rate, total abstainers. The few who indulge are no connoisseurs in drink; and they do not take alcoholic beverages for health's sake. The growing grovelling love of intoxicating liquors, taking root in a tropical race, cannot but lead to nerve degeneracy which, transmitted from parent to offspring, *must* finally end in the race's enfeeblement, if not in its extinction,—as seen amongst the Maoris in New Zealand and some Indian tribes in North America. It has been wisely said by Sir William Hunter, in his address before the Society of Arts in London, that, if India is to make headway in all that raises and ennobles humanity, it must be on the lines of total abstinence. Legislation for India, where, without Government sanction, no outside traders can be admitted, is easy; and all well-wishers of that most interesting and important country would rejoice to know that the Sirkar had severed its connection with the liquor traffic. Native liquor will still be sold, of course; but, let it be heavily taxed, and its sale discouraged in every possible way—the number of stills under the Suddur system being largely reduced; "out"-stills altogether abolished; and illicit distillation punished with the utmost possible severity. I am Utopian enough to hope that numbers of our countrymen and countrywomen in India will, in a succeeding generation,—realising the benefits of total abstinence to a tropical people as well as to themselves,—set them the good example of adopting it, and thus, in a measure, undo the

* All communications may be made to Mr. Samuel Smith, M.P., President of the Anglo-Indian Temperance Association. Offices at 2 Storey Gate, London, S.W.

mischievous which has been caused by our social customs of the past and of to-day. Some 15,000 British soldiers in that country are now, thanks to the influence of the Rev. J. G. Gregson (the result of whose untiring labours amongst the European troops there during the past twenty years Sir Frederick Roberts, the present Commander-in-Chief, has said to be equal to the acquisition of two battalions of infantry), demonstrating in their own persons that total abstinence ensures better health, a greater capacity for resisting the depressing effects of the climate, and a conspicuous freedom from crime. If this be so with the European soldier—none but those who have witnessed it can appreciate the weariness of his life in the hot weather in the plains—*a fortiori* should Europeans in a higher station of life, with better surroundings, less exposure, and greater facilities for getting to the hills, find it comparatively easy to abstain. Happily, many do. Officers are co-operating with their men in giving up that which has hitherto been the curse of the British army, a source of terror to the natives, and a reproach to the English nation.* To turn to England, King Edgar limited the number of public-houses—genuine houses of refreshment for the *bonâ fide* traveller—to one for each parish of some 700 persons. To-day, in most of our large towns where drink is freely consumed, there is a liquor-shop to every ten houses, or, say, 50 persons. This is the real cause of the national drunkenness—the enormous amount of temptation thrown in men's way. A working-man, returning home from his day's work, may resist the fascinations of one, two, or even three, of these man-traps;† but his power of resistance ebbs away as the temptation is continuously repeated. He can hardly be expected to pass *a dozen* without succumbing. Repressive laws in abundance—I believe there are more than 400 in existence—have been passed by the Legislature since the first Parliamentary enactment in 1504; but, in the presence of so much licensed temptation, and in the absence of a sound public opinion on the

* I would recommend those, who disbelieve in the drunkenness that formerly prevailed in the British army, to read *Six Months in the Ranks* by a gentleman who, for domestic reasons, enlisted; and who, at the end of six months, purchased his discharge. A few years ago soldiers would spend Christmas-day in getting gloriously (!) drunk, there not being, with the exception of a few non-commissioned officers and the guard, a sober man in the garrison after 5 p.m. Drunkenness is now the exception.

† The establishment in them of goose-clubs, where the goose is paid for many times over in the liquor drunk when paying the weekly subscription; the giving at Christmas a gold watch to the publican's best customer (!); the offer of a prize to the man who has the handsomest nose and to the mother who can produce the prettiest baby;—these, with various other artifices resorted to by *some* publicans to invite the public to drink, prove that the term "man-trap" is not undeserved.

subject, but little good could be expected: so far from it indeed, the love of strong drink has grown. For 500 years after the discovery of alcohol, "spirits" were confined to the shop of the apothecary. Since 1678 they have been sold by everyone who could obtain a license. Nearly sixty years ago, the Beer Act, framed with a view to making nourishing (?) malt liquor cheap and easily accessible to the people, flooded the country with drunkenness; and, some thirty years later, the "grocer's license" has, as already observed, largely increased it amongst women. The liquor interest was valued by the late Professor Leone Levi at 117 millions: and successive Governments have, not perhaps unnaturally, been averse to interfere with interests involved in so large an investment,—the less, as the sale of alcoholic beverages adds materially to the revenue, and as the investors—the brewers and distillers of England—form so powerful a *party* in the State. The disinclination to disturb "vested interests" has, however, been carried too far in the past, and a reaction is now to some extent setting in. It was finely said by Edmund Burke that "what is morally wrong cannot be politically right." It surely therefore, referring to the vast amount of mischief caused by the present almost unlimited consumption of these beverages, should be the duty of a Government to assist local authorities in the endeavour to diminish the number of liquor-shops in their midst, if not to remove them altogether. It is significant that, where *plébiscites* have been taken as to the advisability of shortening the hours of sale, of Saturday evening and Sunday closing, and of lessening the number of public-houses, whilst some have objected and others have remained neutral, large majorities of working-men—and these are they who are the most interested and who best understand the question—have advocated the adoption of all these measures. There need be no oppression or injustice. Licenses, which are periodically renewed by local magistrates, could be withdrawn after due warning extending over a longer or shorter time according to individual circumstances,—the subject of reimbursement, in exceptional cases, being fairly considered. The public-houses that remain, including clubs of every description—the genuine and the sham—should be placed under rigid surveillance. To attempt, however, to legislate in advance of public opinion would inevitably lead to failure. The popular sentiment is, happily, more and more inclining, if not to total abstinence, at least to extreme moderation in the use of alcoholic drinks. Drunkenness in public, not being fashionable or in good taste, is no longer tolerated in "society"; and the nation may, therefore, be congratulated on the fact. Too much must not be expected at once. Though

strongly in favour of teetotalism,—having personally experienced its benefits, though adopting it late in life and after a long residence in India,—I highly approve of the double platform of the Church of England Temperance Society, which admits non-abstainers as well as abstainers. Many of the former, after a time, join the ranks of total abstinence.*

EDUCATIONAL AND REMEDIAL.

The fact of so many persons of high intelligence and culture having become enslaved by “drink” sufficiently disproves the hitherto popular idea that the best antidote to the spread of drunkenness is education. Intensifying, in many cases, intellectual enjoyment and frequently taken to sharpen intellectual effort, it has become the ally of some of the most accomplished men and women of the age. Authors, orators, musicians, painters, and artists, as well as the educated of every type and class, have resorted to it. The truth of this statement is amply confirmed by the evidence obtained in Homes for Inebriates. From the last report (for 1888) of the Dalrymple Home it is found that, amongst the admissions during the year, there was a striking preponderance of educated gentlemen;—the learned professions being largely represented,—medicine (!) taking the lead with 14 medical men or students. There were 6 lawyers, 4 clergymen, 5 tutors, 19 clerks, 12 merchants, 4 manufacturers, 9 civil servants, 8 retired military officers, 4 farmers, 1 publisher, 2 stockbrokers, and 1 librarian.

Temperance, not general, education is required. But it must be many-sided. The head must be instructed while the heart is moved; and the earlier in life the instruction is commenced the better. It was a happy thought that led to the adoption of the term “Band of Hope.” Little children banded together for an object “at once patriotic and productive,”† animated by a healthy *esprit de corps*, and constituting (as we trust) the germs of future temperance families, are the living

* Happily, the leaven of total abstinence is freely permeating society. More than thirty M.P.’s, and as many Mayors, are total abstainers. Four out of the seven men from a repository—men whose work necessitates the possession of great muscular strength—recently employed in removing property, and five out of the nine policemen in charge—the sergeant being especially stalwart and well nourished—are teetotallers. Athletes of every description—cricketers, oarsmen, pugilists when in training, travellers, residents in hot as well as in cold climates, soldiers and sailors—all, who have given total abstinence a fair trial, advocate it. In striking contrast to the practice in vogue in the time of Pitt, Fox, and others, the most powerful and prolonged speeches—*e.g.* that by Sir C. Russell before the Special Commission last week was delivered on cocoa—are made, not under the influence of intoxicating, but of nourishing, beverages, as bovril, milk, coffee and tea, &c.

† Dr. Dawson Burns.

modern representatives of their mythical prototype in the box of Pandora. Temperance Societies—notably the National Temperance League, the Church of England Temperance Society, and the United Kingdom Band of Hope Union, have done, and are doing, much for the temperance education of the young people attending public elementary schools. For some years past Mr. Frank Cheshire, the educational lecturer of the National Temperance League, has given admirable illustrative lectures, on the nature and properties of alcoholic beverages; and the United Kingdom Band of Hope Union have, during the same period, employed teachers to give similar instruction. This society is making, by raising extra funds—£2,000 a year for five years have been acquired,—a vigorous effort to extend the work. Seven out of twenty-one candidates, well trained in chemistry and physiology, have been selected as lecturers. These are examples that might be followed by educational authorities. At present the encouragement, given to the masters of elementary schools to add instruction on the nature and effects of alcohol to the ordinary curriculum, is only permissive and very partial. Some managers give no encouragement whatever. Public opinion on this point is more advanced in America. In some of the States no one is eligible for the post of teacher unless he can produce a certificate of competency to teach about alcohol. There is no natural science more useful, if carefully taught, than physiology. Conveying as it does a knowledge of the wonderful machinery, with the beautiful contrivances for its sustenance, purification, repair, and reproduction, of the human frame, physiology, cultivated in a right spirit, is a most elevating as well as most useful study. A well-illustrated description of the various component parts of the body, and of the effects of alcohol upon them, will be a life-long education for the young. They will never forget it. It would be well if similar instruction were given in all schools. I am not without hope that, in time to come, personal abstinence will be insisted upon as an essential qualification in a master, as it should be in a missionary. So with Sunday-school teachers. All should be abstainers, enforcing precept by example. The comparatively greater success of Sunday-school teaching in America is due to the fact, that total abstinence is the rule amongst the teachers. Also in certain towns in England, *e.g.* Bristol and Bath, similar results have been accomplished—results due to the same cause. The two classes that exercise the greatest influence in society are ministers of religion and medical practitioners. Why therefore should not the lessons taught in the elementary school be continued, on a broader basis, in the university, the theological institution, and in connection with the hospital?

After School.—When boys and girls are emancipated from the good influences, which usually surround them during their school days, there is always a fear, in the case of the former particularly, of the ill effects of promiscuous companionship, with the inevitable adjuncts of tobacco and “drink.” It is now that senior bands of hope, drum and fife bands, guilds, and boys’ help-myself societies, all of which tend to save these embryo roughs from a career of idleness, dissipation, and (possibly) crime, are so valuable. With our town labour market so congested and a daily increasing population—owing in great measure to the inadequacy of our marriage laws which permit the young and thriftless and without the means of supporting a family to tumble into matrimony (how many marriages amongst the working classes are initiated and consummated in drink!) as easily as they would tumble into a ditch the annual increase throughout the United Kingdom is close upon 400,000 of which London alone contributes nearly a sixth—it is evident that some large and comprehensive scheme of emigration and State colonization, independently of the philanthropic organizations already in existence,* becomes imperatively called for. The advantage of technical instruction—how useful, for example, is a knowledge of carpentering to an emigrant—in our industrial and elementary schools is now especially evident. The emigration work carried on by Dr. Barnardo, by Miss Macpherson, and by Mr. Fegan, and others, is very encouraging,—as showing what can be effected, by a judicious selection of young people and by good management, in this direction. It is of course only the picked youth of England whom colonists would welcome, and for such there is in some parts of the world—in Canada for instance—abundant scope. Girls, brought up in the home-like way adopted in Dr. Barnardo’s village at Ilford where home industries are taught, would make excellent wives and housekeepers. Thus diverted early in life from the public-house and the attendant squalor and wretchedness which are only too characteristic of the slums and alleys of the Metropolis and some other large towns in the United Kingdom, the rescued “waifs and strays” of England, guided by loving hearts and kindly hands, may lay, in distant lands, the foundation of a future Greater and a more sober Britain.

Literature.—Of temperance literature there is no lack. During the past fifty years the subject has been dealt with, from every possible point of view, by writers of acknowledged eminence. The British Medical Temperance Association, annually increasing in numbers, now musters (including associated medical students)

* The President of the Local Government Board is now about to convene a commission to collect information and to call for and investigate schemes for carrying out these objects.

over 400 pledged medical members; and many of these contribute important facts, in some cases the result of original research, to the society's journal, which, published quarterly, contains a mine of scientific and clinical information in nineteen volumes. The public enlightenment, so far as it has gone, on the nature and effects of alcohol is largely due to the following standard publications: Dr. R. B. Grindrod's "*Bacchus*"; Rev. B. Parsons' "*Anti-Bacchus*"; Joseph Livesey's "*The Great Delusion*" and his "*Malt Liquor Lecture*"; Dr. W. B. Carpenter's "*Use and Abuse of Alcoholic Liquors in Health and Disease*"; Professor J. Miller's "*Alcohol, its Place and Power*," and "*Nephalism, the True Temperance*"; Dr. F. R. Lees' "*The Science Temperance Text Book*," and other valuable works; Dr. B. W. Richardson's "*Six Cantor Lectures*"—a most able and exhaustive treatise—and his "*Action of Alcohol on the Mind*"; Dr. Norman Kerr's "*Unfermented Wine, a Fact*," "*Wines, Scriptural and Ecclesiastical*," and his recent complete and interesting work on "*Inebriety, its Etiology, Pathology, Treatment, and Jurisprudence*"; Archdeacon Farrar's "*Duty of the Church in the Present Crisis*," &c.; "*The Temperance Bible Commentary*," by Dr. F. R. Lees and Dr. Dawson Burns—a most instructive volume on the scriptural aspect; Axel Gustafson's "*Foundation of Death*"—a useful repertoire; "*Our National Resources; and how they are wasted*," with other similar papers, by William Hoyle; "*Temperance as Taught by the Revised Bible*," by Rev. J. Compston; as, also, Dr. Dawson Burns' "*Analysis of the Temperance Revisions*";—and, amongst works appealing more to the feelings, Mrs. H. Wood's "*Danesbury House*"; Mrs. C. L. Balfour's "*The Burnish Family*," "*Holmdale Rectory, its Experiences, Influences, and Surroundings*"; and "*The Devil's Chain*," by the Author of "*Ginx's Baby*"; &c., &c. The Temperance Reading Books by Richardson, Ridge, and Ingham, as also the American "Pathfinder" Series, intended for children, are instructive for all beginners. Most temperance societies issue a periodical, one or other of which everyone interested in temperance work should take in and distribute after perusal. The organ of the Church of England Temperance Society—"The Church of England Temperance Chronicle,"—and "The Temperance Record" published by the National Temperance League,* are amongst the principal in England; and they give excellent weekly accounts of temperance progress. Each publishes a yearly retrospect; and the Annual of the League, edited by the League's indefatigable Secretary—Mr. Robert Rae,—is a complete dictionary of the current temperance events of the year.

* All temperance publications may be obtained at the Dépôt of the "National Temperance League," 33 Paternoster Row, London, E.C. A circulating temperance library would be an advantage to many temperance writers.

It is to be regretted that the temperance press is not more utilised. More popular publications, description of personal experiences, are required,—more records of original professional observations and researches similar to those instituted, from time to time, by Dr. B. W. Richardson, by Dr. Norman Kerr, and more recently by Dr. G. Harley. Money prizes—a few of considerable amount—have been given (by brewers even) for essays on total abstinence; but, valuable as some of these are, there is rather a tendency *only* to quote from the labours and experiences of others. A collection of personal observations, however insignificant they may appear to the individuals, might form a very useful confirmation of, if not a novel addition to, what has already been recorded. It is gratifying to find that the cause of temperance has literary advocates amongst Indian gentlemen. Mr. Inan Chandra Basak, of Calcutta, has lately published a book termed “*Surapan*”—a *Handbook of Temperance*, which gives an excellent *resumé* of temperance writings, as also a catalogue of useful publications. The address on the morbid anatomy and pathology of chronic alcoholism, delivered by Dr. J. F. Payne before the Pathological Society, in London, in December last, together with the discussion which followed, furnish most encouraging evidence that the profession is taking a more active part than heretofore in investigating the pathological action of alcohol.

Personal effort, with the exercise of personal influence, and a consistent personal example, are incumbent upon all temperance workers. All can do *something*, either by giving temperance addresses; by writing; by distributing (not of course obtrusively, but as opportunity offers and where they will probably be useful) temperance leaflets; by banishing alcoholic beverages from the house, and not producing them on festive occasions or under any circumstances out of compliment to non-abstaining friends; by discouraging the social customs in which “drink” plays a prominent part, *e. g.* wetted bargains, holding meetings or paying money* in public-houses, standing treat, &c.; by engaging as servants none but total abstainers, without mention of “beer money;” by never sending employes to liquor-shops for change; by not, whilst comfortably seated in a place of entertainment, leaving the coachman and footman in charge of the carriage—cold and comfortless without; by letting one’s “belongings” attend temperance gatherings on every possible occasion;—by, in short, striving, with an undemonstrative but unwearying enthusiasm—the fire does indeed sometimes require blowing up

* By the Truck Act of 1887 it is no longer permissible to pay labourers, as has been the custom in many agricultural districts, in cider, beer, or any other intoxicating drink.

even amongst the best of temperance workers,—to enlighten our neighbours on this burning question. Declamatory condemnation of the liquor traffic, in which many excellent and even religious men are engaged—several would give it up if they could whilst a few *have* done so,—is at once unjust, uncharitable, and likely to be even mischievous.

Sympathy is a powerful factor in the work of reclamation. God alone knows the nature and strength of the temptation under which the fall, in many cases, has taken place. Let us extend the hand of a loving brother or sister, and do for the fallen what we should be grateful for them to do, under like circumstances, for us. Abstention from intoxicating beverages for the sake of another is genuine sympathy. Alas! how seldom is it practised! Unhappily, too, the true nature of alcohol being still imperfectly understood, relatives and friends, on the return of one addicted to drink from a home for inebriates where the thirst for liquor has, it may be, been practically extinguished, do not, as a rule, hesitate to place beer or wine upon the table, believing that the poor inebriate has been permanently cured.

Taking the Pledge to help others if not ourselves, and *wearing the blue ribbon* for the same reason, are forms of sympathy that have their value.

Drawing-room Meetings, being usually held in the afternoon when men of business cannot well attend, are especially useful for enabling lady workers to compare experiences which ordinarily lie in a sphere inaccessible to men, viz., amongst the wives and mothers of the working classes, and also to influence their lady friends. I was once chairman of such a meeting when the proprietress of a ladies' school said to the hostess on going away that, being much impressed with what she had heard—it was all quite new to her—she had determined to henceforth conduct her school on the principles of total abstinence. No better evidence of the value of these gatherings could be adduced.

Mothers' Meetings furnish lady workers, whether in the temperance or any other cause, with favourable opportunities for inculcating lessons of industry and thrift, and for influencing for good in every possible way, the wives and mothers before referred to. It has been well said that, in the present day, the salt of the earth is, in the United Kingdom, a feminine number. Few have any conception of the vast amount of loving effort that is being put forth in various directions, for the benefit of the people, by the unmarried ladies of England, who are indeed the mainstay of the movements which they have either initiated or undertaken to support. It would greatly help temperance work if abstaining local medical practitioners would annually give at

these meetings a few lectures as to the true nature of alcoholic drinks.

Temperance Societies, to one or other of which all temperance workers should belong and actively endeavour to promote its objects, possess, in their periodical meetings, a valuable means for disseminating a knowledge of temperance principles. The public speaker and lecturer, professional as well as lay; diagrams illustrative of the morbid action of alcohol; the magic lantern; readings from standard authors; recitations; music and singing; mixed entertainments (like the good old-fashioned "penny readings") the entertainers coming as much as possible from the locality itself or the neighbourhood;—all may be laid under contribution for affording communities the opportunity of enjoying, without the aid of intoxicants, rational and amusing recreation. The meetings should be freely advertised not only in the local magazine, which is not always read through, but in friendly shopkeepers' windows, on hoardings and every other available surface, at railway stations, and from the platform and the pulpit. A well-lighted room with ample and comfortable accommodation, a genial chairman, with general good management, are essential to success. The subject of temperance need not always be introduced, though the link between it and the evening's pleasure should not be lost sight of. It is satisfactory to know that the conversaziones held in India in connection with local branches of the National Indian Association are, sometimes, enlivened with music. The "penny reading" form of entertainment seems to be well suited for such gatherings.

Oratory, as an outcome of temperance education, is often a most powerful adjunct. Well-considered addresses, whether from the pulpit or platform,—delivered in impassioned utterances flowing with burning eloquence from the lips of those whose hearts seem to be on fire with the "enthusiasm of humanity,"—cannot fail to arouse more than a mere passing interest. Such oratory frequently leads to what is so much needed—enquiry. *Orator fit.* Given a good cause (as is this), a warm heart, and the power of speech, there are few who cannot attain to a certain amount of excellence as public speakers. Quondam drinkers, who having themselves been once drink-enslaved are now free, are often the most effective and do the most good.

The Establishment of the Temperance Hospital, apart from its individual use, was an excellent design for educating the public as to the comparative inutility of alcohol in the treatment of disease. Opened thirteen years ago in Gower Street, and subsequently transferred to the Hampstead Road, it bids fair to be reckoned as one of the permanent general hospitals of Lon-

don; and it will, I hope, be made incumbent on the medical student of the future to inform himself, before receiving a qualification to practise, as to the nature of its work. The most important operations are performed, and the most serious diseases treated, in this hospital *without the use of alcohol*; though the surgeons and physicians are at liberty to use it if they consider it necessary,—a permission however of which they rarely avail themselves. The death-rate is, if anything, less than in other hospitals where alcohol is still regarded as a sheet-anchor.

By the substitution of milk for malt liquor, &c., in many of our *Unions* and *Infirmaries*, it has been further demonstrated that alcohol is *not required* in public institutions, even amongst the old and broken-down.

The Institution of *Homes for Inebriates*, some of them being legalised* under the “Habitual Drunkards’ Act” of 1879 which, then put on its trial (as it were) as a tentative, has recently been made, owing to its undoubted utility though it is capable of improvement, a permanent measure,† is a pleasing sign of the growing enlightenment of the English public on the question of places of refuge for the unfortunate victims of drink. It is now being generally understood that they are not fit subjects for a lunatic asylum, but for a *Home*. As the result of personal experience, having been for a short time in medical charge of the Dalrymple Home, I venture to suggest that, for a Home to be really useful, the following regulations should be in force:

1. The resident manager, by preference an experienced married medical man, with a wife as much interested in the work as himself, should be, together with every member of his household, a rigid total abstainer.

2. The Home, situated in a dry, bracing (but not too cold) and picturesque locality, should be a mile at least from any place where drink may be obtained.

3. Six months should be the minimum period of residence:—the longer, the greater probability of a permanent cure. But a shorter time is worse than useless.

4. The classification of the inmates, when each cannot have a separate room, should be carefully considered.

* These Homes would be more resorted to if the rules for admission involved less formality and exposure. It is deeply to be regretted that there is no suitable provision, throughout the United Kingdom (as there is in America), for the poor and impecunious inebriate.

† Judicial authorities should, as in America and in some of our colonies, have the power of consigning, under a medical certificate, dangerous drunkards to a Home;—as they now consign the insane to an asylum.

5. Homes for females should, for obvious reasons, be totally distinct from those for males ;—if a hundred miles apart, so much the better.

6. During residence, every opportunity should be afforded for the cultivation of the intellect and the affections, as well as for the physical improvement of the body. An astronomical telescope; a microscope; a well-stocked and well-managed library and reading-room; the means of acquiring some useful technical knowledge, as meteorology, photography, music, drawing, painting, &c.; together with carpentering and a certain amount of manual labour, as gardening; will, with occasional interesting and instructive excursions into the country, well fulfil these objects and show how, instead of wasting time, it may be profitably as well as pleasantly employed. Amusements are essential, of course, but a continuous round of them becomes monotonous and contributes to listlessness and the formation of idle habits. Recreation should be what its name implies; viz., a refreshment of health and spirits after toil.

The Dalrymple Home, in which all these points have from the first been more or less considered, is officially regarded as a model institution of the kind. No pecuniary advantages are derived from its working, all profits being devoted, by the philanthropists who govern it, to the furtherance of the temperance cause.

Remedial.—There is not, as supposed by the public, any reliable so-called “cure” for drunkenness.* When, the crave being established as a disease, the desire periodically returns, something may then be taken to quiet the nervous system, which, at those times, is in a state of extreme irritability. None but those who have experienced, or witnessed, it can appreciate the intensity of the sufferers’ agony: and one cannot, therefore, be surprised if opium or some other sedative be habitually resorted to. In most cases a strong infusion of hot coffee or kola nut—something to remove the intolerable depression—will suffice,—with suitable fluid nutriment—the stomach is usually too weak to bear solid food—to raise the tone of the jaded nerves. In others, and these will be best diagnosed by a medical man, a sedative, to be subsequently withdrawn, is really necessary. In nearly all cases a nervine tonic—strychnine, quinine, or arsenic, combined with an infusion of gentian or cheretta and an acid (dilute nitro-hydrochloric, or phosphoric,

* Various *infallible* (?) remedies are recommended, as preparations of the red cinchona bark, or of quassia; and saturating every article of food with alcohol so as to create a disgust for it. But they are, I believe, seldom successfully resorted to in this country. The last would not always be practicable.

acid)—will do good. But, on no account should alcohol in any form be given. The “tapering-off” system may succeed in milder cases, in the absence of the drink crave, but it is inadmissible where this condition exists. The sufferer must endeavour to comfort himself with the thought that his sufferings will, in due course, come to an end.

Counter-attractions.—The best form of counter-attraction to the public-house is a well-ordered home. Social clubs and “home” are antagonistic. The former may be useful for bachelors, but *happily* married men are best away from them. If there were more prudent marriages, there would be fewer aggressive step-mothers and irrepressible mothers-in-law, who tend to drive men into the public-house or the army. Various causes have been assigned,—apart from the temptations thrown in their way,—for the tendency to drink amongst the poor. hovels for habitations—*landlords* should be *compelled* by law to provide *proper houses*;—abject poverty; comparing their own miserable and hopeless lot in life with that of their wealthier neighbours; the absence of any form of religion; with general ignorance; are surely excuse enough for drowning care in drink, which of course only intensifies the trouble, and leads to further indulgence in the intoxicating cup. And thus the disease and its remedy react upon each other. The facts which led to the publication of the *Bitter Cry of Outcast London* have long been known to temperance and other workers living in the East-End of London. But, in the presence of so much temptation to drink, in the absence of suitable dwellings, and so long as no check is put upon the immigration of foreign paupers, but little can be done even by those noble men and women of position and culture who are living among these “outcasts,” and endeavouring, by personal influence and example, to cheer their lives and improve their condition. That little, however, and more might be effected in many communities throughout the empire, if those in the higher ranks of life would identify themselves with their poorer neighbours, take an interest in their affairs, and, in times of difficulty, help them with practical sympathy and support.

The taste of the better class of the working men of England for art of every description should surely be largely encouraged by Government. The opening of museums and picture galleries on Sundays and in the evening when these men could enjoy them with their wives and families would tend to wean many from the public-house, the music hall, and the dancing saloon. So with music. Who has not, at our large popular concerts, seen the working man drinking in the glorious music of the *Messiah*, and thoroughly appreciating the pathos of some of our

most touching Scotch and English ballads and Irish melodies? Gratifying beyond expectation were the results of the experiment made, a few years ago, when the National Temperance League provided in Exeter Hall what were known as the Saturday Evening Concerts for the million,—the cost of admission ranging from a penny to sixpence for each person. High-class music, vocal and instrumental (interspersed with some excellent recitations), by skilled performers. So patriotic a movement, which obviously could not be continued at a loss by a philanthropic though not independent society, might commend itself to those in power. The late Mr. Hullah did much to popularise music and singing, which are now very generally taught in middle-class schools and in music guilds. Why not in elementary schools? *

Every encouragement should be given to gardening, † though it be limited to the window. The more of technical knowledge that is given in elementary schools, the greater the prospect of young men finding employment, of settling and becoming good citizens. The coffee and cocoa taverns being established throughout the United Kingdom—genuine houses of refreshment where a breakfast-cup of good ‡ coffee or cocoa and a plate of bread and butter may be procured for twopence, and where a wife can get her husband's steak fried for a trifle (thus saving a fire at home)—are doing much in counteracting the attractions of the public-house.

A great work is quietly being accomplished, but the workers of to-day will not see the final result. The seed sown by the present generation will bear fruit in another. *We* must be content "to labour and to wait."

* As music is already being taught—the Tonic Sol-fa and Staff Notation with School Cantatas—in Board Schools, we should, perhaps, wait for results before conveying the idea that the children in our elementary schools lack musical instruction. Where, however, decided musical talent is displayed, will it be cultivated otherwise than in *class singing*?

† The distribution, by the Commissioners of Her Majesty's Works and Public Buildings, of surplus bedding-out plants from the public gardens of the Metropolis to the working classes, through the agency of ministers of religion, school committees, and others interested, is an encouraging step in this direction. Application should be made to the Superintendent of the park nearest to the applicant, or to the Director of the Gardens at Kew, or of those at Hampton Court.

‡ The provisions are not, unfortunately, sufficiently good and attractive in all coffee and cocoa taverns:—hence their failure in some places. Lockhart has established more than fifty of these taverns—excellent and consequently successful—in London alone.

